Connection of detectors
Labor Strauss

User Manual

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1 Introduction

1.1 General

This User Manual provides the authorized installer with the information necessary for installation, connection and commissioning of fire detectors of make Labor Strauss, on the Fire Detection Control Panels Series BC06, BC08, BC016, BC216 and BC600.

1.2 Types of symbols

Especially important sections of text in this User Manual are indicated with symbols. The following symbols are used:

Means DANGER! Ignoring these directions can result in danger to life and health.

Means **ATTENTION!** Ignoring these tips can result in system malfunctions or damage to property.

Means **TIP!** Here the text contains explanatory notes which can make the installation, connection and commissioning easier for you and/or which are supposed to enhance your understanding of how things are connected.

Means that the country-specific and/or the site-specific requirements of the **DEVICE** and/or **SYSTEM APPROVALS** of the fire detection system must be observed.

Means that in case of ignoring this text, binding **European Standards** can be violated and therefore perhaps the device must not be used within the EU.

1.3 Important tips

Fire detection systems and devices, respectively, must always be planned, installed and put into operation by specialists who are trained on a continuous basis. The specific specialist training on the functions of the fire detection control panel and the fire detectors that are connected to it must be provided by Labor Strauss Sicherungsanlagenbau GmbH Wien (LST) or by persons expressly authorized by LST for this purpose.

The present manual does not provide any information concerning the expert planning or design of a fire detection system. It replaces neither the installer's required technical qualification nor his or her specific training.

Prior to opening the housing of the fire detection control panel, of a BCnet sectional control panel or of a power unit, switch off the mains power and ensure that it is not switched back on! When the housing is open and mains power is connected, certain components carrying voltage at levels that are life threatening are exposed! The protective covering for these components should never be removed.

When working on the fire detection control panel and when handling components, observe the usual protective measures for discharging static electricity charges: Before and during the work being performed on the printed circuit boards, static charges from your body must be reliably discharged by touching an earthed piece of metal. Mains-operated tools (e.g., soldering irons) must absolutely be equipped with protective earthing or be expressly approved for use on installations that are static-sensitive. The usual **protective insulation is not sufficient.**

During installation, maintenance and servicing, observe the applicable laws, standards and guidelines on the installation and maintenance of fire detection systems!

When planning/parameterising special detectors, see the documentation of the manufacturer and note that software may be needed.

If a conventional zone gets disabled, all detectors that are connected to it are put out of action. In this case, alarms cannot be detected.

2 Conventional technology

2.1 General

The present section specifies the connection of conventional detectors to the conventional detector interfaces. All detectors of a zone are connected in parallel, in the last detector a line terminating element must be installed. Each detector has a normally open contact. In case of activation, the resistor R is connected to the line and the quiescent current is increased.

The circuit diagrams in conventional technology that are shown in Chapter 2 also apply to the following control panels, provided that the respective requirements regarding end-of-line resistors / alarm resistors are fulfilled:

- Series BC600 - The 5.6kOhm end-of-line resistor / 1kOhm alarm resistor must be parameterised.
- Series BC216 - A 5.6kOhm end-of-line resistor has to be used.
- Series BC016 - The 5.6kOhm end-of-line resistor must be parameterised.
- Series BC08 - The end-of-line element must be parameterised. Address modules cannot be used with the BC08. For the connection that conforms to VdS, a capacitor is to be used as end-of-line element.
- Series BC06 - The 5.6kOhm end-of-line resistor must be parameterised. In the case of the BC06 it is not possible to use address modules.

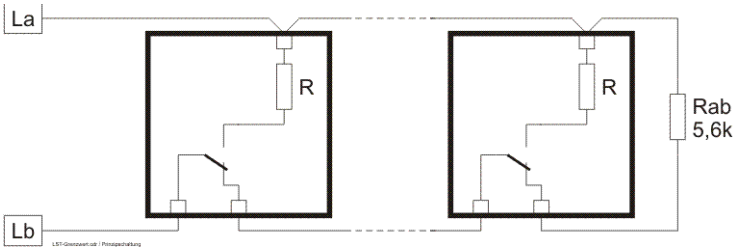
If a different end-of-line element than the one mentioned above is used, the connection has to be adapted. The explanations and drawings refer to an end-of-line element of 5.6kOhm.

If a conventional zone gets disabled, all detectors that are connected to it are put out of action. In this case, alarms cannot be detected.

2.1.1 Installation of detectors

See installation instructions for your country.

2.1.2 Schematic circuit diagram of a detector zone



Rab end-of-line resistor in the last detector

R alarm resistor

2.1.3 Conditions of zones

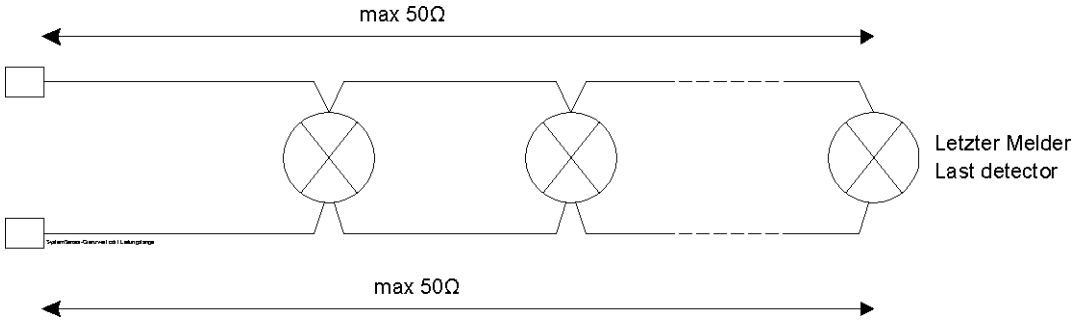
To evaluate the condition of a zone, the line current is sensed. The measured value is processed by the microcontroller and the corresponding condition of the zone is determined. For the threshold values for alarm, wire breakage and short circuit, please refer to the documentation of the fire detection control panels.

To perform a reset of a conventional detector, the corresponding zone has to be disabled for at least 8 seconds.

2.1.4 Cable requirements

The line resistance of the conventional detection line must be below 50 Ohm per wire.

This corresponds, when using a 0.5mm² wire (AWG20), to a distance of approx. 1400m.



2.2 Connection of manual call points

The following manual call points can be connected to a conventional detector interface of the fire detection control panel:

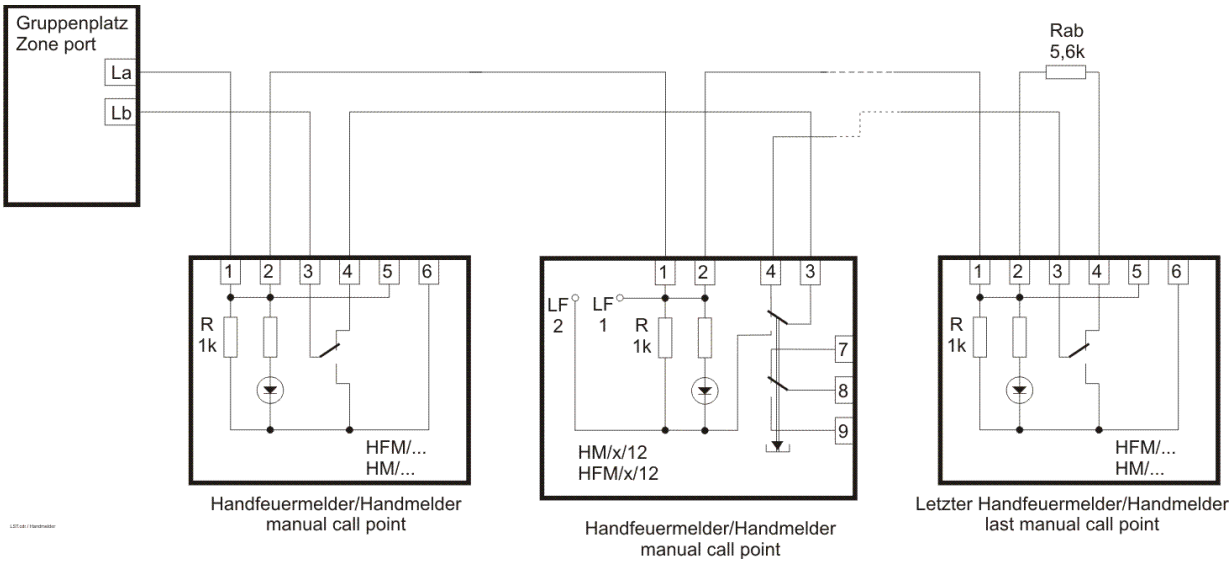
Description	Type
Manual Call Point Series HFM/HM	HxM/x/11/xx
Manual Call Point Series HFM/HM – 1 auxiliary contact	HxM/x/12/xx
Manual Call Point Series HME	HME/FFFF/11/TT/LL/x
Manual Call Point Series HME – 1 auxiliary contact	HME/FFFF/12/TT/LL/x
Manual Call Point/Red/Standard	UNI3021C
Manual Call Point Series C31	51.12_0z

Each manual call point has a built-in alarm resistor (R = 1kOhm/0.35W). In the last manual call point, an end-of-line resistor (Rab = 5.6kOhm) has to be installed.
The end-of-line element can be changed in the parameter setup of the Fire Detection Control Panel (BC06/BC016/BC600). The factory setting is Rab = 5.6kOhm.

All diodes that are not denoted are of type 1N4004.

2.2.1 Connection of HFM/HM

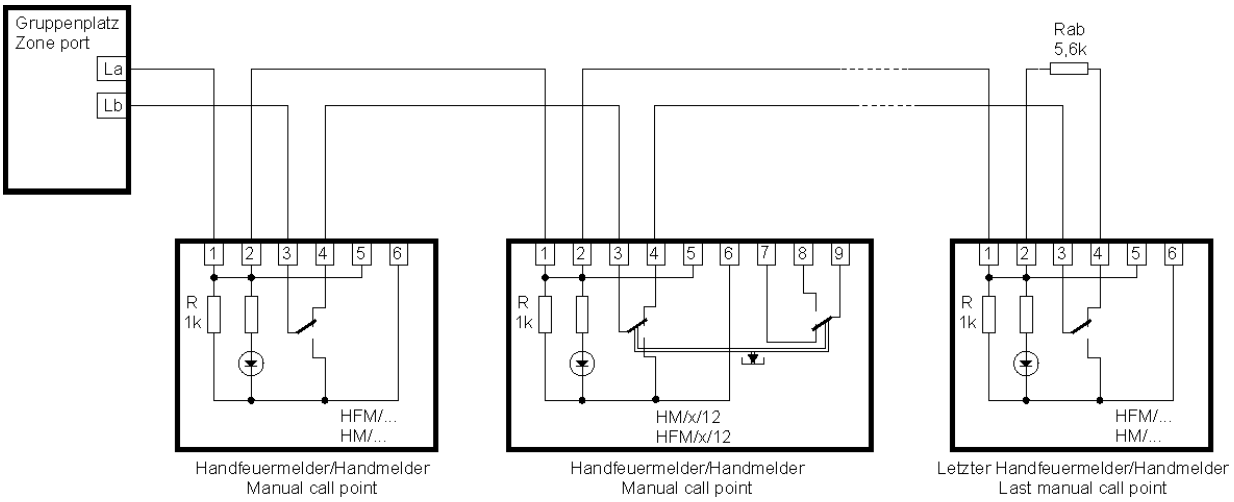
Old version of the Manual Call Points HFM/HM



Old manual call points HM/HFM/x/12 can be distinguished from new ones by means of the following characteristics: at the top left of the componentry, old manual call points HM/HFM/x/12 have a terminal strip with 4 terminals (1 through 4), new ones have a terminal strip with 6 terminals (1 through 6).

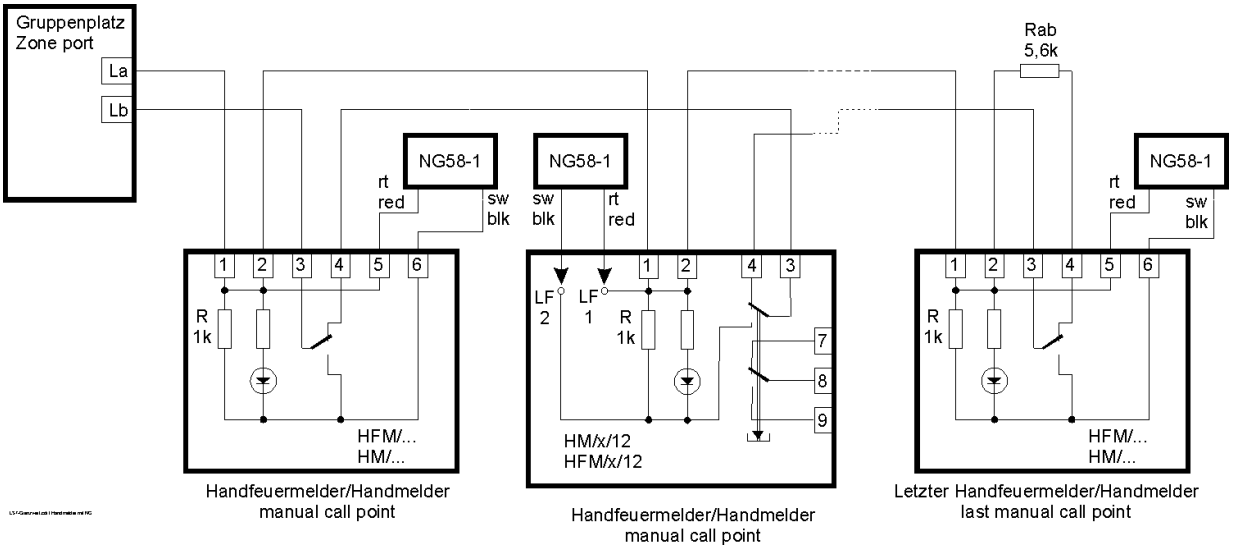
Connecting the mains voltage 230VAC to the change-over contacts 7, 8 and 9 is only permissible for the type HM/HFM/x/12/xx/N (with N standing for mains voltage)! It differs from the type HM/HFM/x/12/xx in that it has additional covers for the insulation of the mains voltage. The instructions on the safe use, which can be found in the enclosed packet, must be strictly observed!

New version of the Manual Call Points HFM/HM

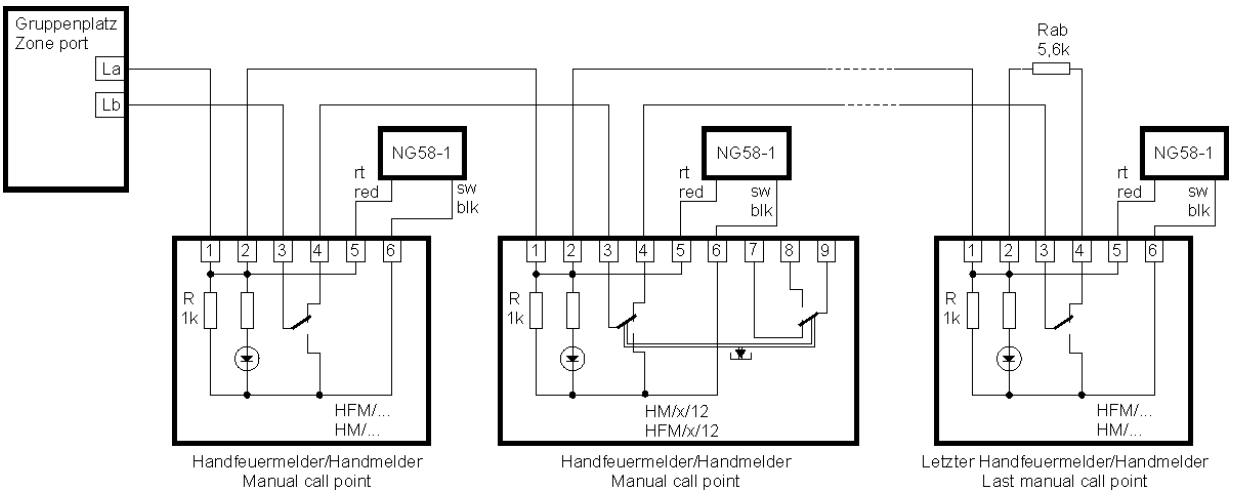


2.2.1.1 Connection of HFM/HM with individual Address Module NG58-1

Old version of the manual call points

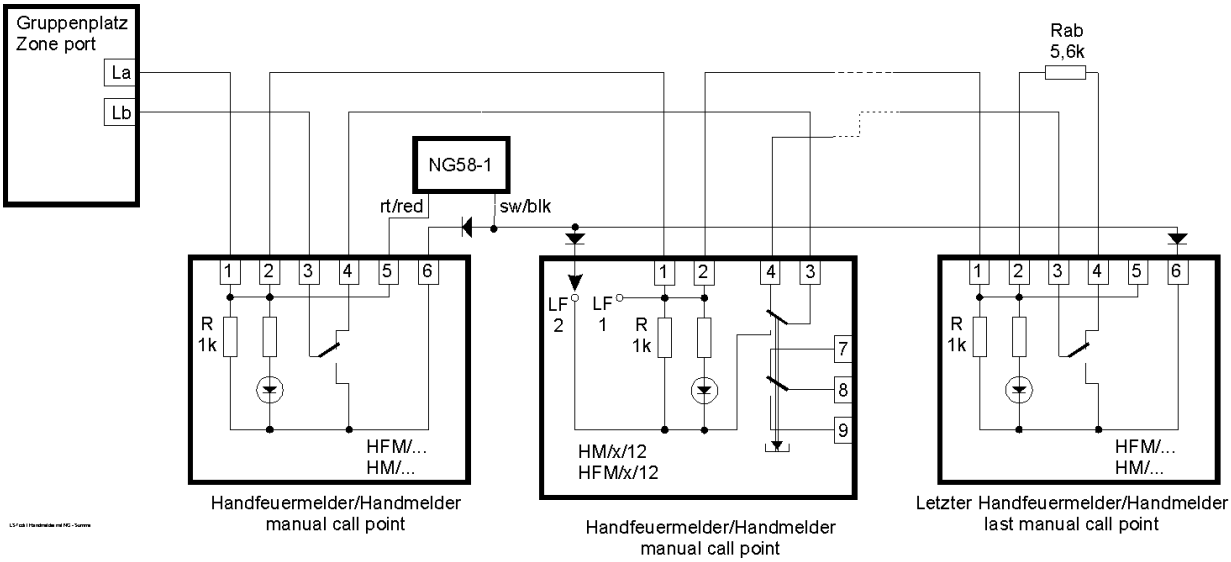


New version of the manual call points

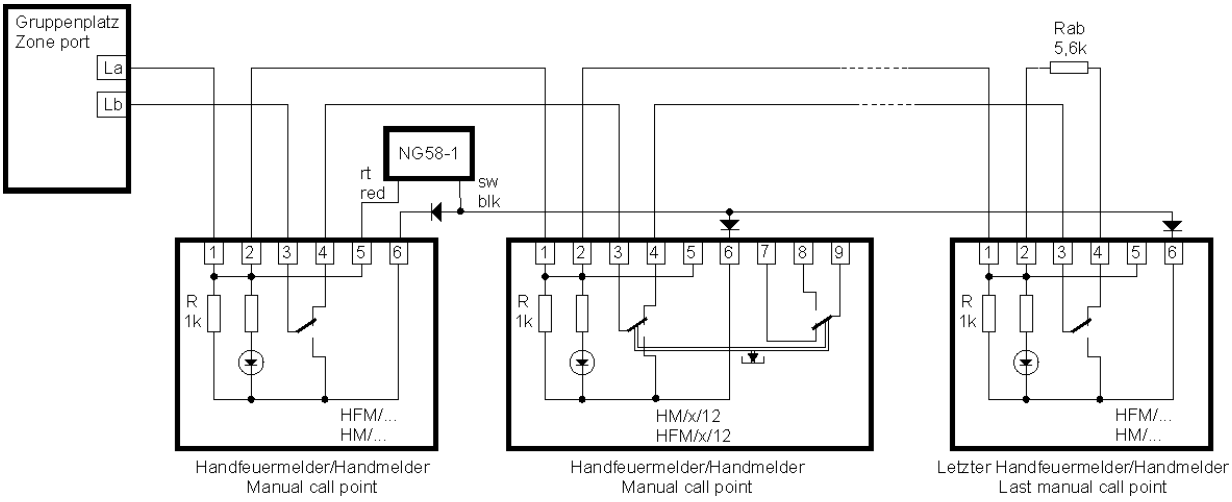


2.2.1.2 Connection of HFM/HM with Address Module NG58-1 – sum indication

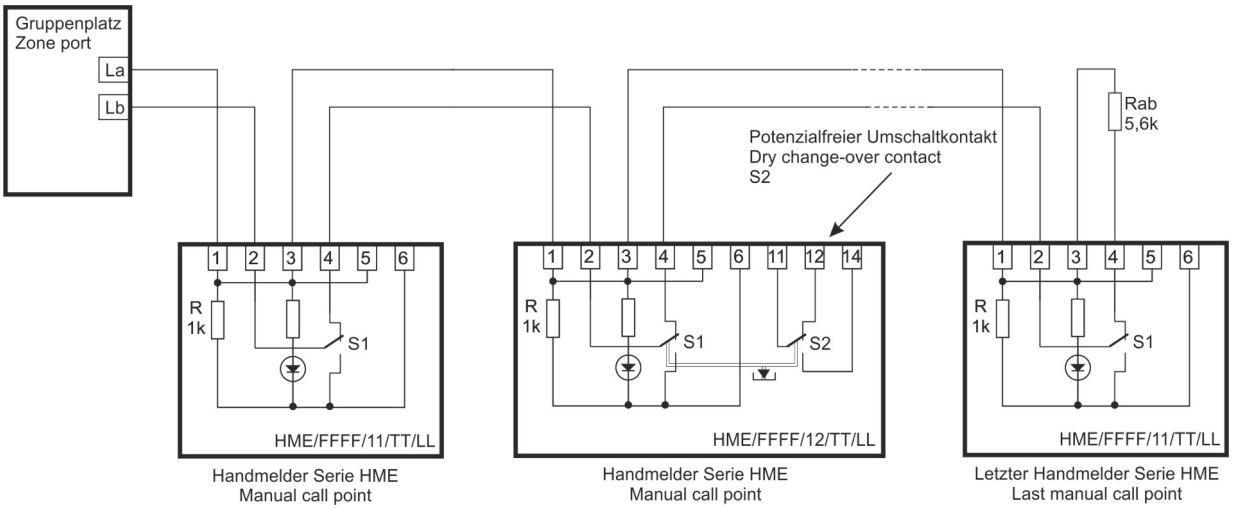
Old version of the manual call points



New version of the manual call points



2.2.2 Connection of Manual Call Points Series HME

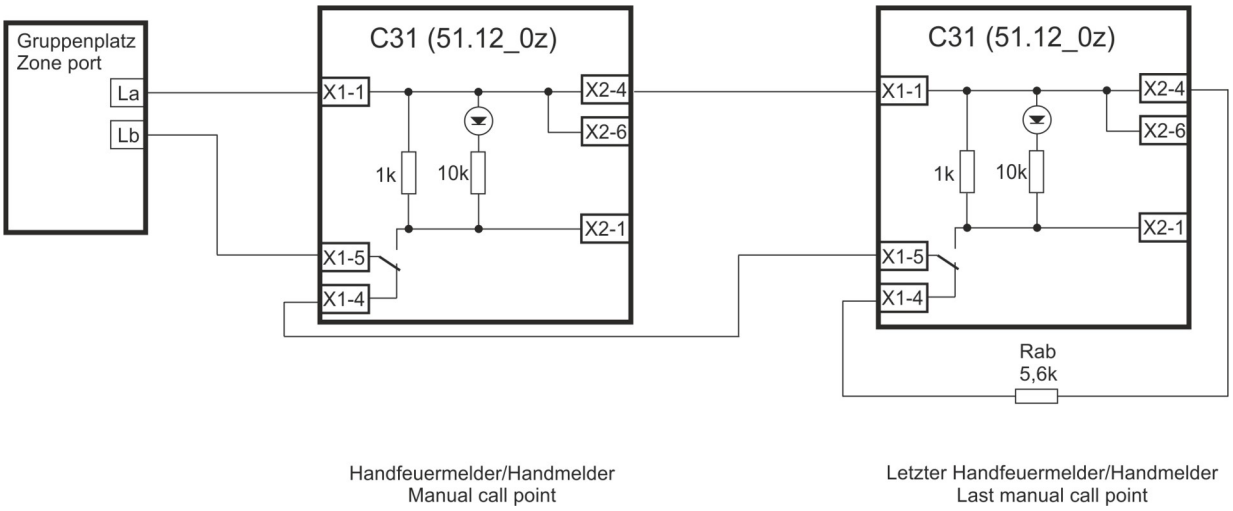


Connecting the mains voltage 230VAC to the change-over contacts 11, 12 and 14 is only permissible for the type HME/FFFF/12/TT/LL/N (with N standing for mains voltage)! It differs from the type HME/FFFF/12/TT/LL in that it has additional covers for the insulation of the mains voltage. The instructions on the safe use, which can be found in the enclosed packet, must be strictly observed!

Address modules are connected to the Manual Call Points Series HME in the same way as to the Manual Call Points Series HFM/HM. The connection of these manual call points is shown in Chapters 2.2.1.1 and 2.2.1.2.

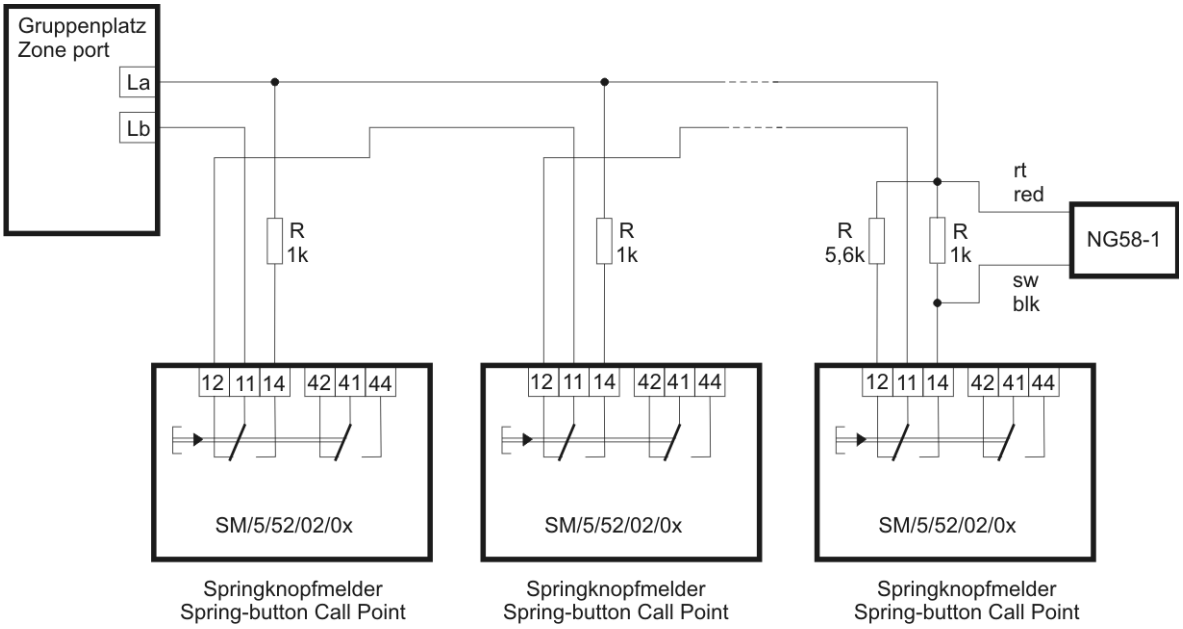
2.2.3 Connection of a C31

The alarm resistor has already been installed. The end-of-line resistor has to be connected to the terminals of the C31.



Colour	Article number	Name
Red	245881	51.1250z
Yellow	245882	51.1260z
Blue		51.1270z
Green		51.1280z

2.3 Connection of the Spring-button Call Point SM/5/52/02/0x



2.4 Connection of automatic detectors

2.4.1 Automatic detectors Series FC600

The following fire detectors can be connected to a conventional detector interface of the fire detection control panel:

Description	Type	max. number per detector zon	EN 54-5 class
Optical Smoke Detector	FC600/O	32	
Thermal Rate-of-rise Detector	FC600/TDIFF/57	32	A1R – 57°C
Thermal Max Detector	FC600/TMAX/78	32	BS – 78°C

The Series FC600 detectors can be used with the Detector Bases FC600/BR, FC600/BRD and FC600/BREL.

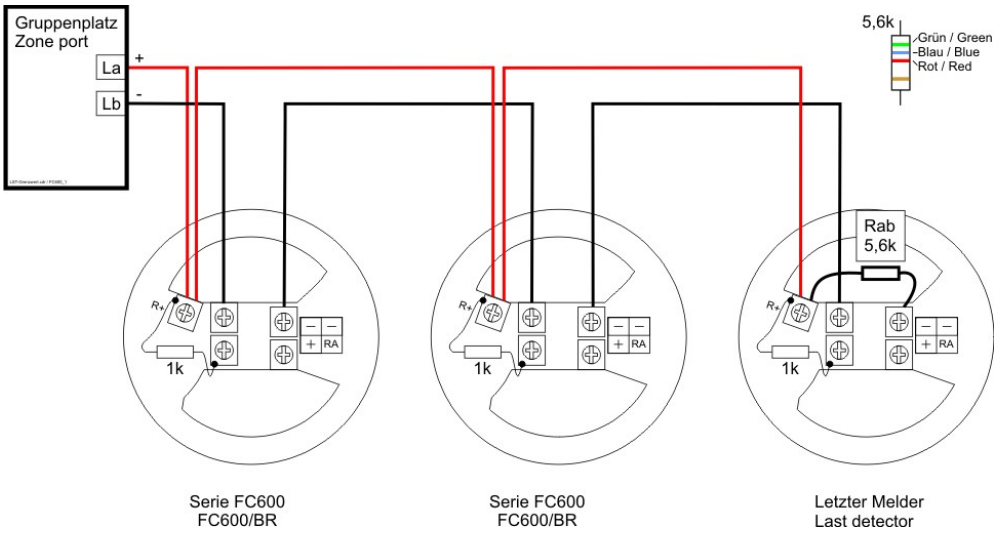
2.4.1.1 Arrangement of wires in Detector Base FC600/BR, FC600/BRD, FC600/BREL

Strip the insulation just as short as the terminal requires for connection. The alarm resistor R = 1kOhm between terminals "R+" and "+" is already connected. Keep in mind to connect the end-of-line element (resistor or capacitor) at the terminals "R+" and "OUT" of the last element.

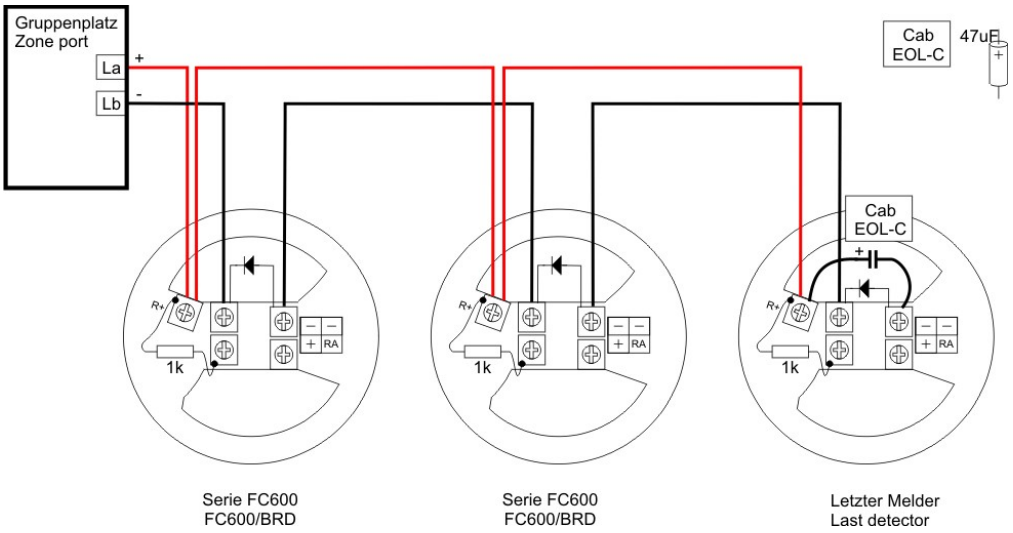
The removal of a detector from the Detector Base FC600/BR will open the conventional zone and a fault (broken wire) will be displayed at the panel.

The use of the Detector Base FC600/BRD, which has a built-in diode, prevents the conventional zone from being opened when a detector is removed from its base. As a consequence, a capacitor has to be defined as end-of-line element – for further instructions please consult the corresponding manual of the fire detection control panel.

2.4.1.2 Connection



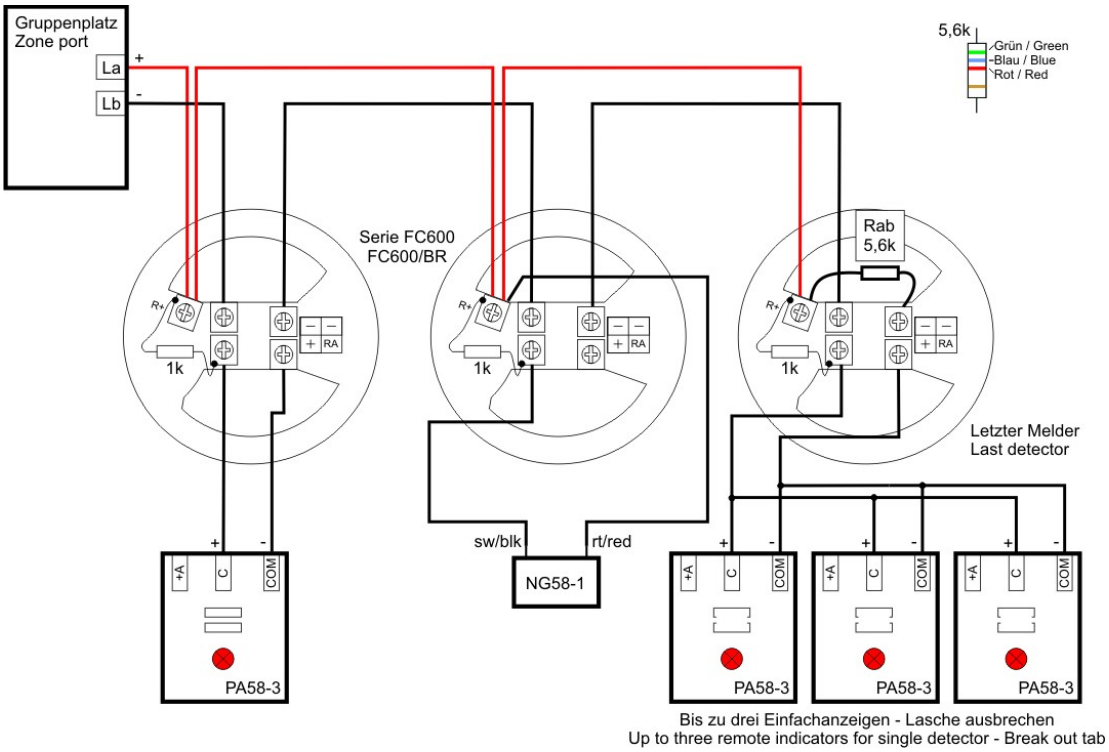
2.4.1.3 Connection with Diode Base FC600/BRD



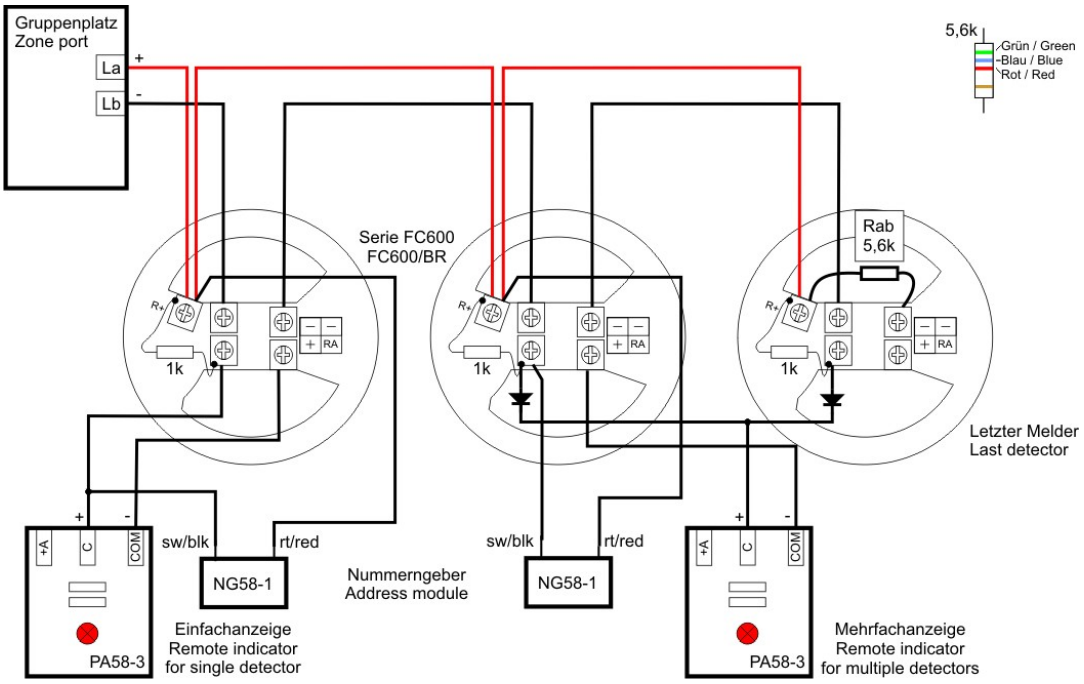
The detector base with integrated diode may only be used with a capacitive end-of-line element. At the moment only the BC06 and the BC600 can fulfil this requirement. The installation of diode bases with end-of-line resistors is not allowed. In the settings of the control panel, a capacitor must be parameterised as an end-of-line element.

2.4.1.4 Connection of detectors with Remote Indicator PA58-3 and Address Module NG58-1

Up to three remote indicators PA58-3 can be connected to the remote output of the detector. For this purpose the "TAB" of every remote indicator has to be broken out. When only one remote indicator is connected to the detector, the "TAB" must not be broken out.

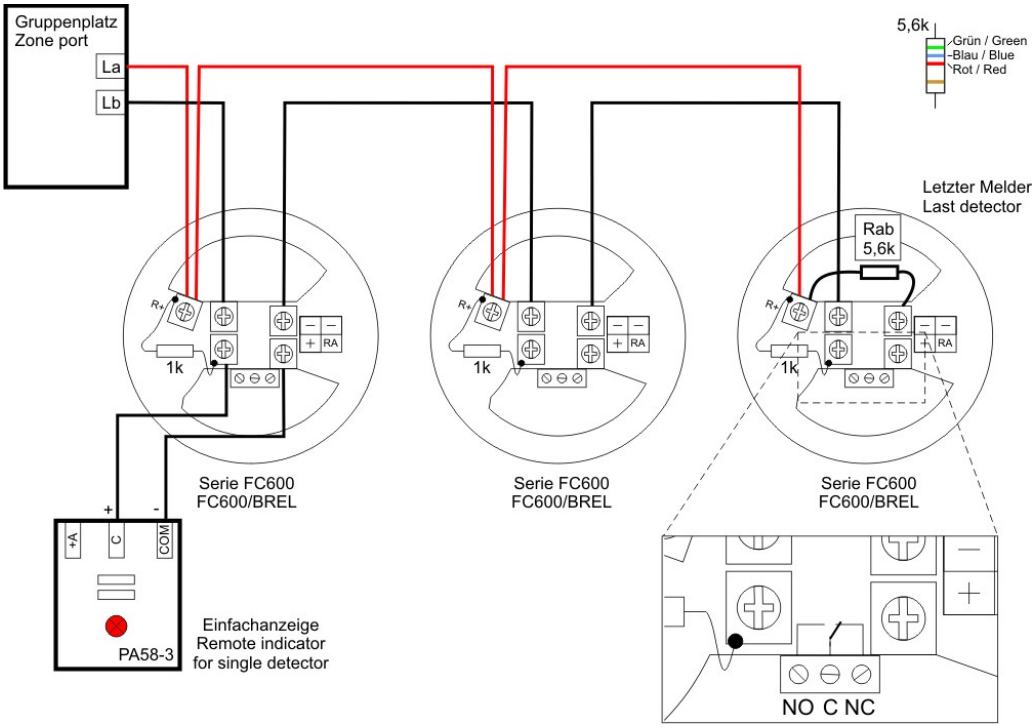


2.4.1.5 Connection of detectors with Remote Indicator PA58-3 and Address Module NG58-1



If an address module is connected to more than one detector, the address module is activated in the alarm condition of **one** of these detectors and indicates the preset address.

2.4.1.6 Connection of detectors with Relay Base FC600/BREL



The contact rating of the relay is 1A at 30VDC.

2.4.2 Automatic detectors Series FC650

The following fire detectors can be connected to a conventional detector interface of the fire detection control panel:

Description	Type	max. number per detector zon	EN 54-5 class
Optical Smoke Detector	FC650/O	32	
Thermal Rate-of-rise Detector	FC650/TDIFF/57	32	A1R – 57°C
Thermal Max Detector	FC650/TMAX/78[1)]	32	BS[1)] – 78°C

[1)] Class BS applies from firmware version 1.18 on. Thermal detectors with an earlier firmware version comply with class B and were delivered as type FC650/T/78. The firmware version can be found on the label on the bottom of the detector.

At the detector FC650/O, the degree of contamination can be read out by means of the Programming Unit FI700/PU (or the FI750/PU with an appropriate adapter).
In the case of the heat detectors FC650/TDIFF/57 and FC650/TMAX/78, the class according to EN 54-5 can be changed – see Chapter 3.3.2.7: "Expert mode" on page 185.

At the time of shipment, the class according to EN 54-5 is marked by means of a label on the bottom of the detector. If you should change the class, the label has to be updated manually.

With all Series FC650 detectors, the Programming Unit FI700/PU (or the FI750/PU with an appropriate adapter) can be used to determine the function of the status LED in the normal condition (dark/flashing).

The Series FC650 detectors can be used with the Detector Bases FC600/BR, FC600/BRD and FC600/BREL.

2.4.2.1 Arrangement of wires in Detector Base FC600/BR, FC600/BRD, FC600/BREL

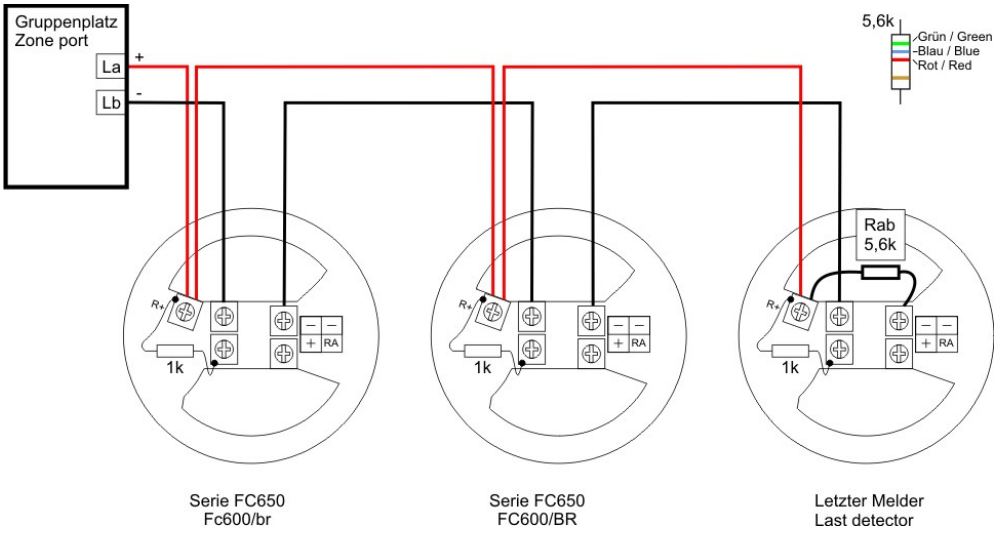
Strip the insulation just as short as the terminal requires for connection. The alarm resistor R = 1kOhm between terminals "R+" and "+" is already connected. Keep in mind to connect the end-of-line element (resistor or capacitor) at the terminals "R+" and "OUT" of the last element.

The removal of a detector from the Detector Base FC600/BR will open the conventional zone and a fault (broken wire) will be displayed at the panel.

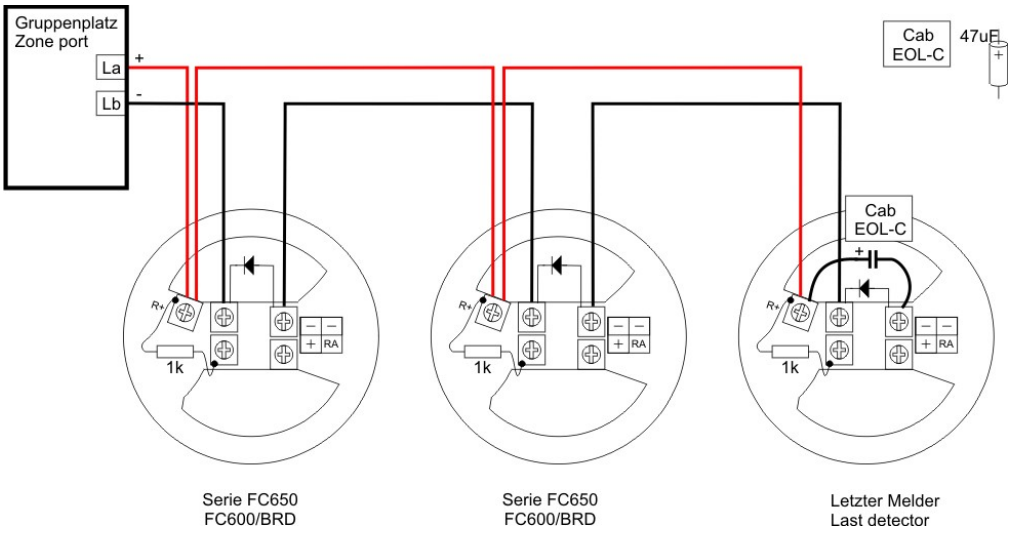
The use of the Detector Base FC600/BRD, which has a built-in diode, prevents the conventional zone from being opened when a detector is removed from its base. As a consequence, a capacitor has to be defined as end-of-line element.

If a Remote Indicator PA58-3 is used, a 1kOhm series resistor has to be inserted between terminal "RA" of the detector base and the Remote Indicator PA58-3. Since detector production code 2011/48, the series resistor can be omitted.

2.4.2.2 Connection



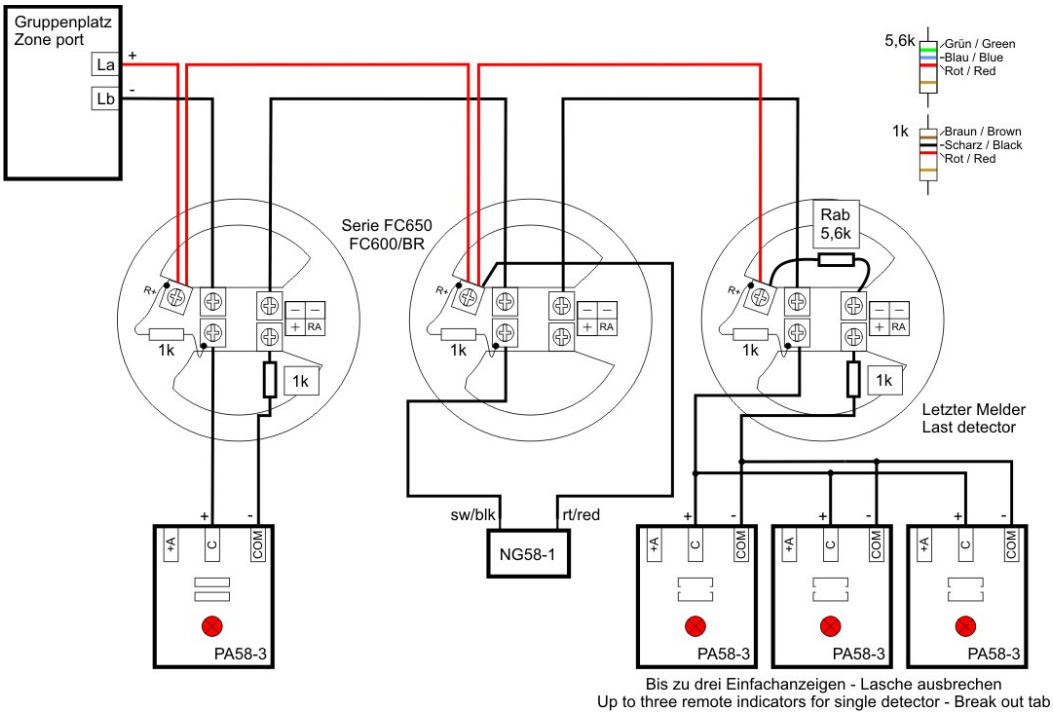
2.4.2.3 Connection with Diode Base FC600/BRD



The detector base with integrated diode may only be used with a capacitive end-of-line element. At the moment only the BC06 and the BC600 can fulfil this requirement. The installation of diode bases with end-of-line resistors is not allowed. In the settings of the control panel, a capacitor must be parameterised as an end-of-line element.

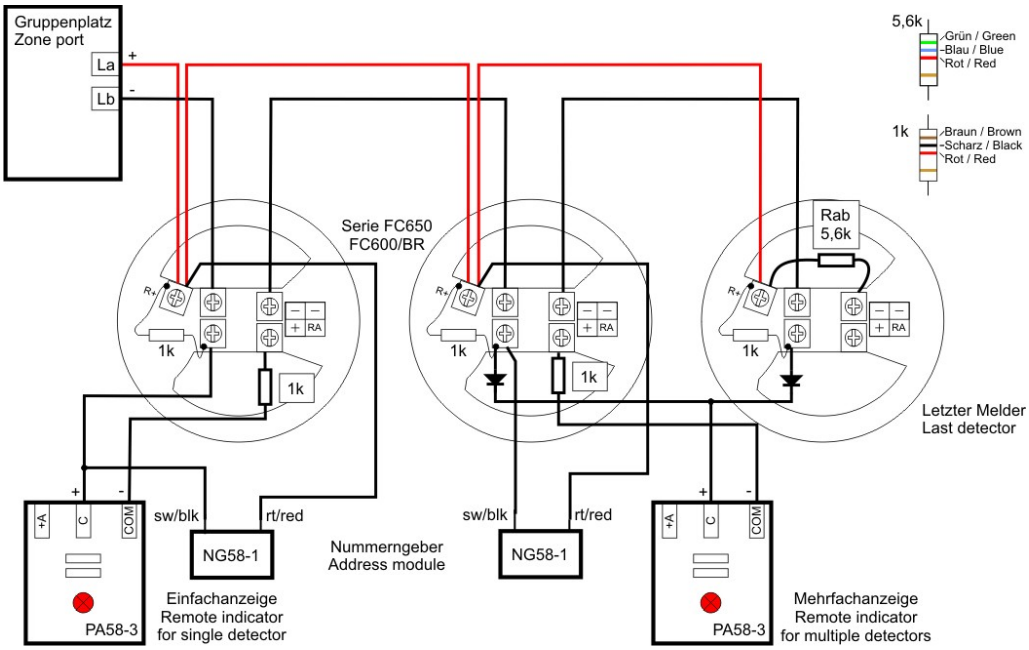
2.4.2.4 Connection of detectors with Remote Indicator PA58-3 and Address Module NG58-1

Up to three remote indicators can be connected to the remote output of the detector. For this application the "TAB" of the remote indicator has to be broken out. When only one remote indicator is connected to the detector, the "TAB" must not be broken out. The alarm resistor between terminals "R+" and "+" is already integrated.



A 1kOhm series resistor has to be inserted between terminal "RA" of the detector base and the Remote Indicator PA58-3. Since detector production code 2011/48, the series resistor can be omitted.

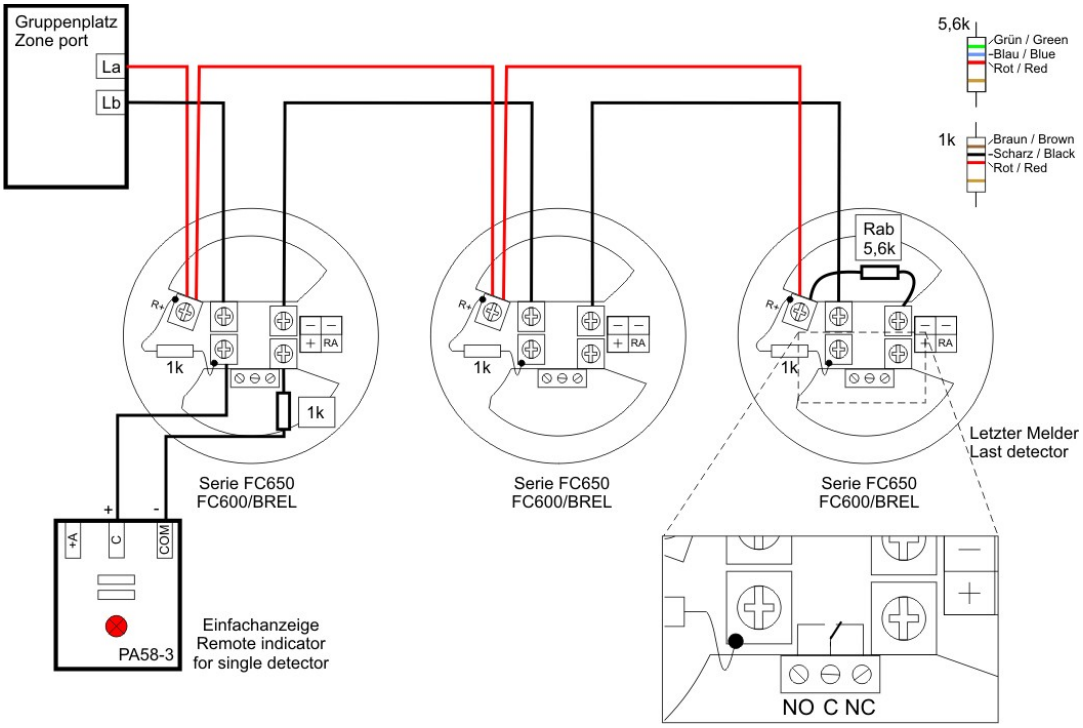
2.4.2.5 Connection of detectors with Remote Indicator PA58-3 and Address Module NG58-1



A 1kOhm series resistor has to be inserted between terminal "RA" of the detector base and the Remote Indicator PA58-3. Since detector production code 2011/48, the series resistor can be omitted.

If an address module is connected to more than one detector, the address module is activated in the alarm condition of **one** of these detectors and indicates the preset address.

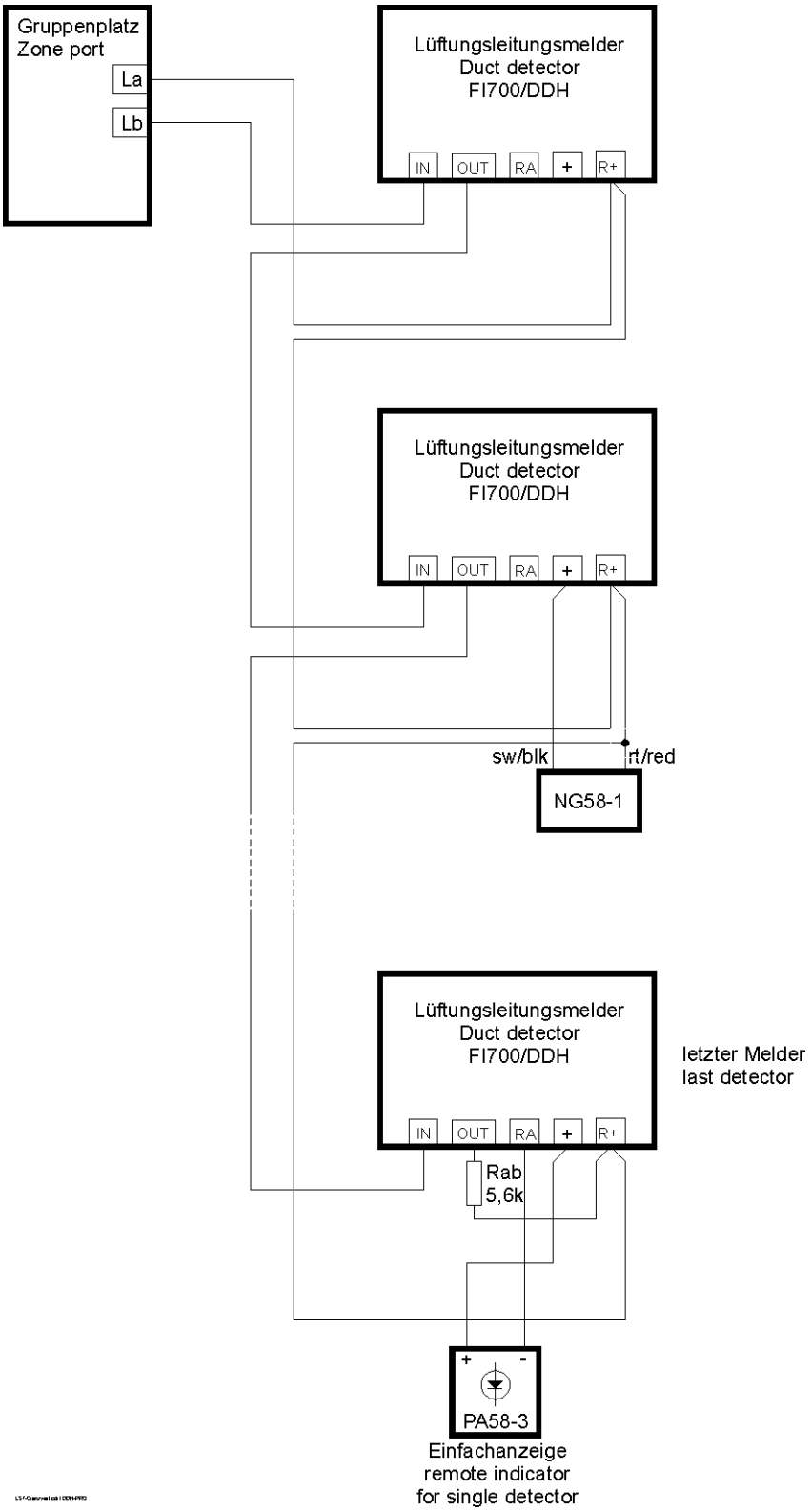
2.4.2.6 Connection of detectors with Relay Base FC600/BREL



The contact rating of the relay is 1A at 30VDC.

A 1kOhm series resistor has to be inserted between terminal "RA" of the detector base and the Remote Indicator PA58-3. Since detector production code 2011/48, the series resistor can be omitted.

2.4.3 Connection of Duct Detectors FI700/DDH / FI750/DDH / FI750/DDH-2



The duct detector FI700/DDH may, in conventional technology, only be used in combination with the detectors FC600/O and FC650/O. The 1kOhm alarm resistor has to be installed between the terminals "R+" and "+". Furthermore, the already installed detector base (which is intended for Series FI700 loop detectors) needs to be changed to an FC600/BR.

This connection has been drawn for the FI700/DDH, but it also applies to the two FI750/DDH versions mentioned.

2.5 Intrinsically safe detection circuits

The

- Safety Barrier ES58-2 (electrically insulated) or the
- Zener Diode Safety Barrier Z978

can be used to create intrinsically safe circuits. The following fire detectors have been especially designed for intrinsically safe detection circuits:

- Series ORBIS I.S.
- Optical Smoke Detector OP-52027
- Optical-Thermal Detector OH-53027
- Thermal Detector HT-51145 (A1R)
- Thermal Detector HT-51157 (A1S)
- Thermal Detector HT-51147 (A2S)
- Thermal Detector HT-51149 (BR)
- Thermal Detector HT-51151 (BS)
- Thermal Detector HT-51153 (CR)
- Thermal Detector HT-51155 (CS)
- Optical Smoke Detector SLR-E-IS
- Optical Smoke Detector SOC-E-IS
- Thermal Detectors 6295 and 6296

Due to the galvanic isolation between the hazardous area and the safe area, an earth fault detection in the hazardous area is not possible when the Safety Barrier ES58-2 is used.

The connection of the Address Module NG58-1 (detector identification) in intrinsically safe detection circuits is not possible!

Allowed number of Optical Smoke Detectors SLR-E-IS	20
Allowed number of Optical Smoke Detectors SOC-E-IS	20
Allowed number of Thermal Max Detectors 6295 / 6296	32
Allowed number of Series ORBIS I.S. detectors	28
max. capacitance IIA (IIB)	880nF (330nF)
max. inductance IIA (IIB)	33.6mH (12.6mH)
max. ratio inductance/resistance IIA (IIB)	440µH/Ohm (165)
Connection of Remote Indicators PA58-1	possible
Detector identification (address module)	not possible
Earth fault detection at the fire detection control panel [1)]	possible
Dimensions ES58-2 (W x H x D)	120 x 160 x 90 mm
Housing for Safety Barrier 29600-239 (W x H x D)	125 x 180 x 130 mm

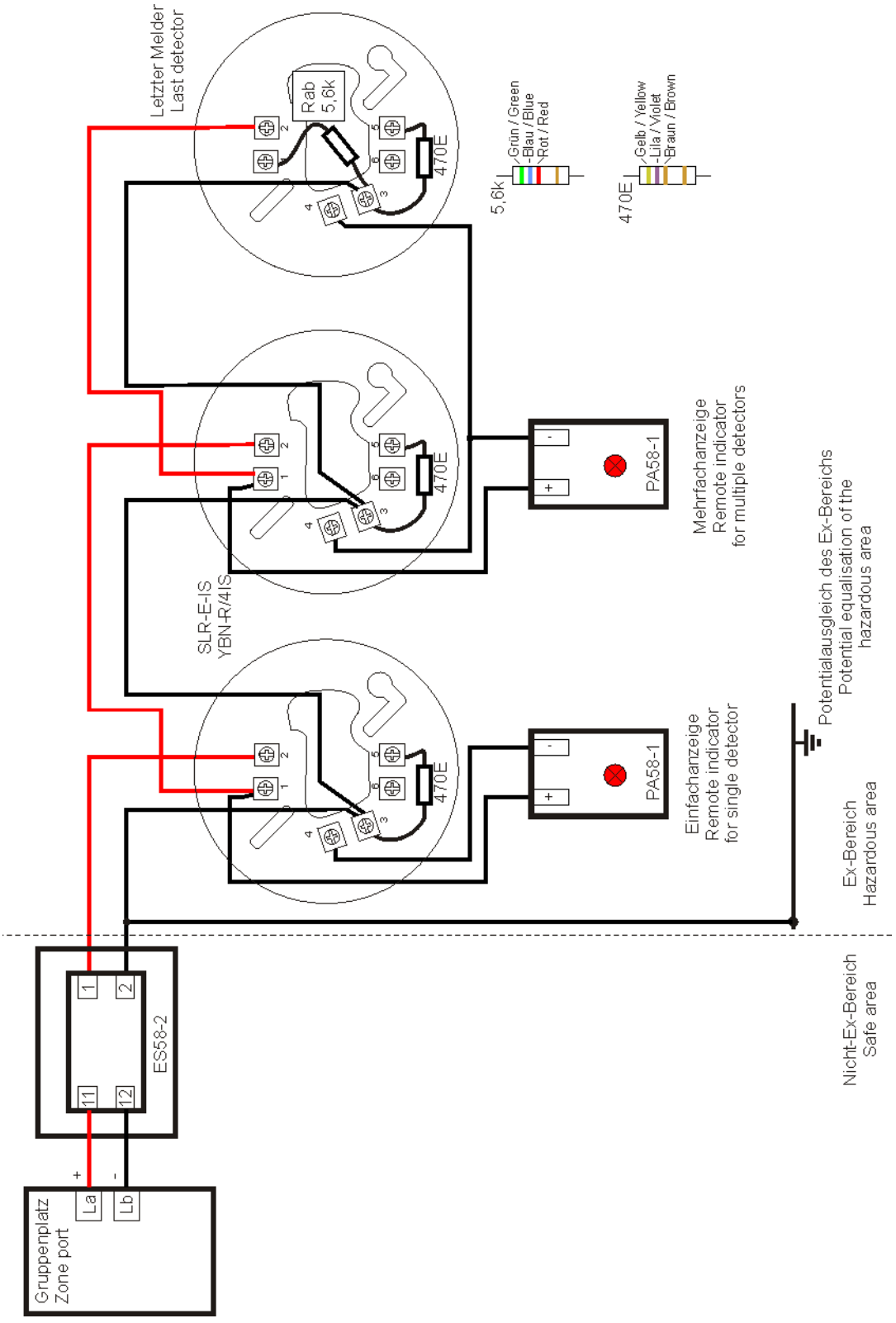
1) However, if the Safety Barrier ES58-2 is used, it is not possible to detect earth faults in the hazardous area.

Detectors in the hazardous area and detectors in safe areas can be combined in one detector zone.

Detectors in the hazardous area must always be connected at the end of a detector line. After such areas you must not connect detectors designed for safe areas.

The safety barrier must be installed outside the hazardous area.

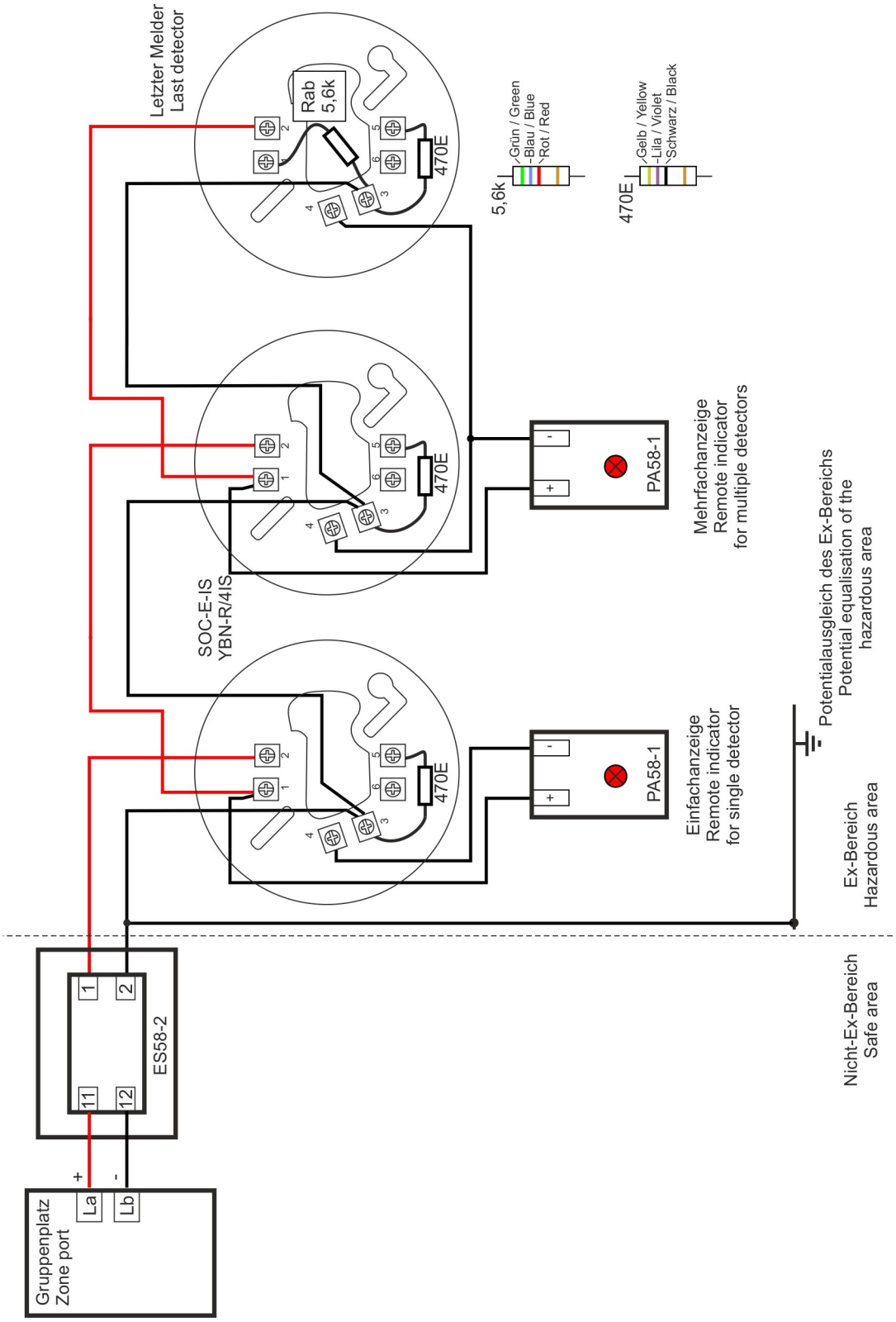
2.5.1 Optical Smoke Detector SLR-E-IS



A short circuit at the output of the ES58-2 (terminals 1 / 2) will be evaluated as alarm.

The cabling in the hazardous area has to comply with the local regulations, guidelines and requirements.

2.5.2 Optical Smoke Detector SOC-E-IS



A short circuit at the output of the ES58-2 (terminals 1 / 2) will be evaluated as alarm.

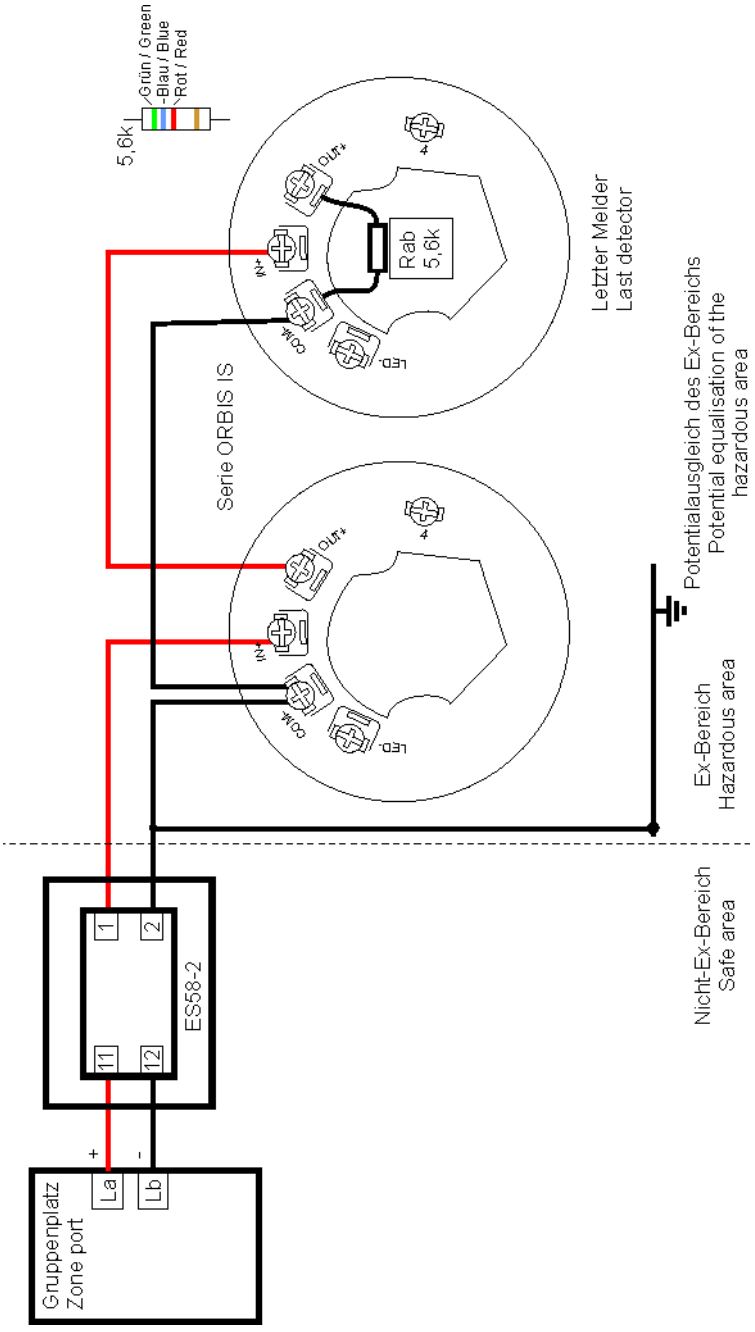
The wiring in the hazardous area has to comply with the local regulations, guidelines and requirements.

2.5.3 Automatic detectors Series ORBIS I.S.

The connection shown below applies to the following detectors:

- Optical Smoke Detector OP-52027
- Optical-Thermal Detector OH-53027
- Thermal Detector HT-51145 (A1R)
- Thermal Detector HT-51157 (A1S)
- Thermal Detector HT-51147 (A2S)
- Thermal Detector HT-51149 (BR)
- Thermal Detector HT-51151 (BS)
- Thermal Detector HT-51153 (CR)
- Thermal Detector HT-51155 (CS)

In the hazardous area, up to 28 detectors may be connected. For the connection of the ORBIS I.S. detectors, the Detector Base MB-50018 is needed.

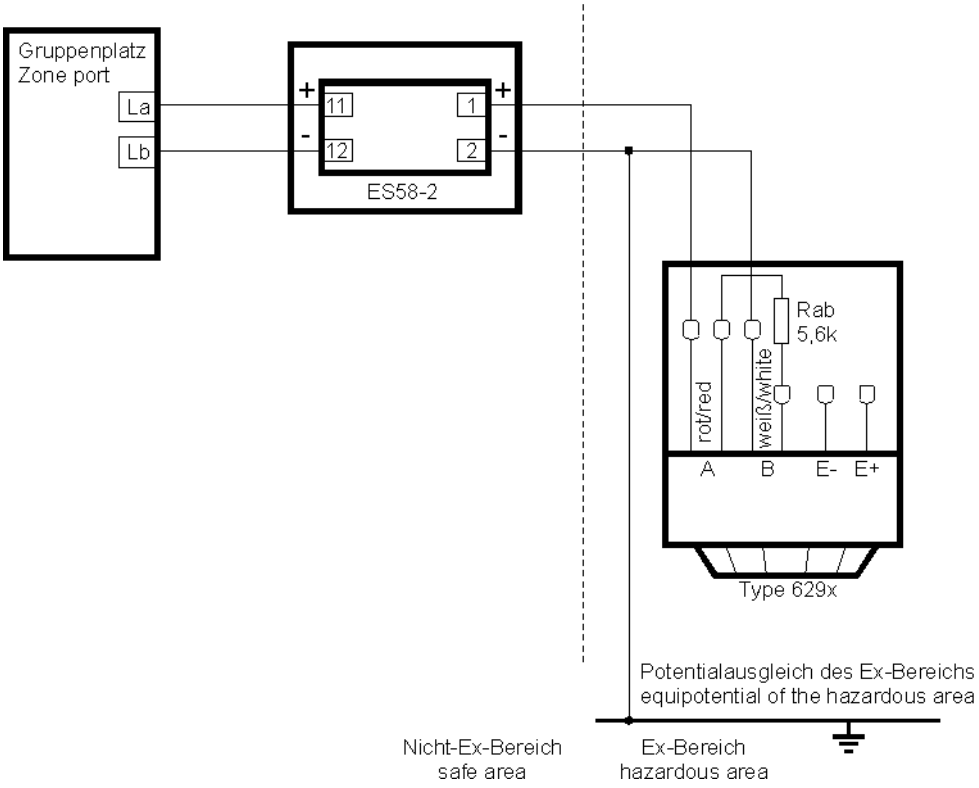


The cabling in the hazardous area has to comply with the local regulations, guidelines and requirements.

2.5.3.1 Conditions of the Orbis detector LED

Function	Description	Status of red LED	Status of yellow LED
StartUP	Confirms the correct polarity of the wiring	Blinks once per second	Does not blink
FasTest	Maintenance function, allows quick function testing of the detectors within 4 seconds and confirms their proper function	Blinks once per second	Does not blink
DirtAlert	Indicates that the limit value for the drift compensation for the quiescent value has been reached.	Does not blink	Blinks once per second in the StartUp mode (no longer blinks if the StartUp mode has ended)
SensAlert	Indicates that the sensor does not work properly.	Does not blink	Blinks every 4 seconds (blinks once per second in the StartUp mode)
Normal operation	After StartUp and FasTest have ended (without blinking LED as standard)	Does not blink	Does not blink
Version with blinking LED	Red detector LED blinks in the normal operation (at the end of FasTest)	Blinks every 4 seconds	Does not blink

2.5.4 Thermal Detectors 6295 and 6296 with Safety Barrier ES58-2



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

2.5.5 Detectors without energy storage – contact detectors

Fire detectors and display devices without energy storage (capacitors, inductors, power sources, etc.) can be used without restriction and without identification in accordance with Section 12 of DIN EN 50020 in intrinsically safe circuits. For this purpose the Zener Diode Safety Barrier Z978 or the Safety Barrier ES58-2 has to be used.

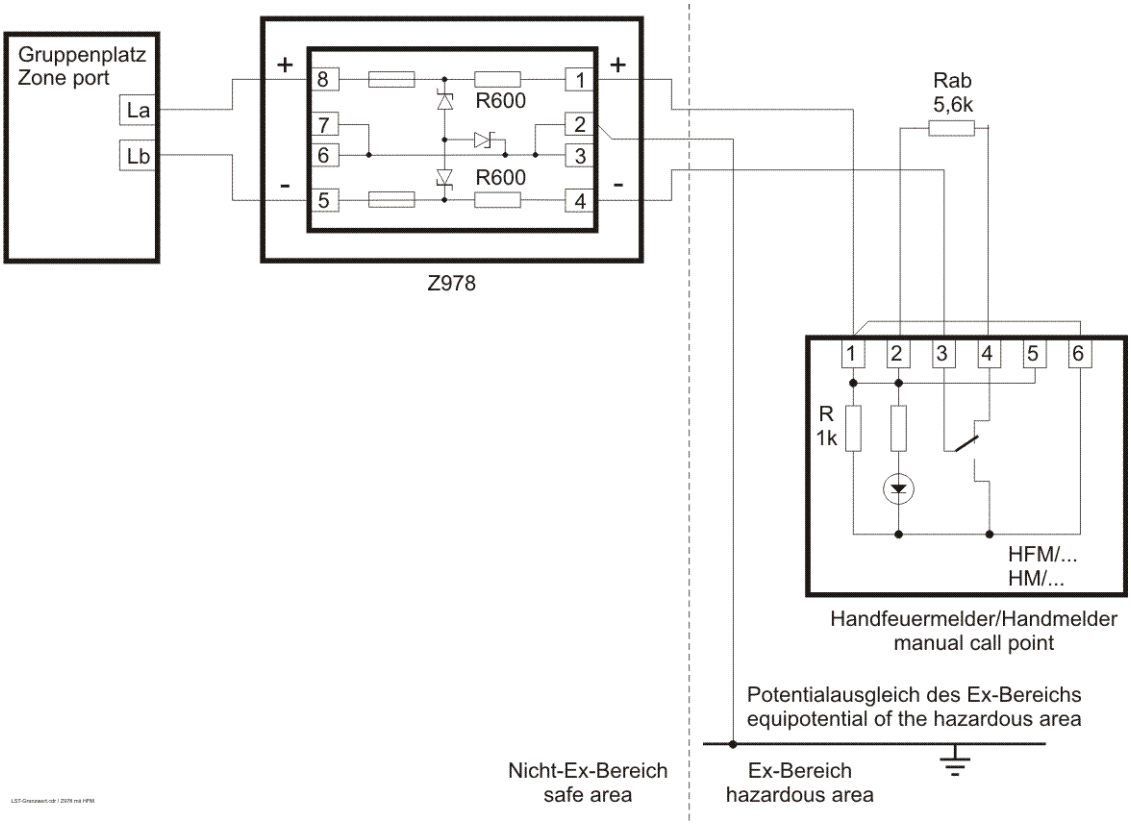
The thermal detectors and manual call points that can be used in hazardous areas are listed below.

Description	Type	max. number per detector zon
Manual Call Point/Red/Conv	HFM/3/11/xx	32
Manual Call Point (others)	HFM/3/12/xx	32
Manual Call Point/Blue/Conv/Hausalarm	HM/5/11/02/xx	32
Manual Call Point/Yellow/Conv/Lösch.	HM/1/11/05/xx	32
Manual Call Point/Blue/Conv/Stop	HM/5/11/18/xx	32
Manual Call Point/Yellow/Conv/Handausl.	HM/1/11/17/xx	32
Manual Call Point (others)	HM/x/11/xx/xx	32
Manual Call Point (others)	HM/x/12/xx	32
Manual Call Point Series HME	HME/FFFF/11/TT/LL/x	32
Manual Call Point Series HME - 1 aux. cor	HME/FFFF/12/TT/LL/x	32
Manual Call Point/Red/Standard	UNI3021C	32
Thermal Max Detector/IP67/Conv	SWM-1KL-57	32
Thermal Max Detector/IP67/Conv	SWM-1KL-80	32
Thermal Max Detector/IP67/Conv	SWM-1KL-100	32
Thermal Max Detector/IP67/Conv	SWM-1KL-140	32

2.5.5.1 Manual call point with Zener Barrier Z978

This drawing gives a fundamental description of the connection. Because of the two 600 Ohm resistors inside the safety barrier, the 1kOhm alarm resistor of the manual call point has to be bypassed by connecting terminal 1 to terminal 6. When using a different manual call point, the connection diagram can be different.

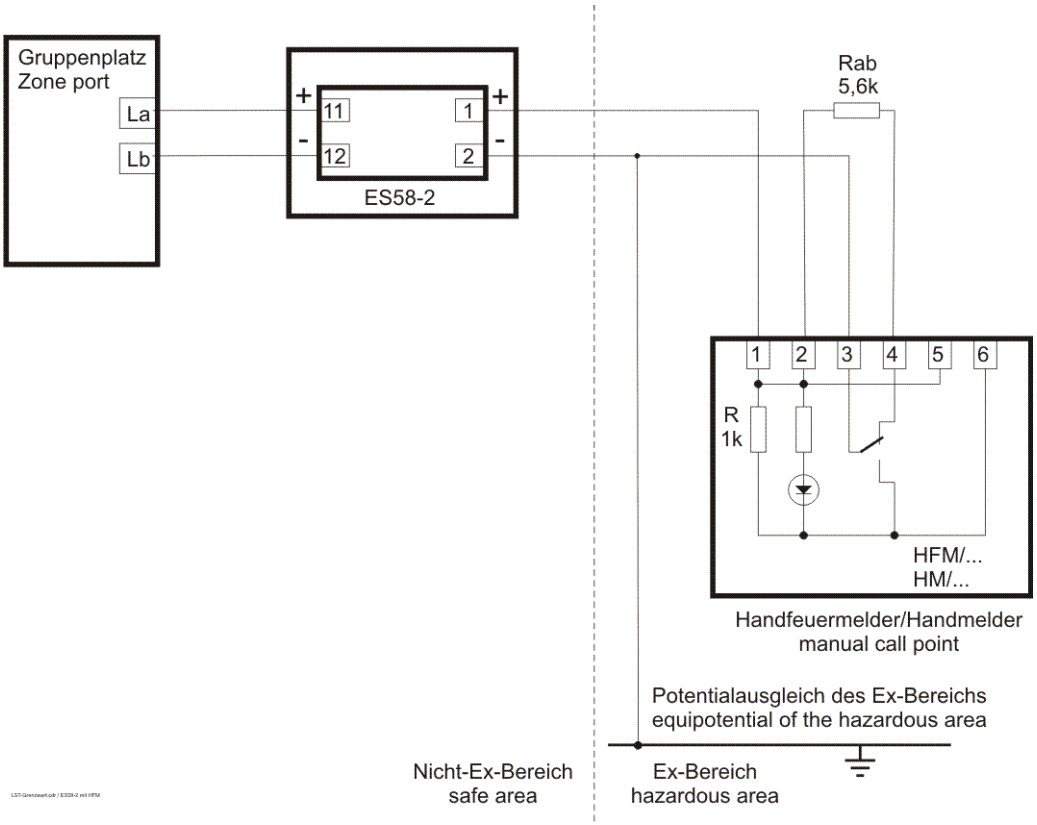
The alarm state will be triggered by a very low resistance between the output terminals of the safety barrier.



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

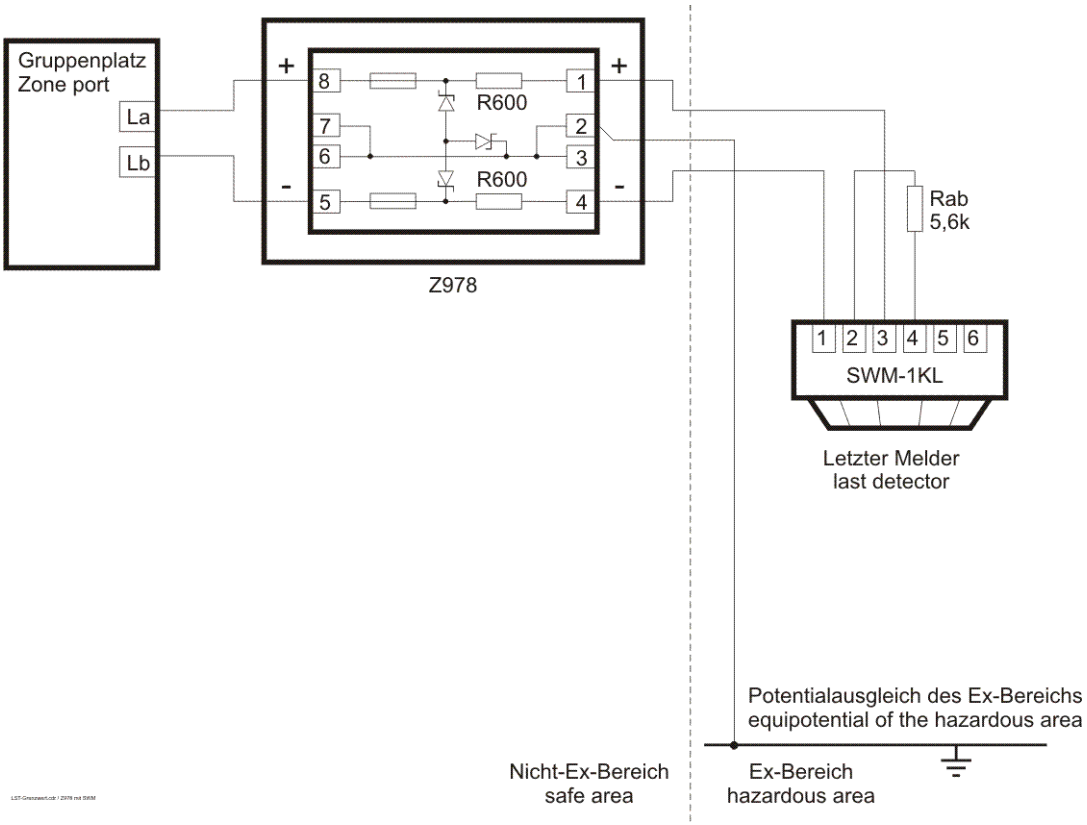
A short circuit at the output of the Z978 (terminals 1 / 4) will be evaluated as alarm.

2.5.5.2 Manual call point with Safety Barrier ES58-2



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

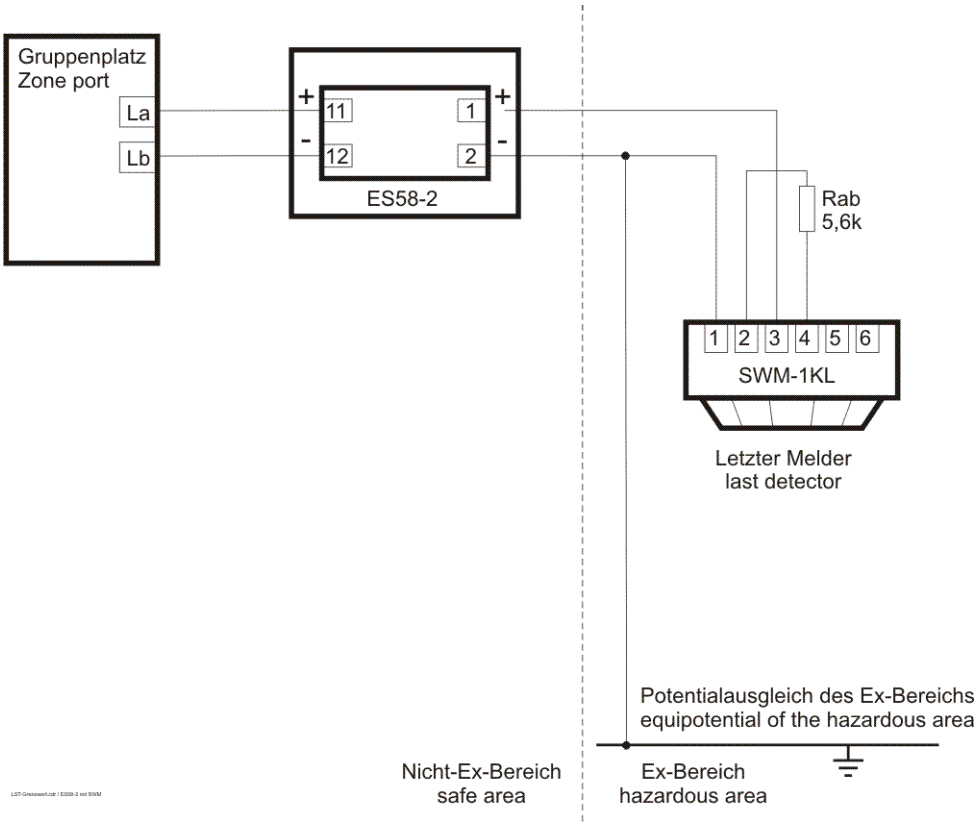
2.5.5.3 Thermal max detector with Zener Barrier Z978



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

A short circuit at the output of the Z978 (terminals 1 / 4) will be evaluated as alarm.

2.5.5.4 Thermal max detector with Safety Barrier ES58-2



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

2.6 Manual call points for hazardous areas

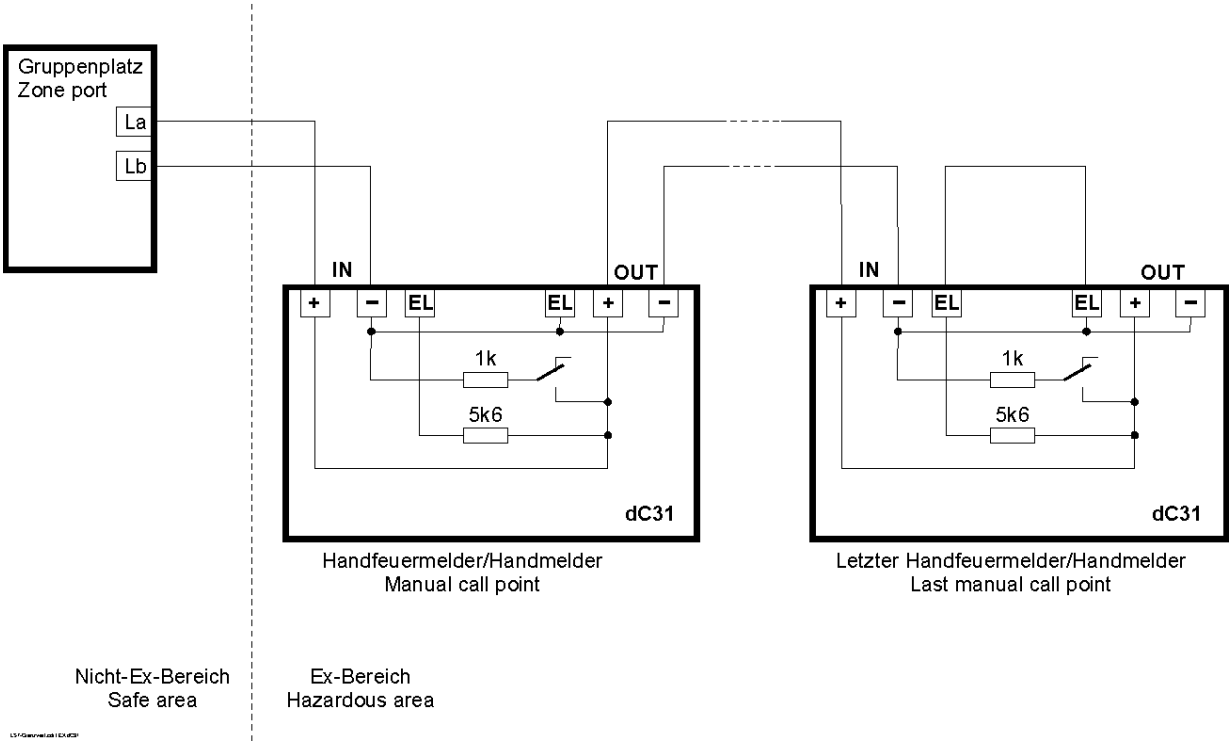
Thanks to the types of protection "increased safety", "encapsulation" and "protection by enclosures", the Manual Call Point Ex dC31 can be used without the Safety Barrier ES58-2 or the Zener Barrier Z978.

Description	Type	max. number per detector zone
Manual Call Point	Ex dC31	20

2.6.1 Manual Call Point Ex dC31

When ordering this manual call point, you have to specify the resistance values (alarm and end-of-line resistor) of the detector, because they are sealed within the detector housing and cannot be changed at a later stage.

The installation in the hazardous area has to comply with the local regulations and with EN 60079 because the energy in the supply line is not limited by a safety barrier.



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

2.7 Flame detectors for hazardous areas

2.7.1 Flame Detectors Series 16000

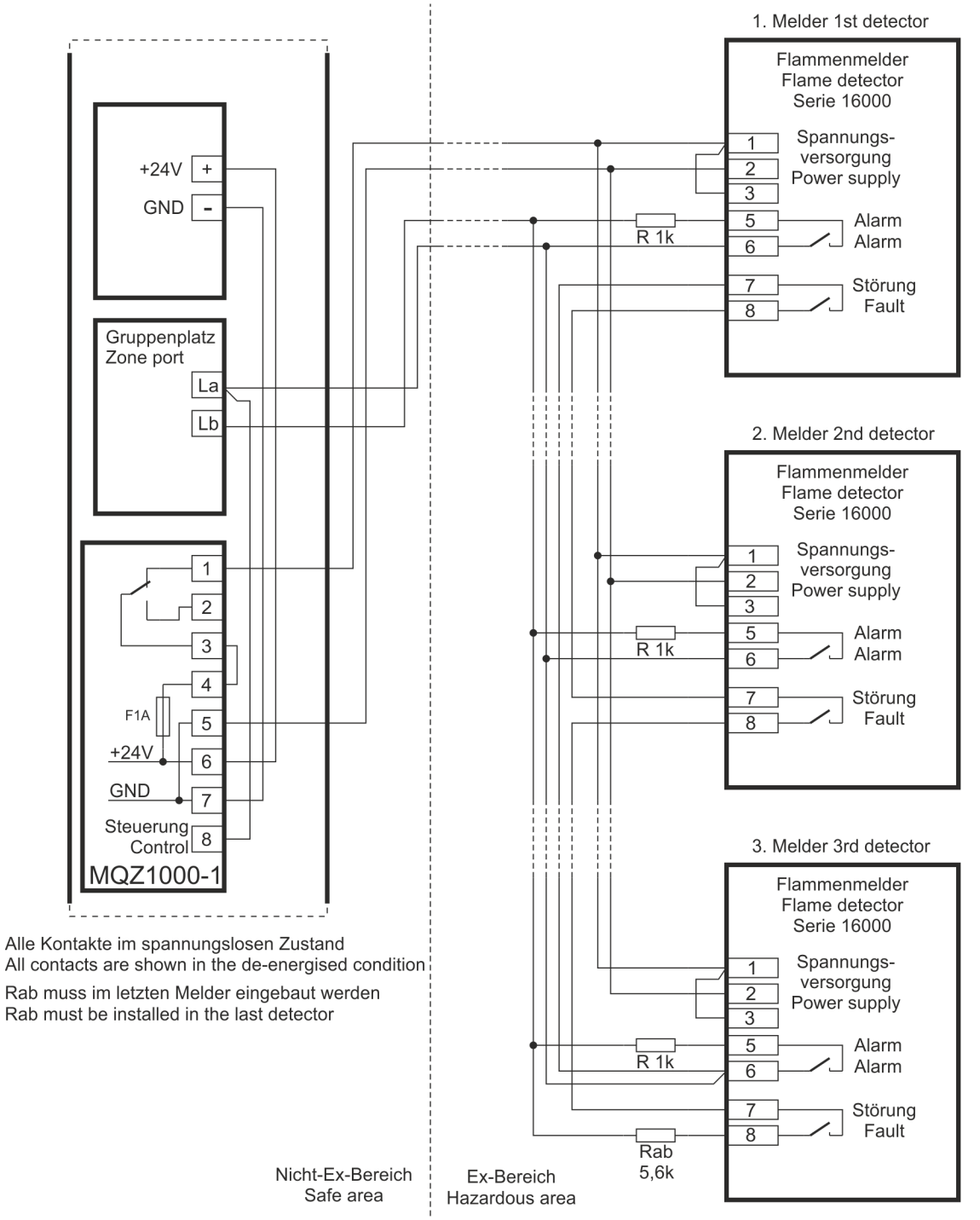
Thanks to the ignition protection class "flameproof enclosure", the following flame detectors can be used without the Safety Barrier ES58-2 or Zener Barrier Z978.

Type	EN 54-10 Class 1
16511	IR2
16519	IR3
16521	UV/IR2

SW6	SW7	Response time
0	0	8s
1	0	4s
0	1	2s
1	1	1s

By means of the DIP switches, the detector can be adjusted to the various operating conditions. The switches 6 and 7 allow you to change the response time.

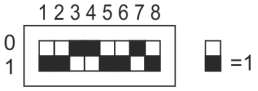
2.7.1.1 Connection with MQZ1000-1



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

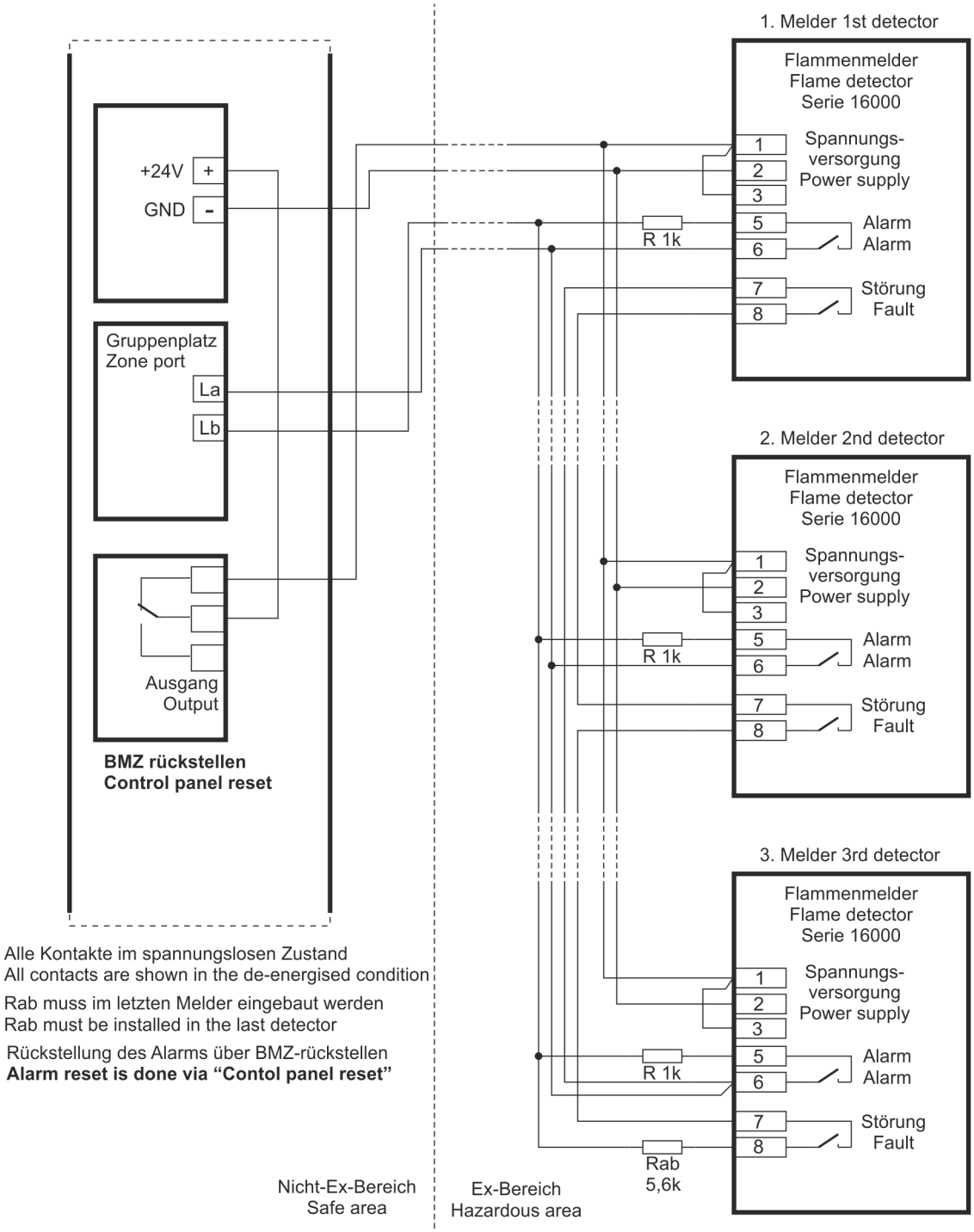
Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

Einstellung des DIP Schalters in jedem Melder
DIP switch setting in each detector



The installation in the hazardous area has to comply with the local regulations and with EN 60079 because the energy in the supply line is not limited by a safety barrier.

2.7.1.2 Connection - resetting by means of relay contact

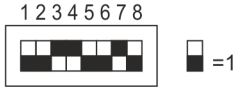


Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

Rückstellung des Alarms über BMZ-rückstellen
Alarm reset is done via "Contol panel reset"

Einstellung des DIP Schalters in jedem Melder
DIP switch setting in each detector



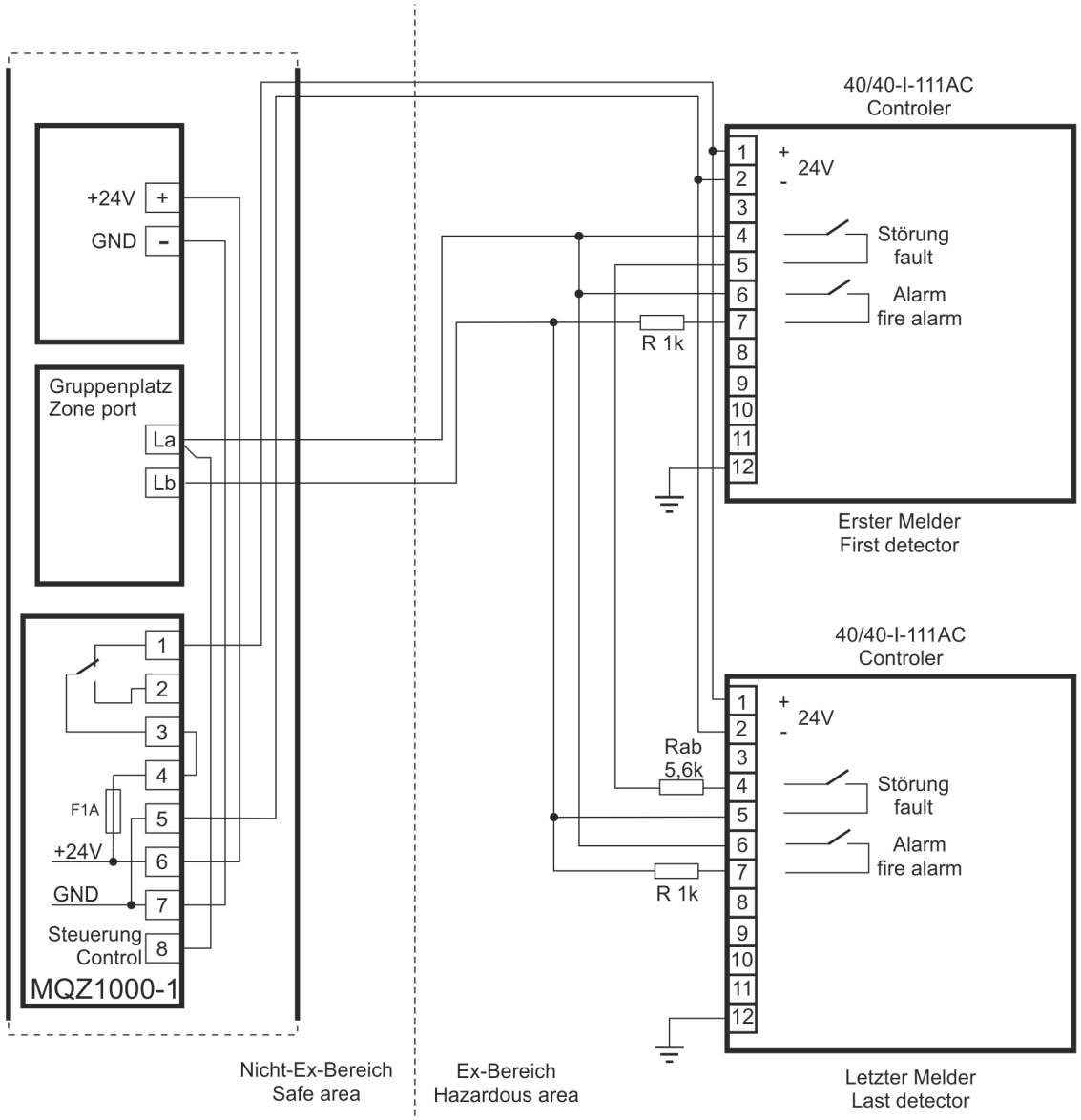
The installation in the hazardous area has to comply with EN 60079 because the energy in the line is not limited by barriers.

2.7.2 Flame Detector 40/40-I-111AC

Thanks to the ignition protection class "flameproof enclosure", the following flame detectors can be used without a safety barrier or zener barrier.

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

2.7.2.1 Connection with MQZ1000-1

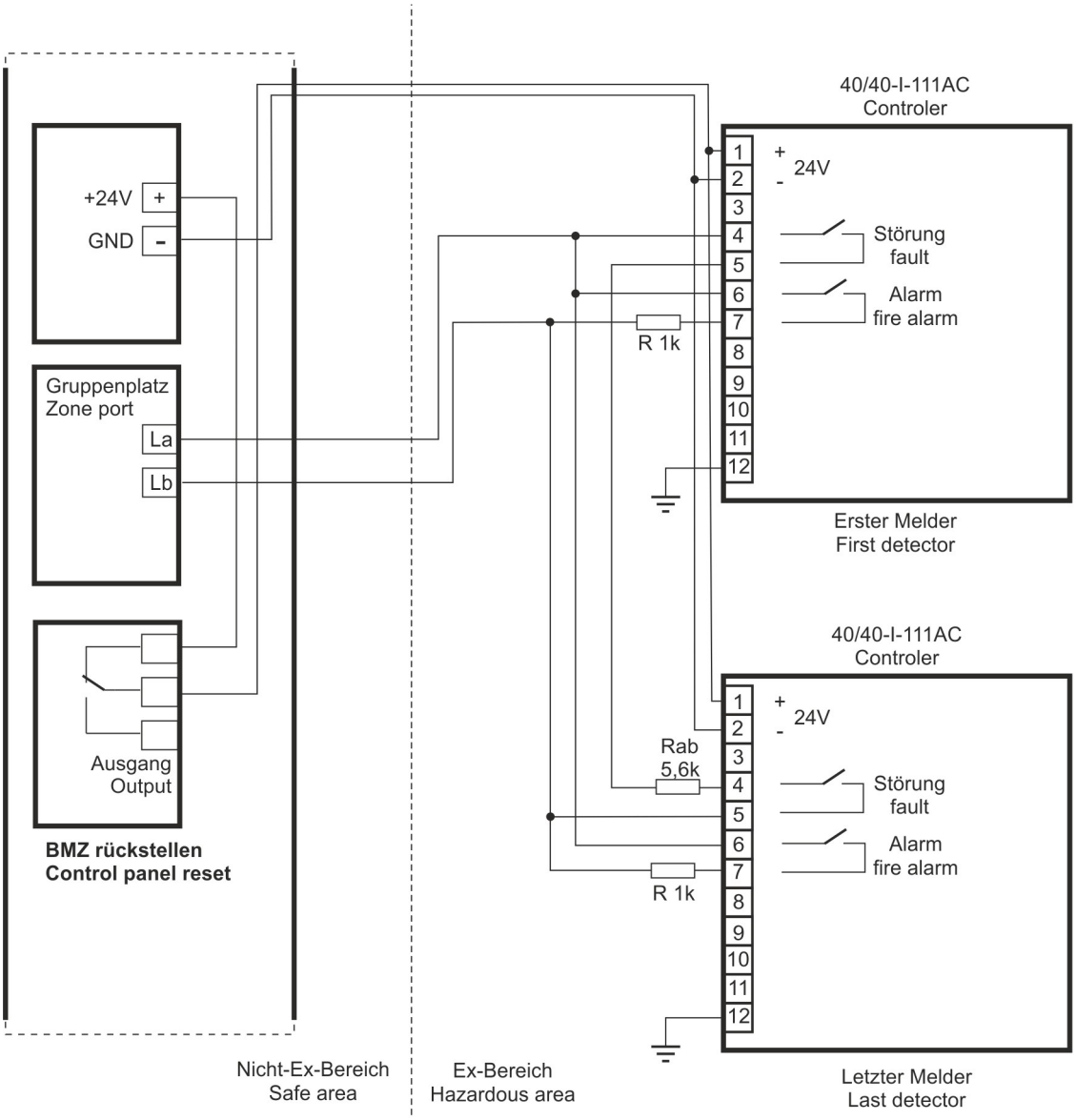


Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

The installation in the hazardous area has to comply with EN 60079 because the energy in the line is not limited by barriers.

2.7.2.2 Connection - resetting by means of relay contact



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

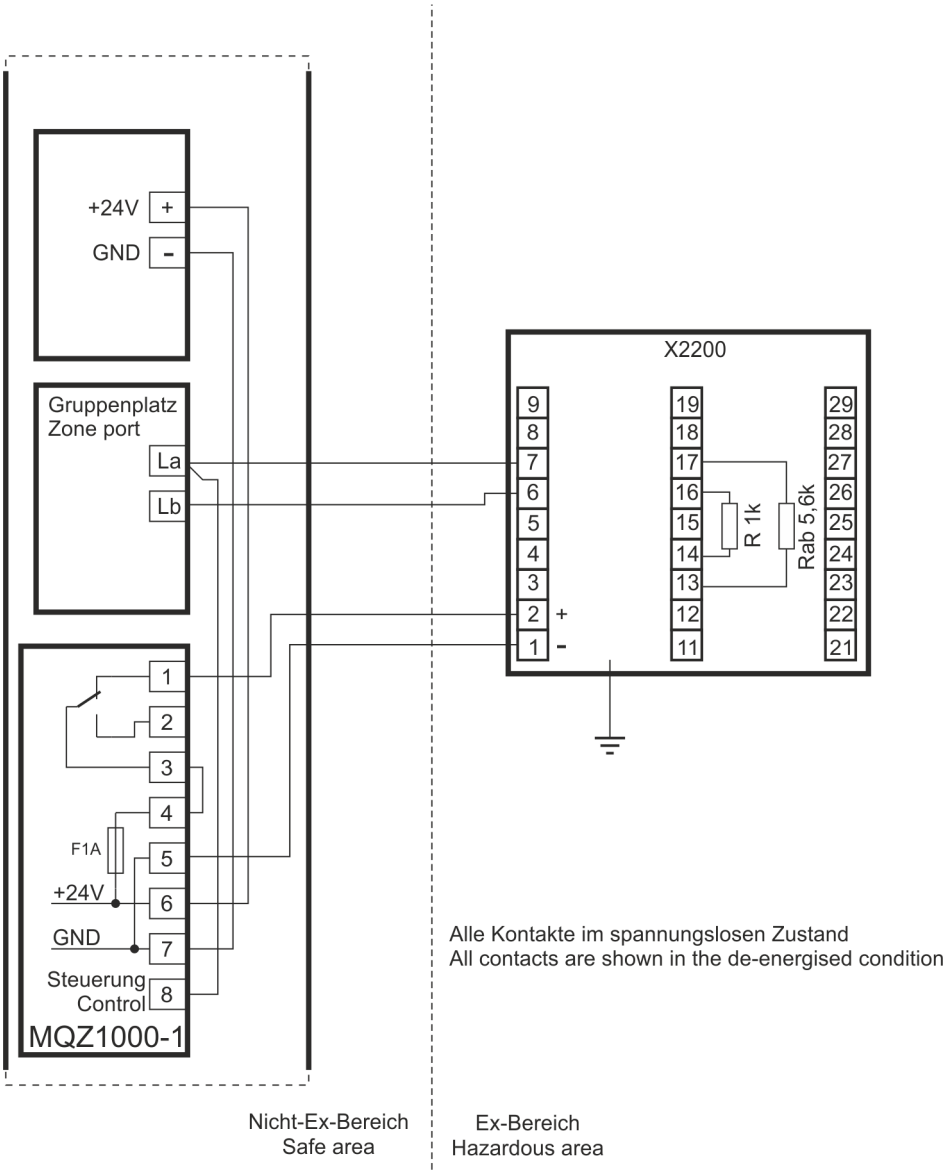
Rückstellung des Alarms über BMZ-rückstellen
Alarm reset is done via "Contol panel reset"

Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

The installation in the hazardous area has to comply with EN 60079 because the energy in the line is not limited by barriers.

2.7.3 Flame Detector Series X2200

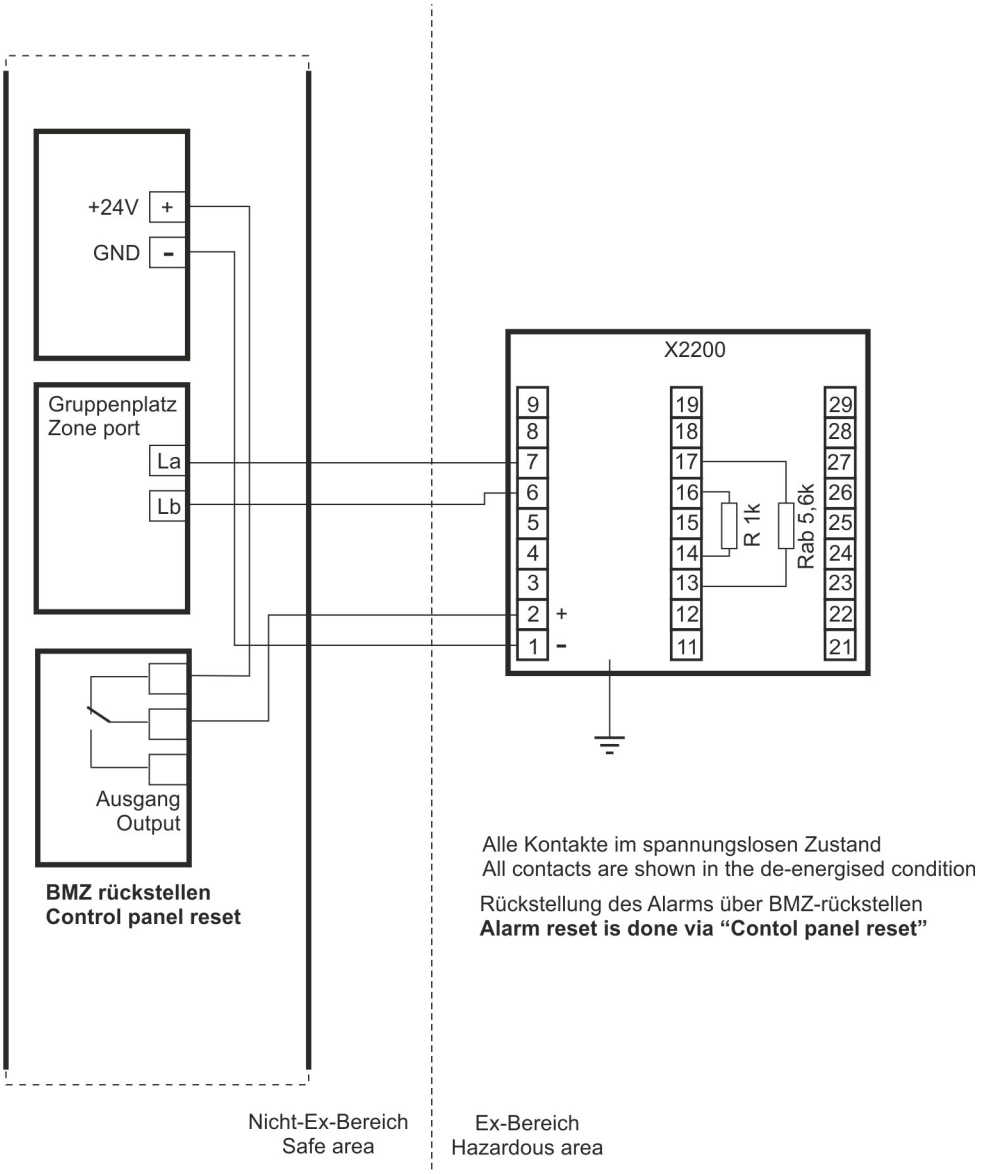
2.7.3.1 Connection with MQZ1000-1



The installation in the hazardous area has to comply with EN 60079 because the energy in the line is not limited by barriers.

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

2.7.3.2 Connection - resetting by means of relay contact

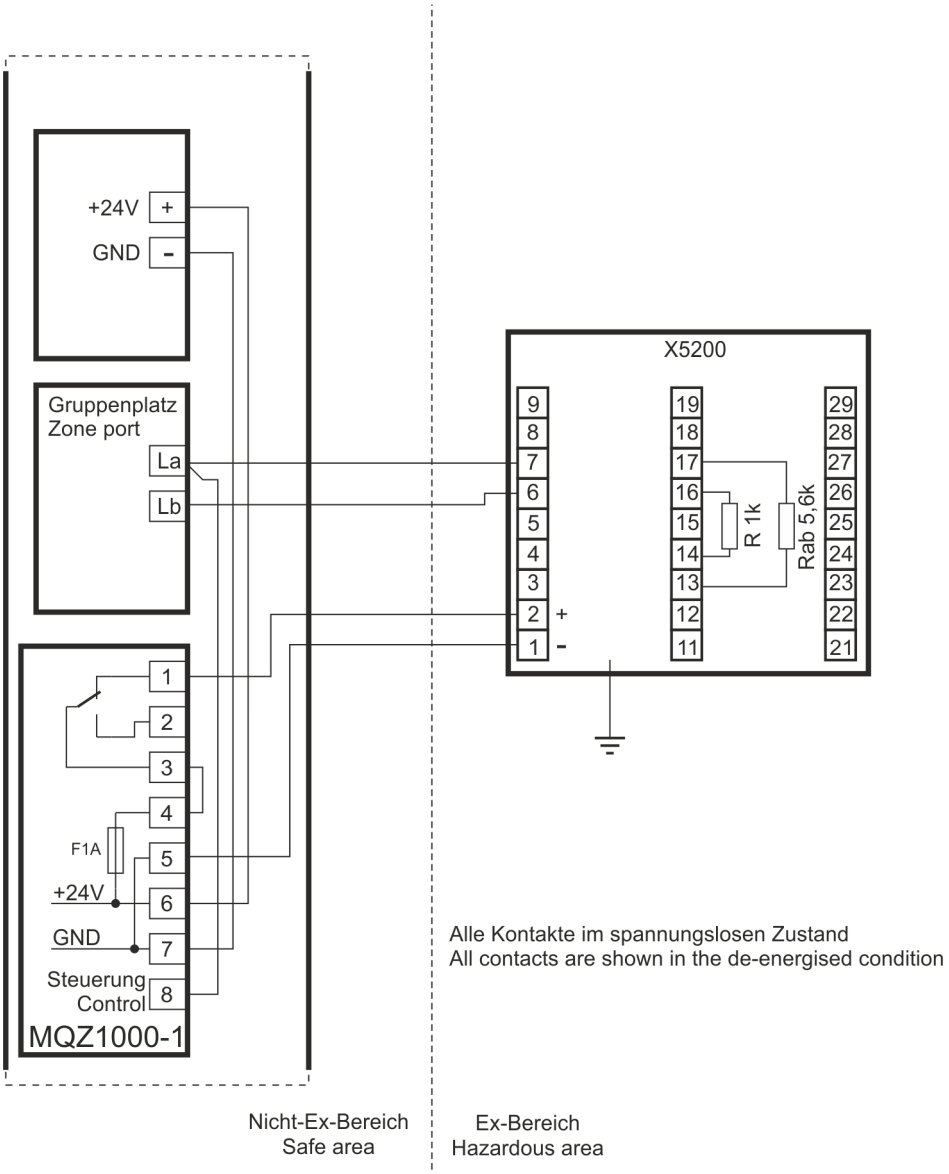


The installation in the hazardous area has to comply with EN 60079 because the energy in the line is not limited by barriers.

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

2.7.4 Flame Detector Series X5200

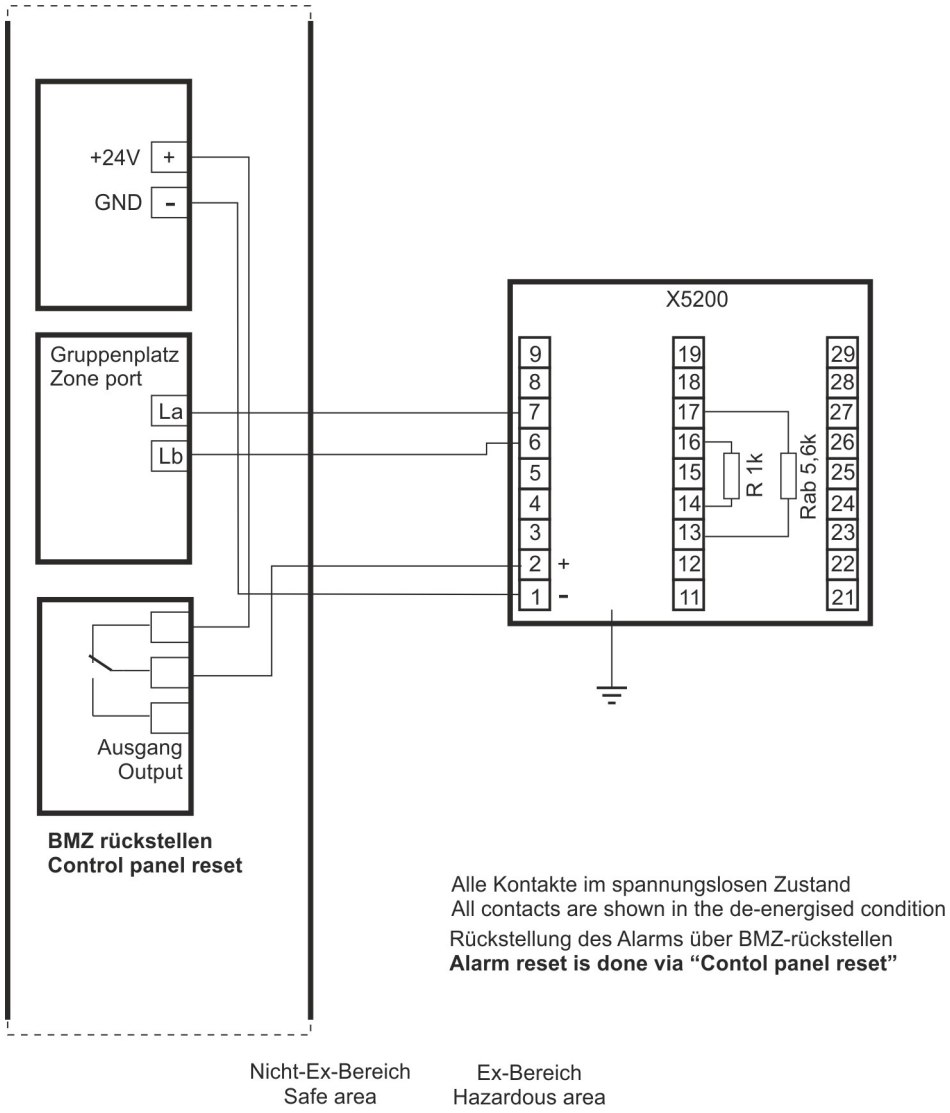
2.7.4.1 Connection with MQZ1000-1



The installation in the hazardous area has to comply with EN 60079 because the energy in the line is not limited by barriers.

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

2.7.4.2 Connection - resetting by means of relay contact



The installation in the hazardous area has to comply with EN 60079 because the energy in the line is not limited by barriers.

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

2.7.5 Flame Detector Series YMX5000

Thanks to the ignition protection class "flameproof enclosure", the following flame detectors can be used without a safety barrier or zener barrier.

2.7.5.1 Notes

Only one detector may be connected to one detector zone. Furthermore, the end-of-line resistor of the conventional alarm line must have 3.3kOhm. For further information in this regard, please refer to the manufacturer's documentation.

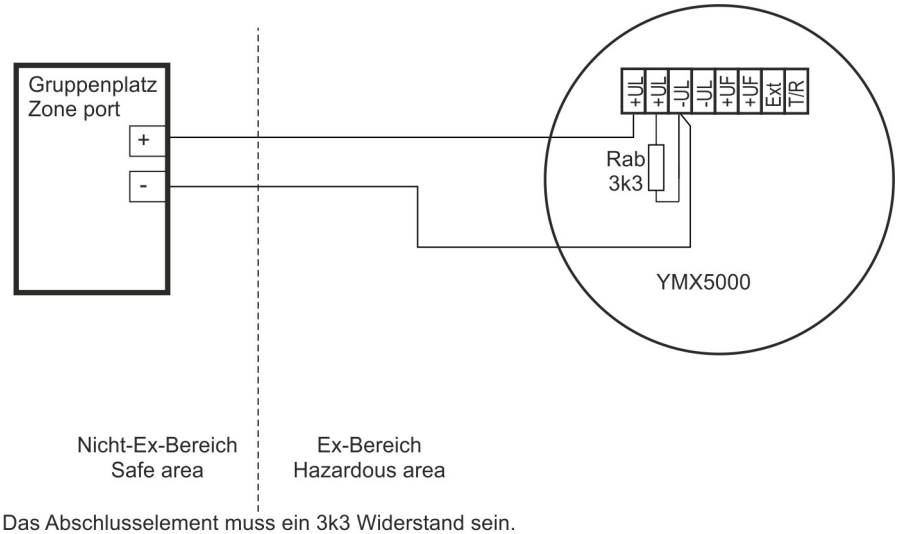
The detector is powered by the detector zone and signals its condition through the 2 lines:

- Alarm line (latching, can be reset by de-energising the detector zone)
- Fault line (optional, separate detector zone required)

If a fault line is used, the following is to be taken into account:

- Upon disablement of the alarm line, the fault line will be activated.
- In the case of alarm verification of the alarm line, the fault line will be activated while the alarm line is disabled.
- A 5.6kOhm end-of-line resistor must be used for the fault line.

2.7.5.2 Connection



Das Abschlusselement muss ein 3k3 Widerstand sein.
Die Brandmelderzentrale muss ebenfalls auf diesen Wert gestellt werden.

The end-of-line element must be a 3k3 resistor.
The fire alarm control panel must also be set to this value.

2.8 Heat detectors for hazardous areas

2.8.1 WMX5000 FS

Thanks to the ignition protection class "flameproof enclosure", this detector can be used without a safety barrier or zener barrier.

Only one detector may be connected to one detector zone. Furthermore, the end-of-line resistor of the conventional alarm line must have 3.3kOhm. The WMX5000 is a high temperature detector whose alarm threshold can be selected (with DIP switches in the base – for further information in this regard, please refer to the manufacturer's documentation).

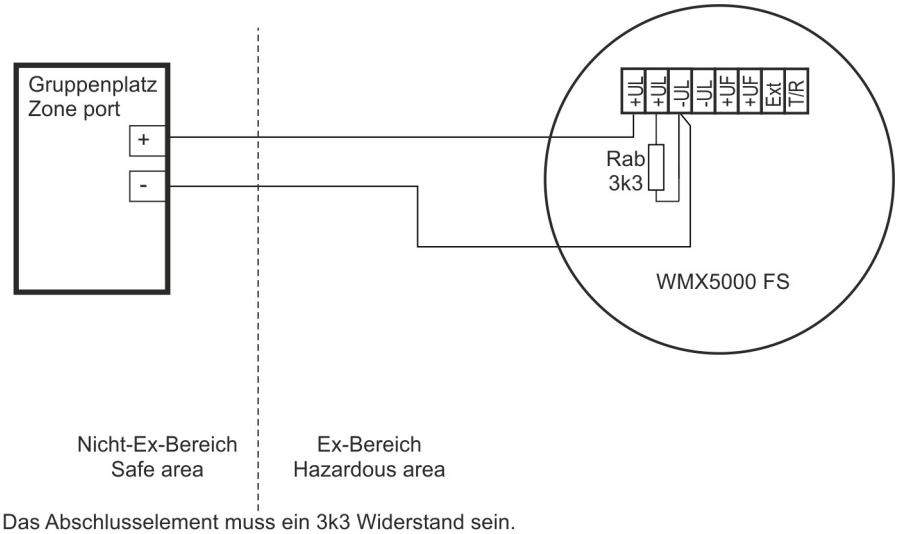
The detector is powered by the detector zone and signals its condition through the 2 lines:

- Alarm line (latching, can be reset by de-energising the detector zone)
- Fault line (optional, separate detector zone required)

If a fault line is used, the following is to be taken into account:

- Upon disablement of the alarm line, the fault line will be activated.
- In the case of alarm verification of the alarm line, the fault line will be activated while the alarm line is disabled.
- A 5.6kOhm end-of-line resistor must be used for the fault line.

With the self-resetting property, this detector has a short alarm duration.
Therefore this connection is only permissible if the alarm of the detector is stored.



Das Abschlusselement muss ein 3k3 Widerstand sein.
Die Brandmelderzentrale muss ebenfalls auf diesen Wert gestellt werden.

The end-of-line element must be a 3k3 resistor.
The fire alarm control panel must also be set to this value.

2.9 Fire gas detector for hazardous areas

2.9.1 GMX1001CO Ex Dust

Thanks to the ignition protection class "flameproof enclosure", this detector can be used without a safety barrier or zener barrier.

Only one detector may be connected to one detector zone. Furthermore, the end-of-line resistor of the conventional alarm line must have 3.3kOhm.

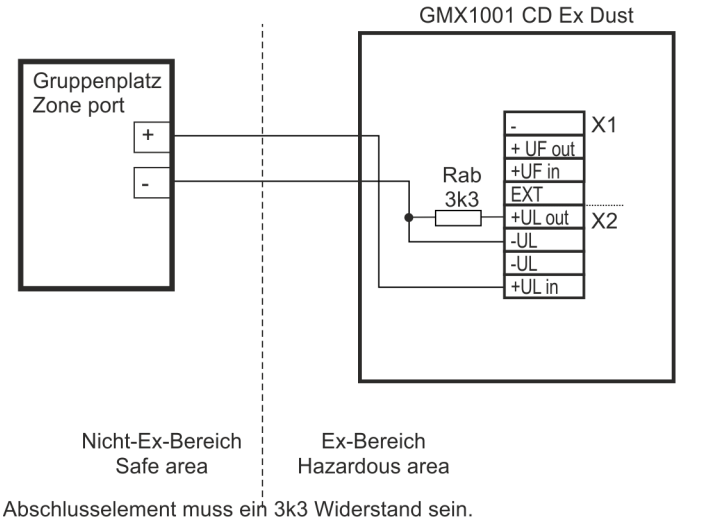
The detector is powered by the detector zone and signals its condition through the 2 lines:

- Alarm line (latching, can be reset by de-energising the detector zone)
- Fault line (optional, separate detector zone required)

If a fault line is used, the following is to be taken into account:

- Upon disablement of the alarm line, the fault line will be activated.
- In the case of alarm verification of the alarm line, the fault line will be activated while the alarm line is disabled.
- A 5.6kOhm end-of-line resistor must be used for the fault line.

With the self-resetting property, this detector has a short alarm duration.
Therefore this connection is only permissible if the alarm of the detector is stored.



Abschlusselement muss ein 3k3 Widerstand sein.
Die Brandmelderzentrale muss ebenfalls auf diesen Wert gestellt werden.

The end-of-line element must be a 3k3 resistor.
The fire alarm control panel must also be set to this value.

2.10 Connection of Series FI700/RF / FI720/RF / FI750/RF wireless detectors

In order to be able to use wireless detectors, you first have to install an RF interface. Also see the other documents of the chosen RF system.

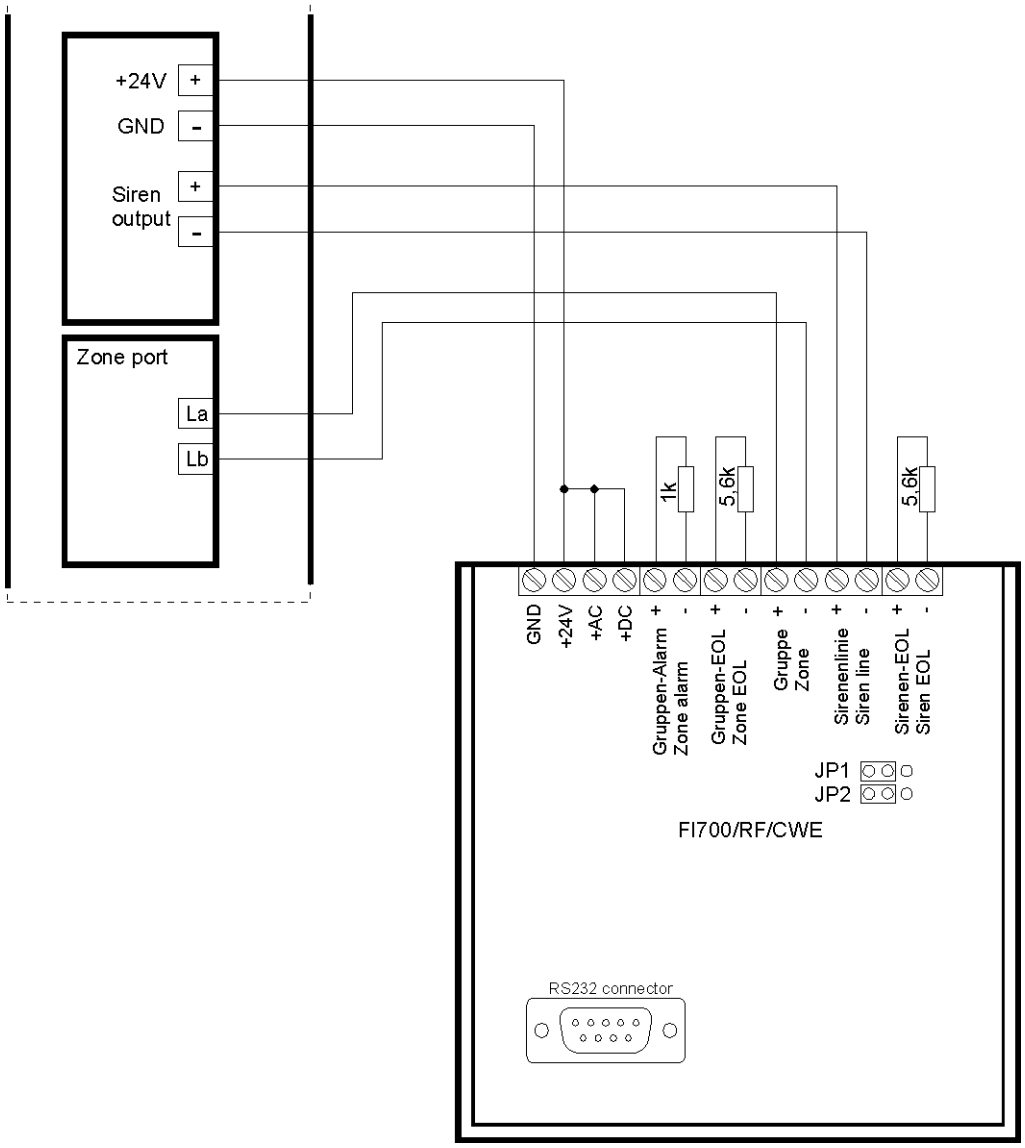
2.10.1 RF Interface FI700/RF/CWE / FI720/RF/CWE

2.10.1.1 Notes

- Please consult the manual of the RF interface to obtain relevant information about how to link a wireless detector to the interface.
- Please note that up to 32 detectors are supported per RF interface.

2.10.1.2 Connection

The following connection applies to the RF Interfaces FI700/RF/CWE and FI720/RF/CWE.



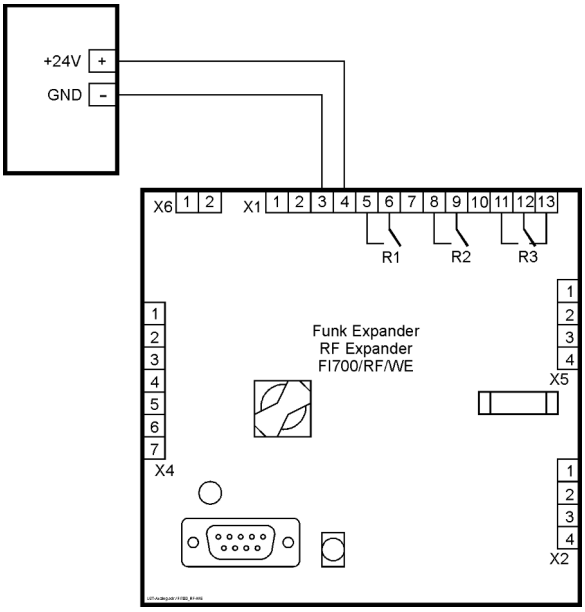
Make sure that the polarity of the connection to the zone port is correct. If the polarity of this connection is not correct, the fire alarm cannot be reset. The fire alarm is reset by removing the voltage from the CWE terminals 'Zone'.

If a voltage that is higher than 9V is present on the CWE terminals 'Siren line' and if the polarity is correct, the parameterised wireless alarming devices will be activated. If a voltage that is lower than 9V is present on the terminals in question, the alarming devices will be inactive.

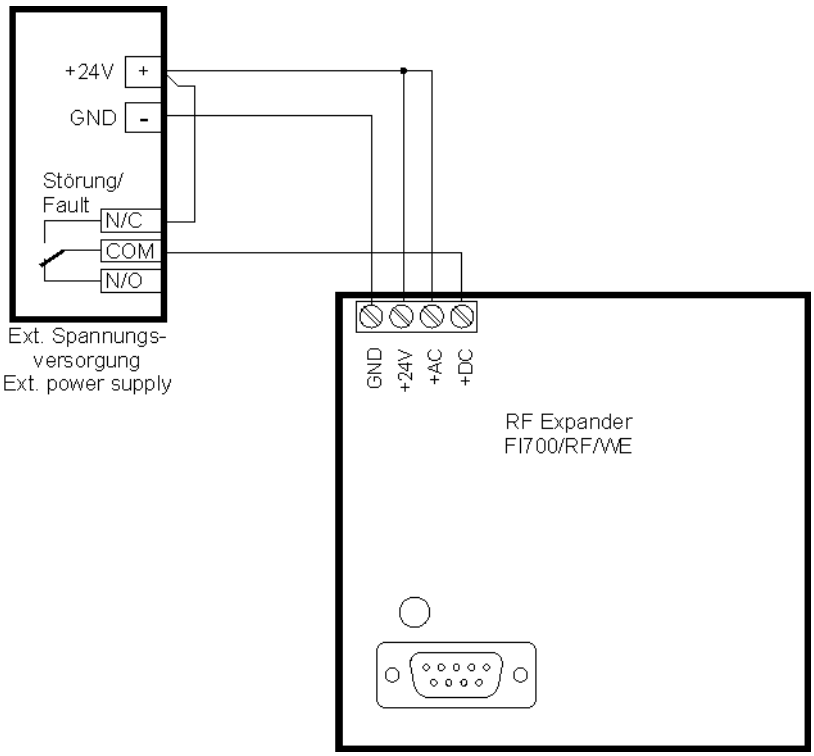
2.10.2 RF Expander FI700/RF/WE / FI720/RF/WE

If you want to extend the range of the RF system, you can use the RF Expander FI700/RF/WE or FI720/RF/WE.

2.10.2.1 Connection FI700/RF/WE – old version



2.10.2.2 Connection FI700/RF/WE – new version – and FI720/RF/WE



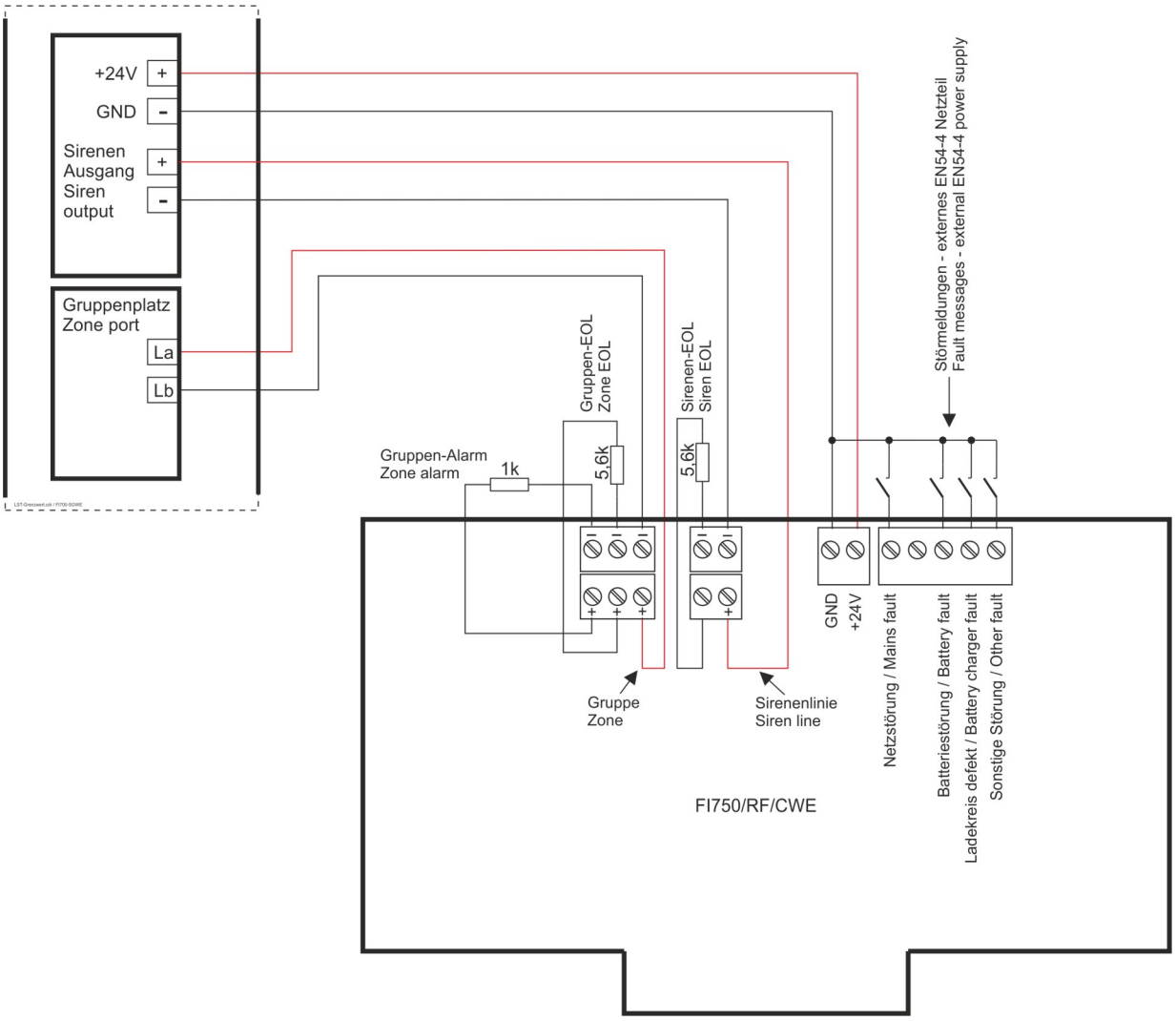
If the expander is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

2.10.3 RF Interface FI750/RF/CWE

2.10.3.1 Notes

- For information on how to link the wireless detectors to the RF interface, please refer to the documentation of the RF interface.
- Please note that a maximum of 32 detectors are supported per RF interface.

2.10.3.2 Connection

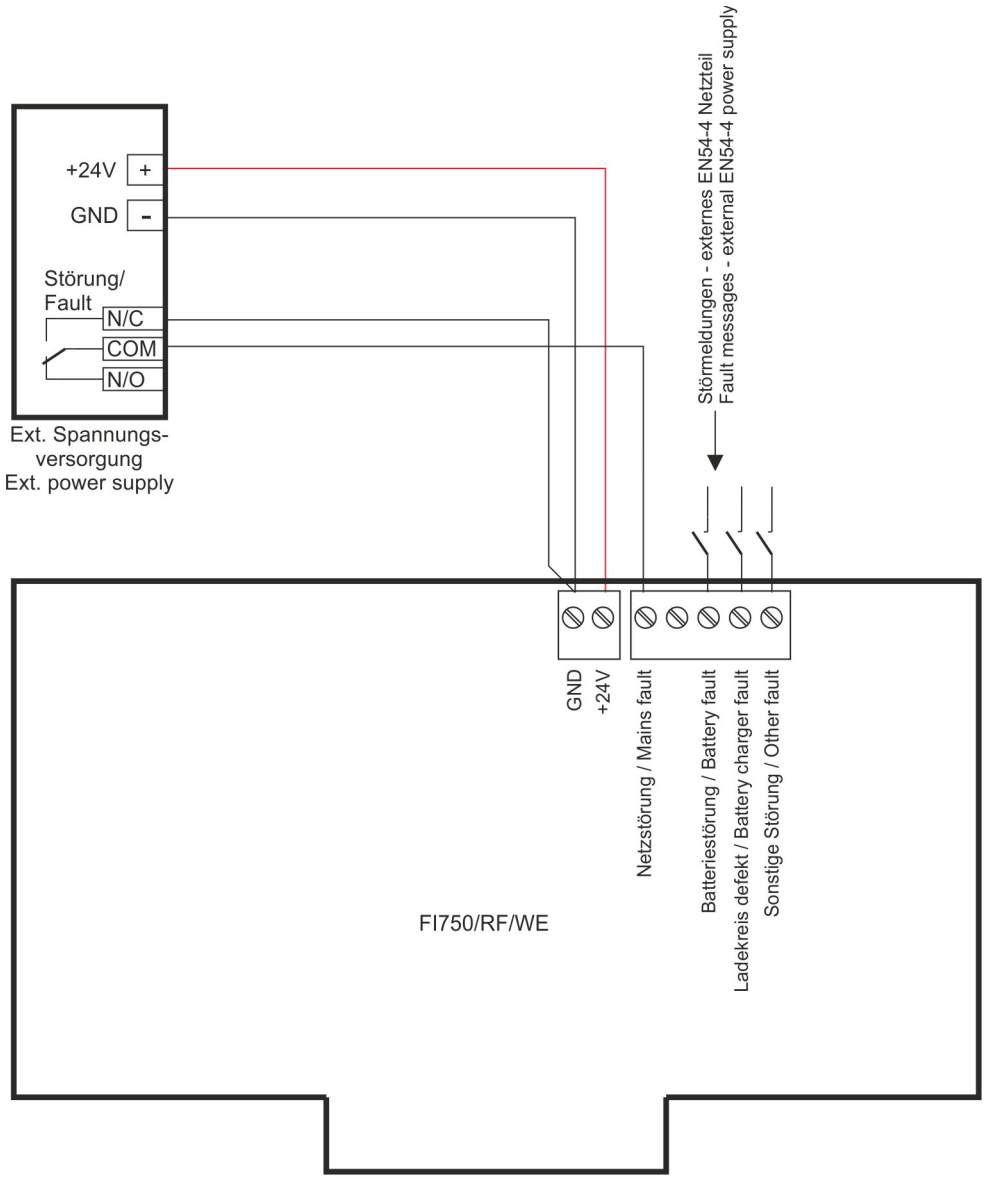


The "Fault messages – external power supply" can be set to "Open," "Low" or "Disabled" by means of the RF interface configuration software. These fault messages only need to be used if an external power unit is used.

2.10.4 RF Expander FI750/RF/WE

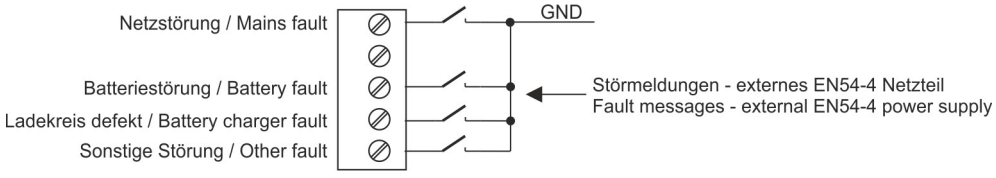
If you want to extend the range of the RF system FI750/RF, you can use the RF Expander FI750/RF/WE.

2.10.4.1 Connection



In this example, the common fault contact of the power unit has been routed to the "Mains fault" input of the FI750/RF/WE. With this connection, the handling of the input for the "Mains fault" has to be set to "Open".

If the power unit fault messages are to be evaluated more finely, you can use the inputs that are available on the FI750/RF/WE.



2.11 Connection of special detectors

2.11.1 Flame Detector Series 16000

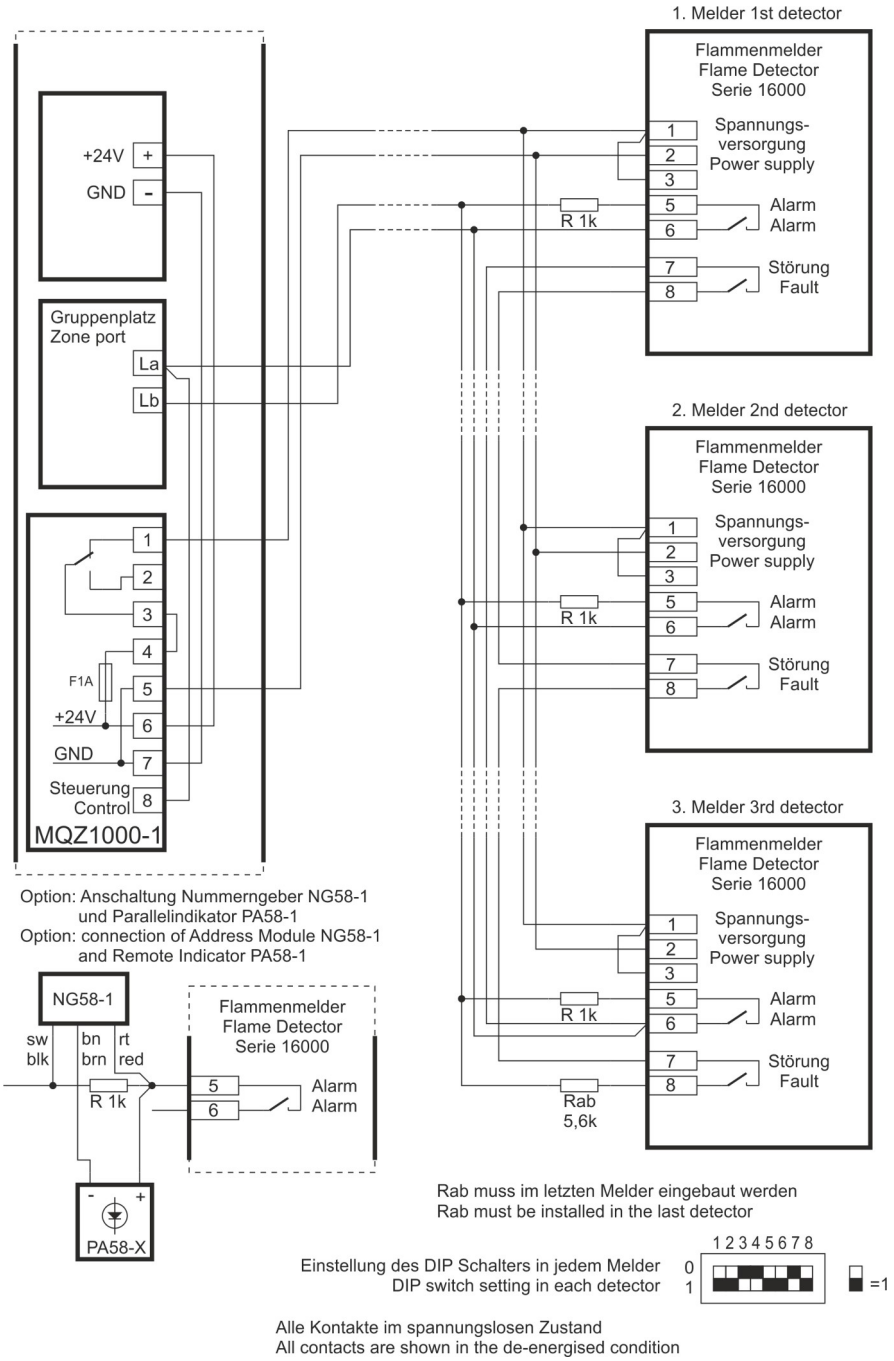
2.11.1.1 Settings

The detector can be adapted to different operating conditions by means of DIP switches. The response time can be selected with DIP switches 6 and 7.

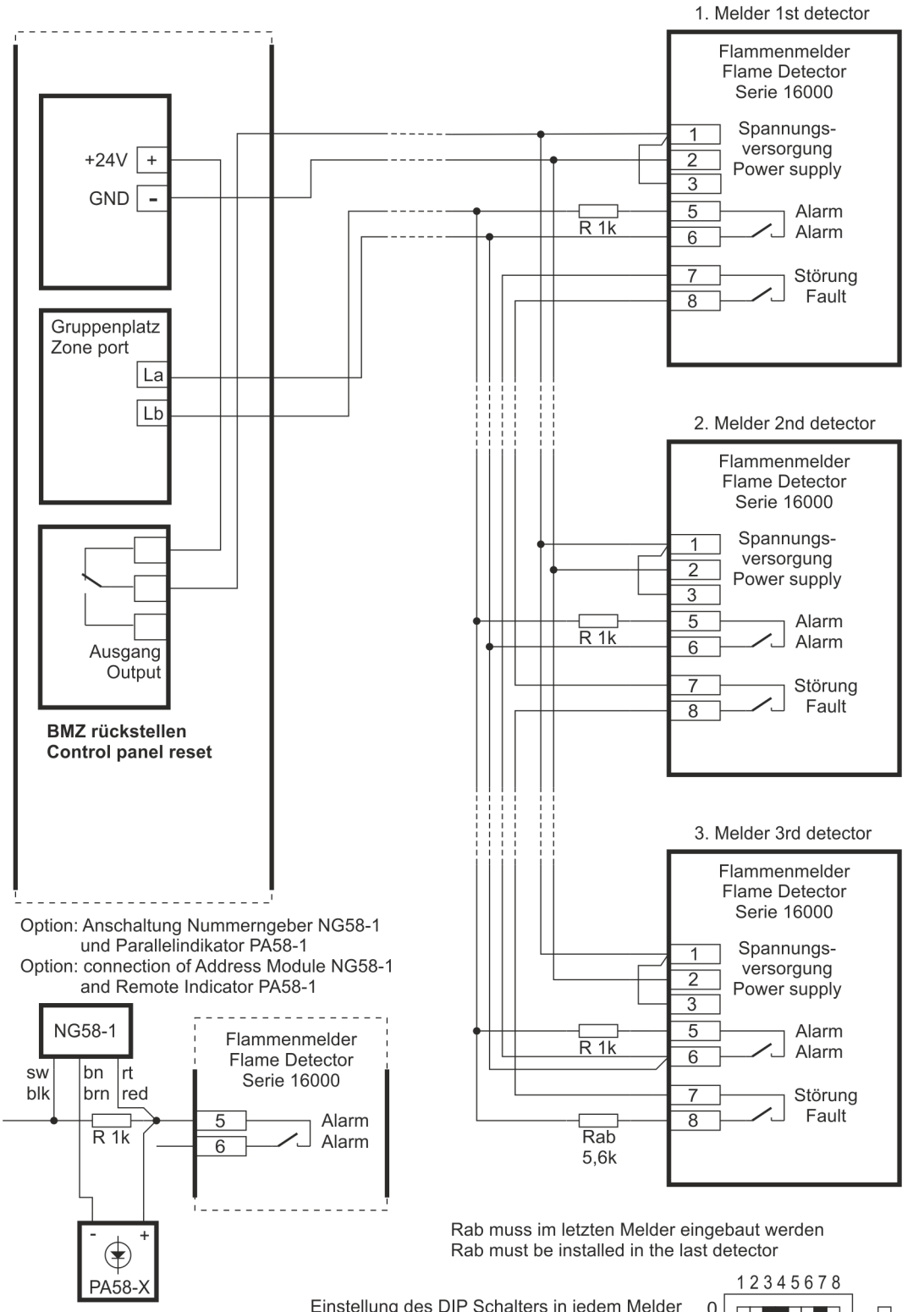
Type	EN 54-10 Class 1
16581	IR2
16589	IR3
16591	UV/IR2

SW6	SW7	Response time
0	0	8s
1	0	4s
0	1	2s
1	1	1s

2.11.1.2 Connection with MQZ1000-1

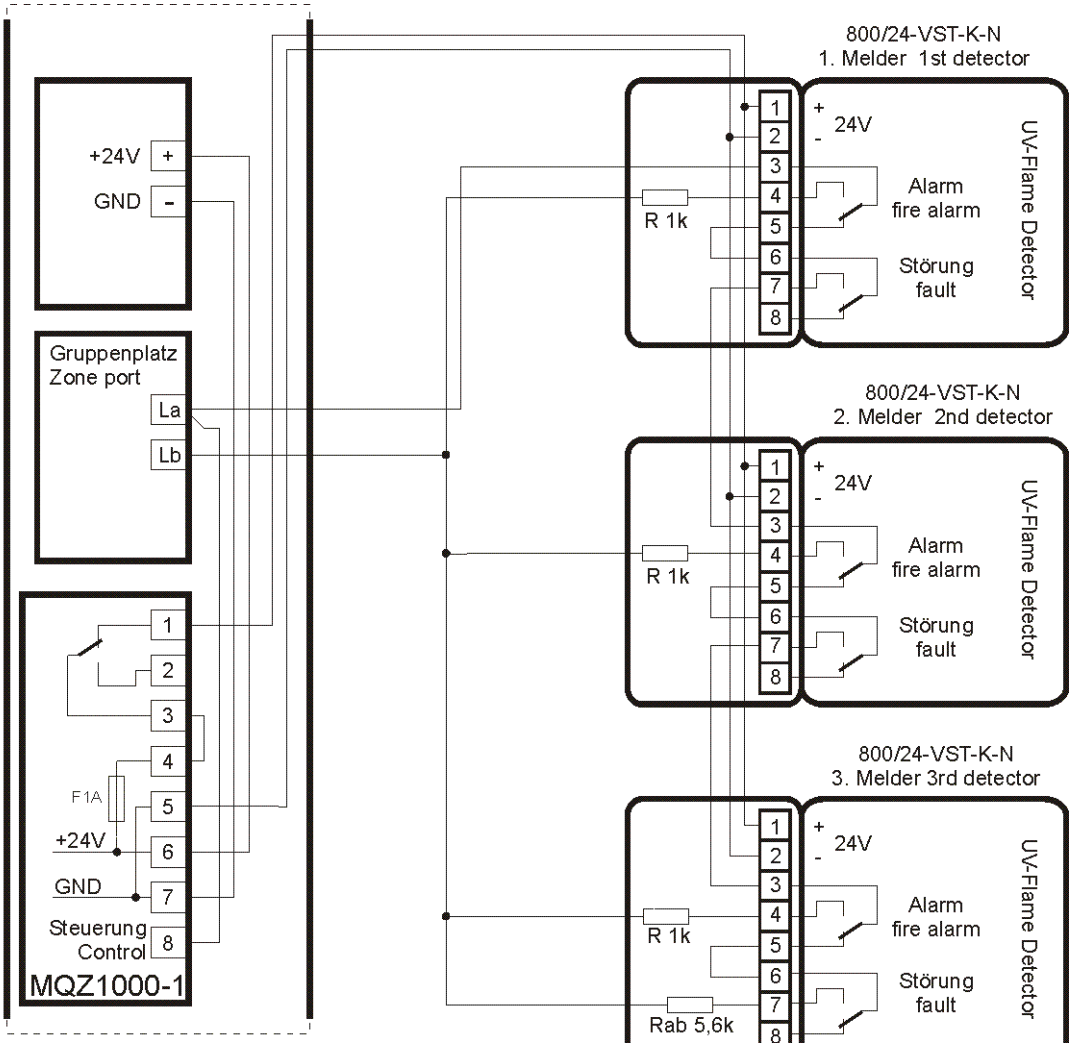


2.11.1.3 Connection – resetting by means of relay contact

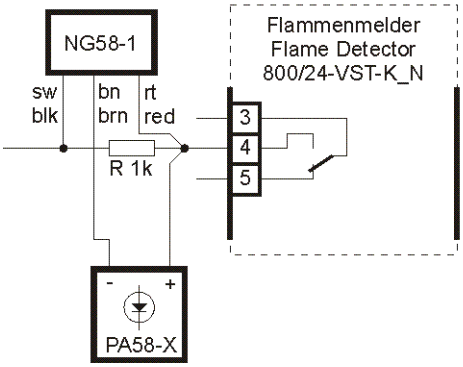


2.11.2 Flame Detector Series 800/24-VST-K-N

2.11.2.1 Connection with MQZ1000-1



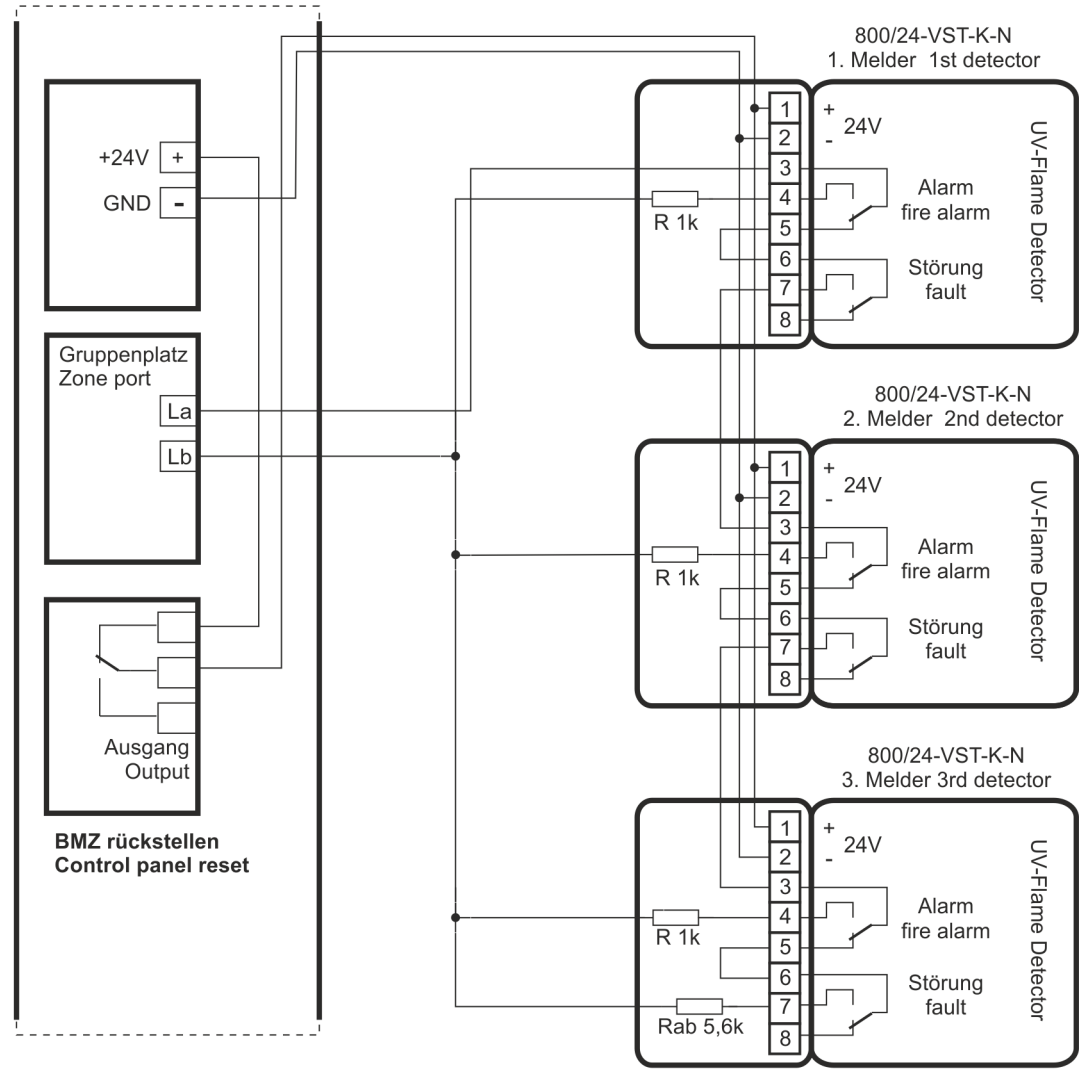
Option: Anschaltung Nummerngeber NG58-1
und Parallelindikator PA58-1
Option: connection of Address Module NG58-1
and Remote Indicator PA58-1



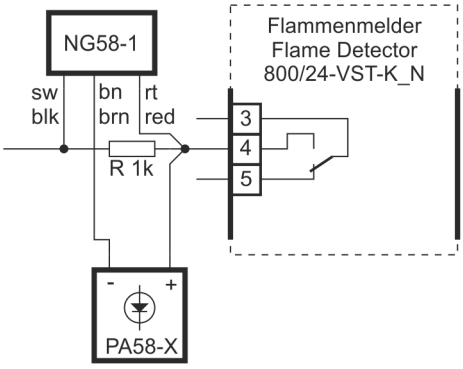
Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

2.11.2.2 Connection - resetting by means of relay contact



Option: Anschaltung Nummerngeber NG58-1
und Parallelindikator PA58-1
Option: connection of Address Module NG58-1
and Remote Indicator PA58-1

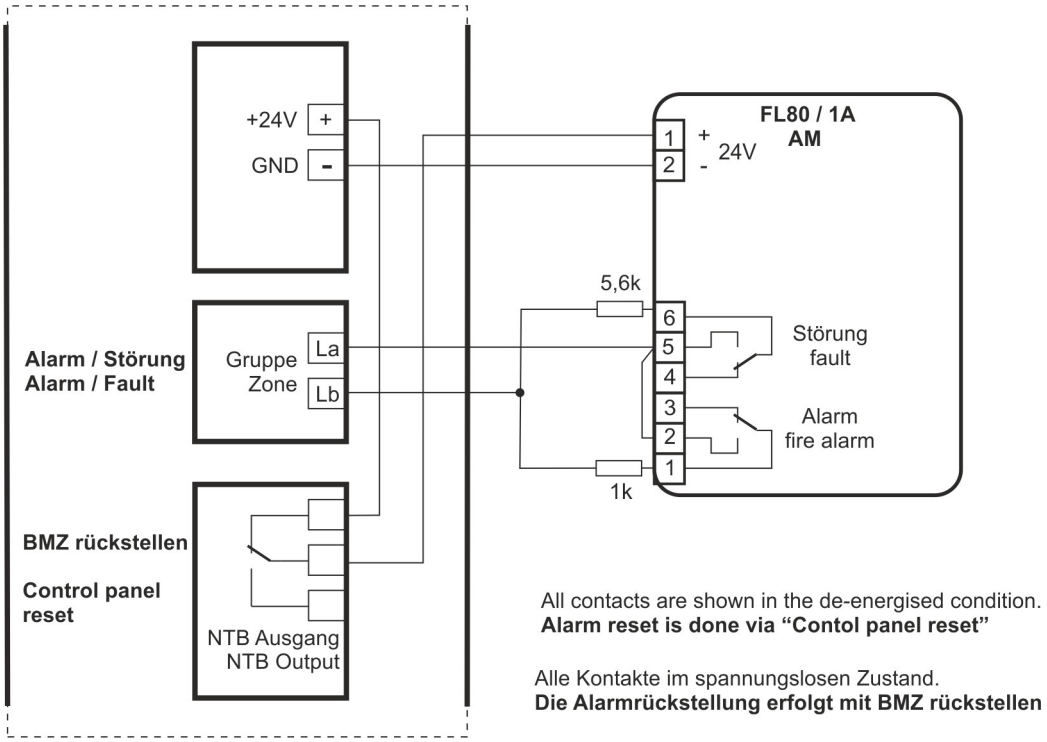


Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

Rückstellung des Alarms über BMZ-rückstellen
Alarm reset is done via “Contol panel reset”

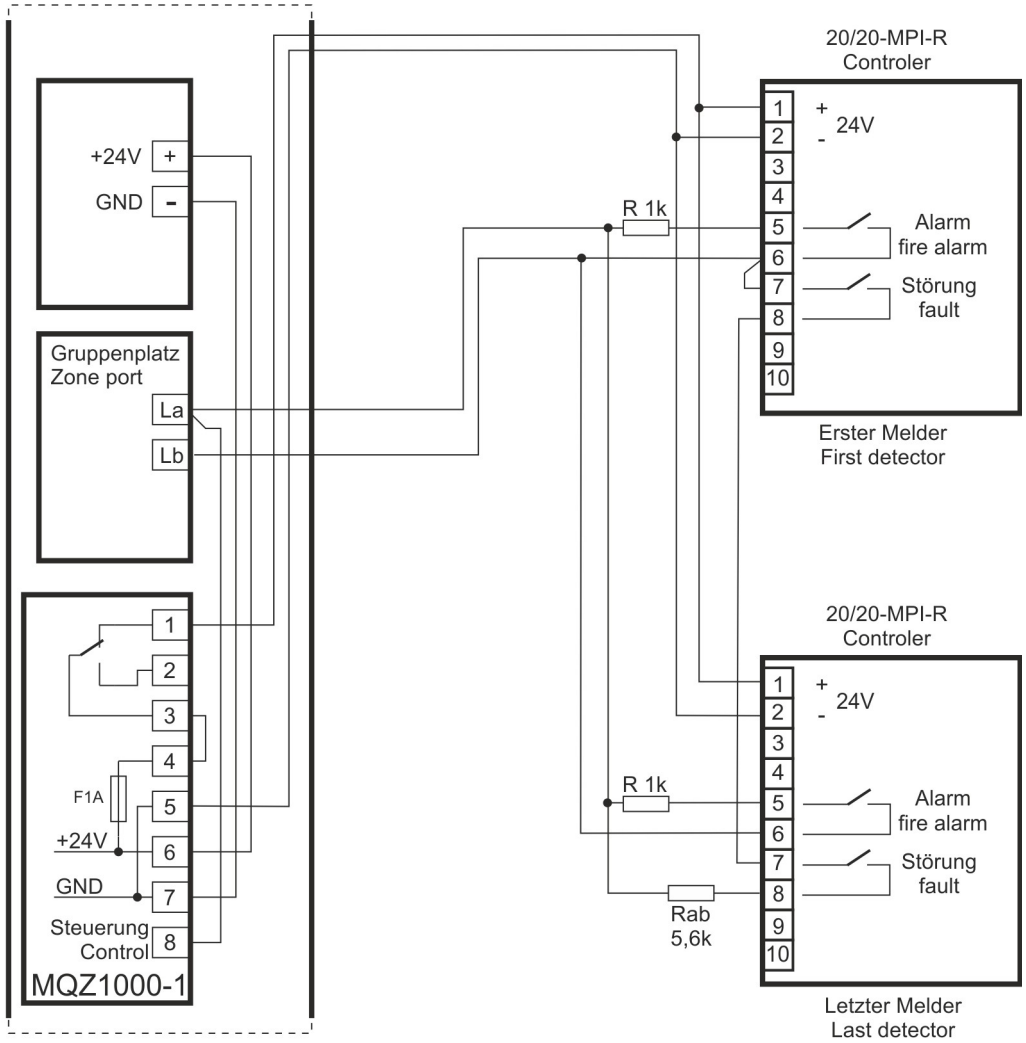
2.11.3 Flame Detector FL 80 /-A1 – version AM



An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

2.11.4 Flame Detector 20/20-MPI-R

2.11.4.1 Connection with MQZ1000-1



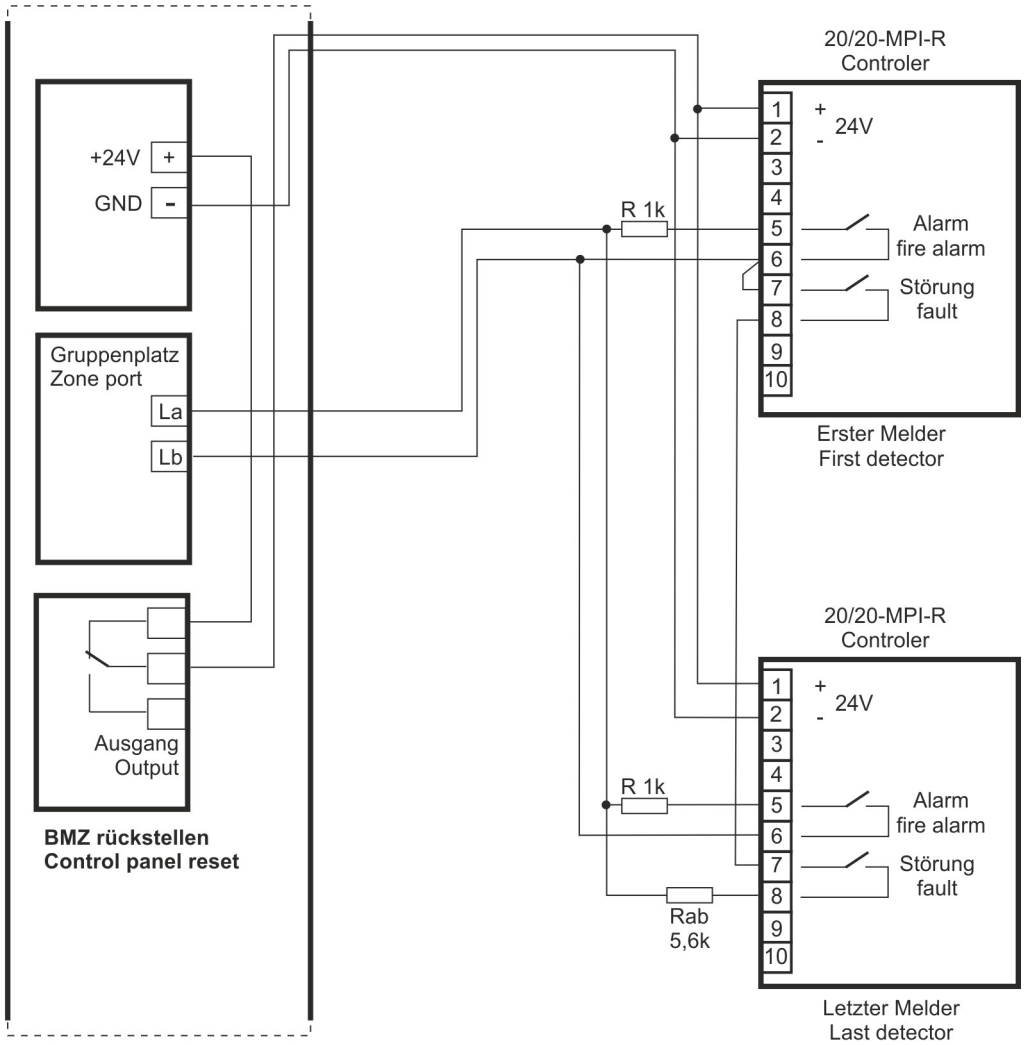
Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

Resetting the detector after a fire alarm results in a restart of the detector. This restart results in a brief fault of the conventional input. The BC600 allows a fault to be evaluated with a delay – "delayed fault evaluation" checkbox in the Zone parameters. The BC216 does not offer this option and therefore, if this detector is used on the BC216, a brief fault will occur after a reset of the detector.

2.11.4.2 Connection - resetting by means of relay contact



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rückstellung des Alarms über BMZ-rückstellen
Alarm reset is done via "Contol panel reset"

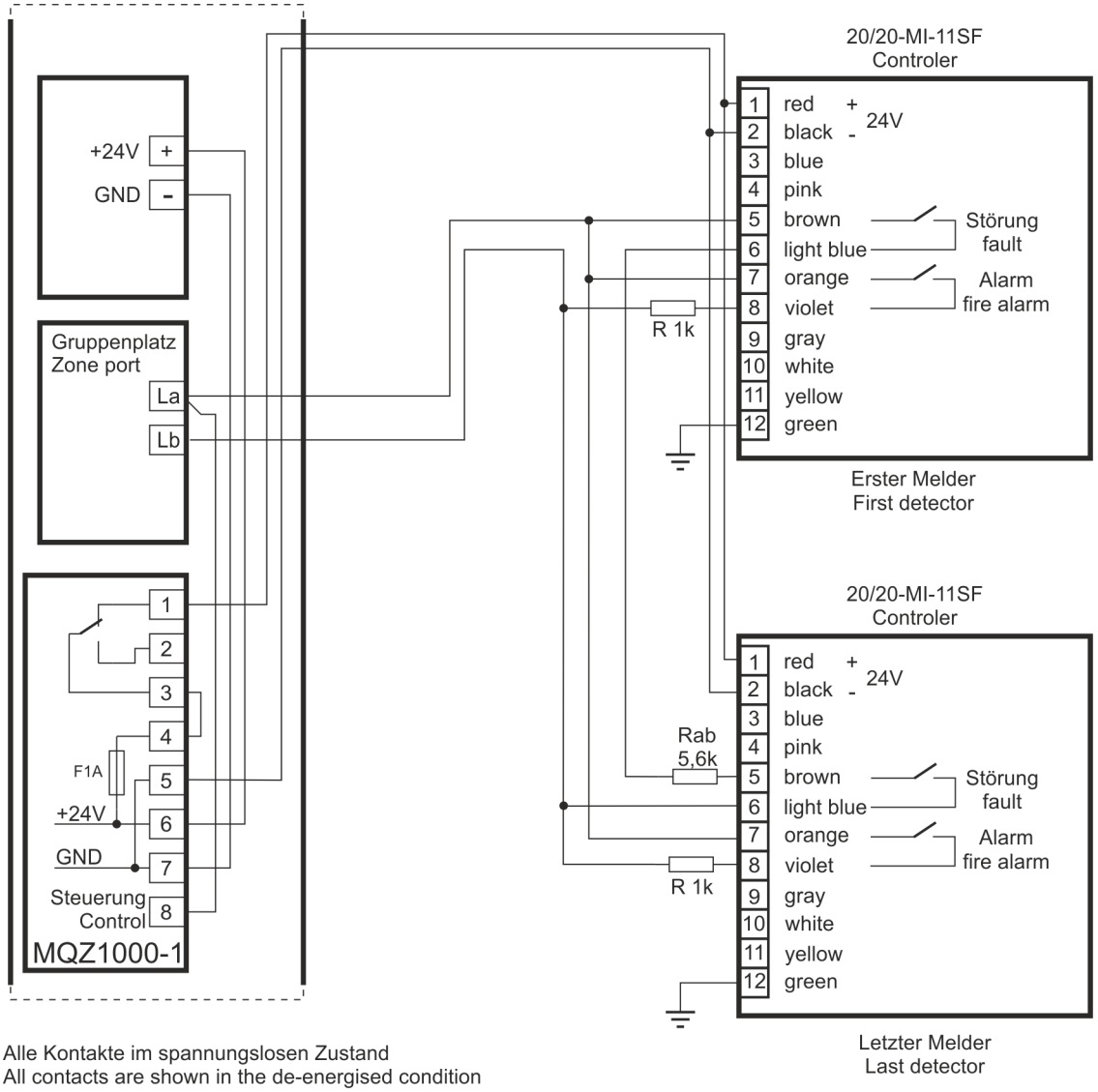
Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

Resetting the detector after a fire alarm results in a restart of the detector. This restart results in a brief fault of the conventional input. The BC600 allows a fault to be evaluated with a delay – "delayed fault evaluation" checkbox in the Zone parameters. The BC216 does not offer this option and therefore, if this detector is used on the BC216, a brief fault will occur after a reset of the detector.

2.11.5 Flame Detector 20/20-MI-11SF

2.11.5.1 Connection with MQZ1000-1



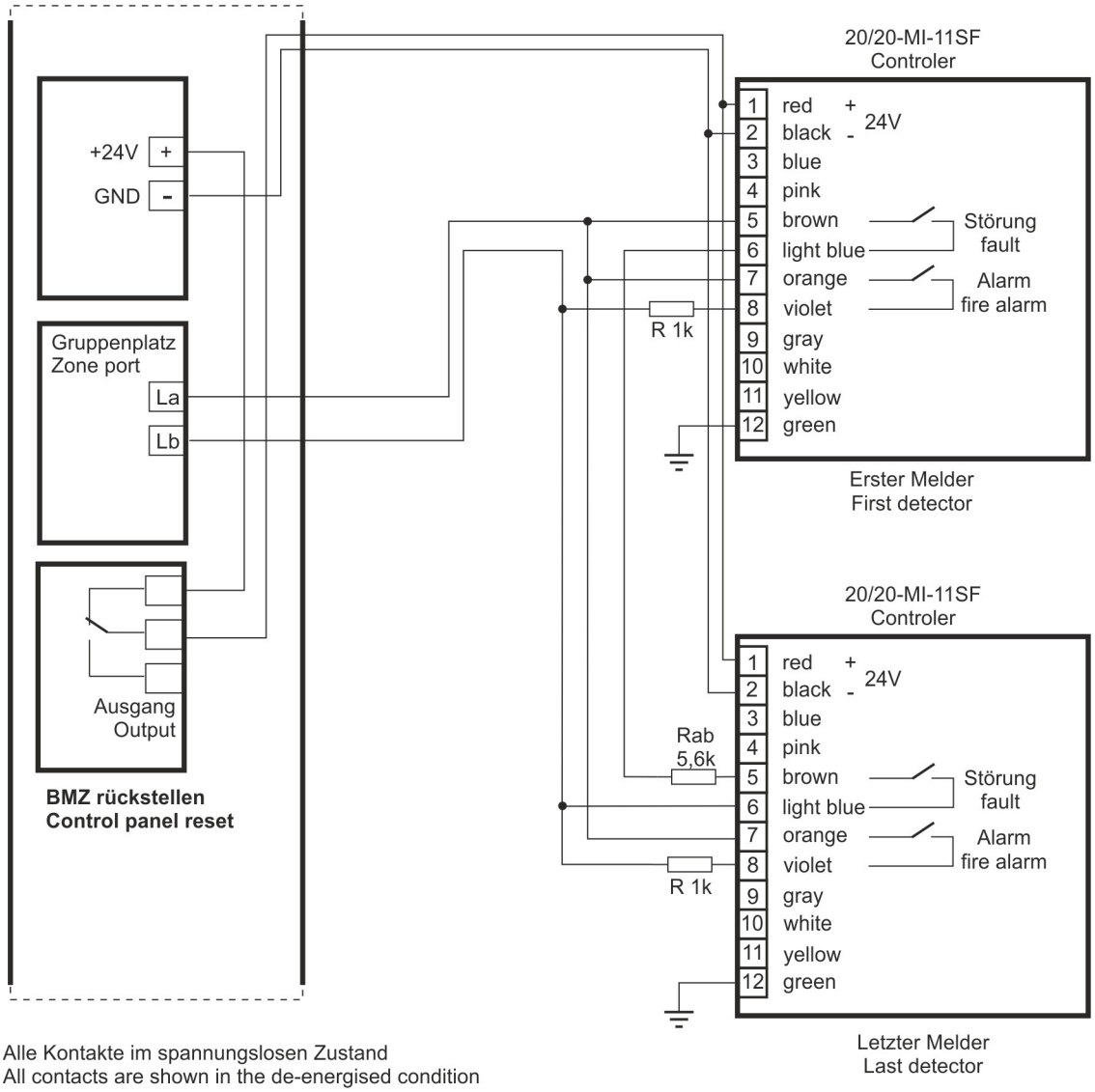
Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

Resetting the detector after a fire alarm results in a restart of the detector. This restart results in a brief fault of the conventional input. The BC600 allows a fault to be evaluated with a delay – "delayed fault evaluation" checkbox in the Zone parameters. The BC216 does not offer this option and therefore, if this detector is used on the BC216, a brief fault will occur after a reset of the detector.

2.11.5.2 Connection - resetting by means of relay contact



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

Rückstellung des Alarms über BMZ-rückstellen
Alarm reset is done via "Contol panel reset"

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

Resetting the detector after a fire alarm results in a restart of the detector. This restart results in a brief fault of the conventional input. The BC600 allows a fault to be evaluated with a delay – "delayed fault evaluation" checkbox in the Zone parameters. The BC216 does not offer this option and therefore, if this detector is used on the BC216, a brief fault will occur after a reset of the detector.

2.11.6 Flame Detector FMX5000 IR

2.11.6.1 Notes

Only one detector may be connected to one detector zone. Furthermore, the end-of-line resistor of the conventional line must have 3.3kOhm. For further information in this regard, please refer to the manufacturer's documentation.

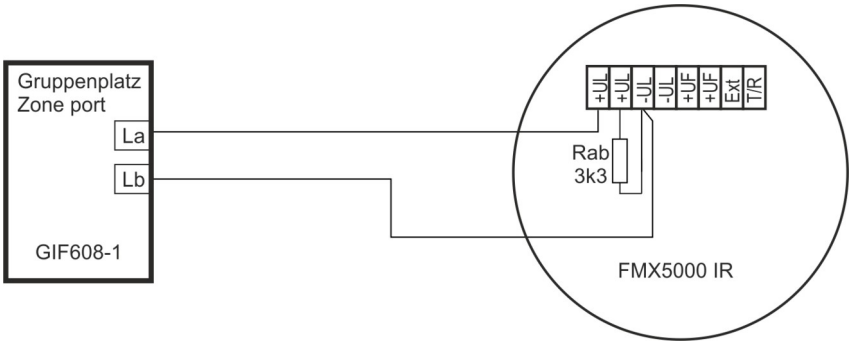
The detector is powered by the detector zone and signals its condition through the 2 lines:

- Alarm line (latching, can be reset by de-energising the detector zone)
- Fault line (optional, separate detector zone required)

If a fault line is used, the following is to be taken into account:

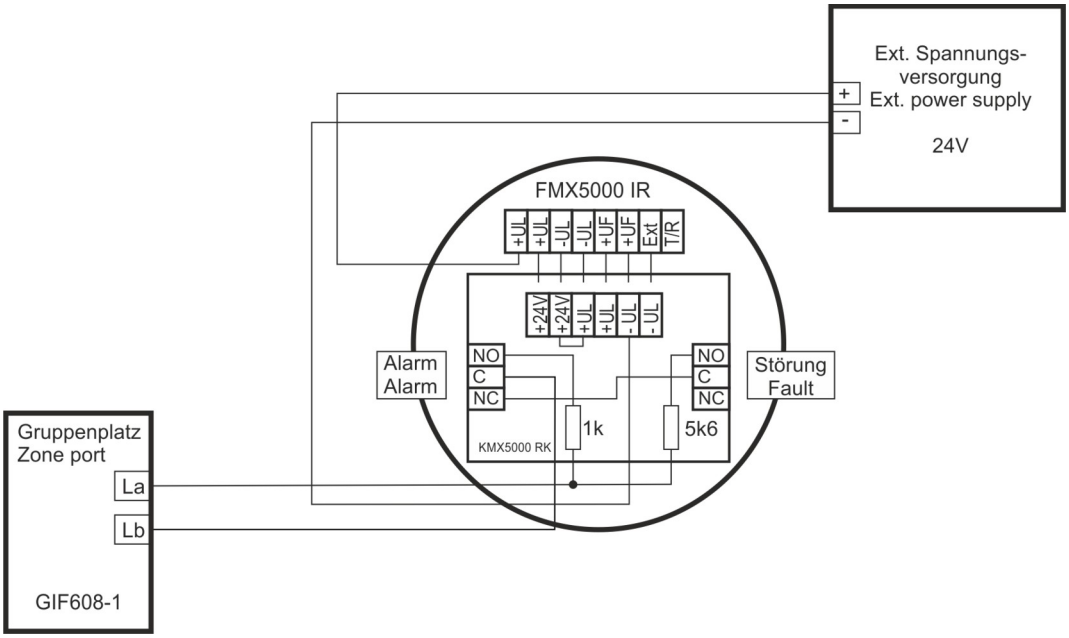
- Upon disablement of the alarm line, the fault line will be activated.
- In the case of alarm verification of the alarm line, the fault line will be activated while the alarm line is disabled.

2.11.6.2 Connection 1



Make sure that the connection cable is sufficiently temperature-resistant.
You must not connect more than one detector to a detector zone with Rab=3.3kΩ. Detector zones with Rab=5.6kΩ or Cab=47µF are not suitable. Therefore the device is only compatible with the BC016 and the BC600 (GIF608-1).

2.11.6.3 Connection 2



Make sure that the connection cable is sufficiently temperature-resistant.
You must not connect more than one detector to a detector zone with Rab=3.3kΩ. Detector zones with Rab=5.6kΩ or Cab=47µF are not suitable. Therefore the device is only compatible with the BC016 and the BC600 (GIF608-1).

2.11.7 Flame Detector FMX5000 UV

2.11.7.1 Notes

Only one detector may be connected to one detector zone. Furthermore, the end-of-line resistor of the conventional line must have 3.3kOhm. For further information in this regard, please refer to the manufacturer's documentation.

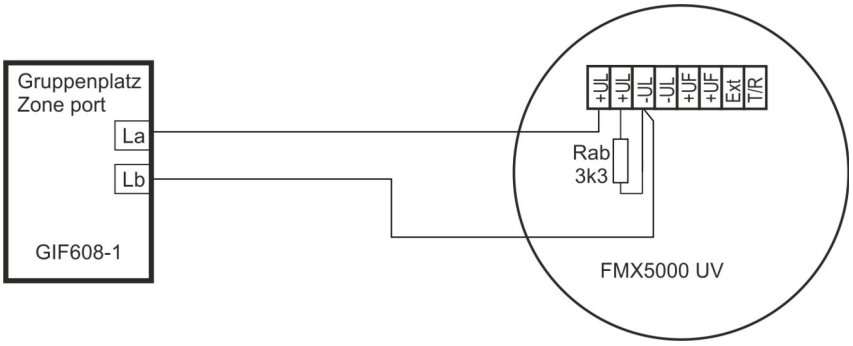
The detector is powered by the detector zone and signals its condition through the 2 lines:

- Alarm line (latching, can be reset by de-energising the detector zone)
- Fault line (optional, separate detector zone required)

If a fault line is used, the following is to be taken into account:

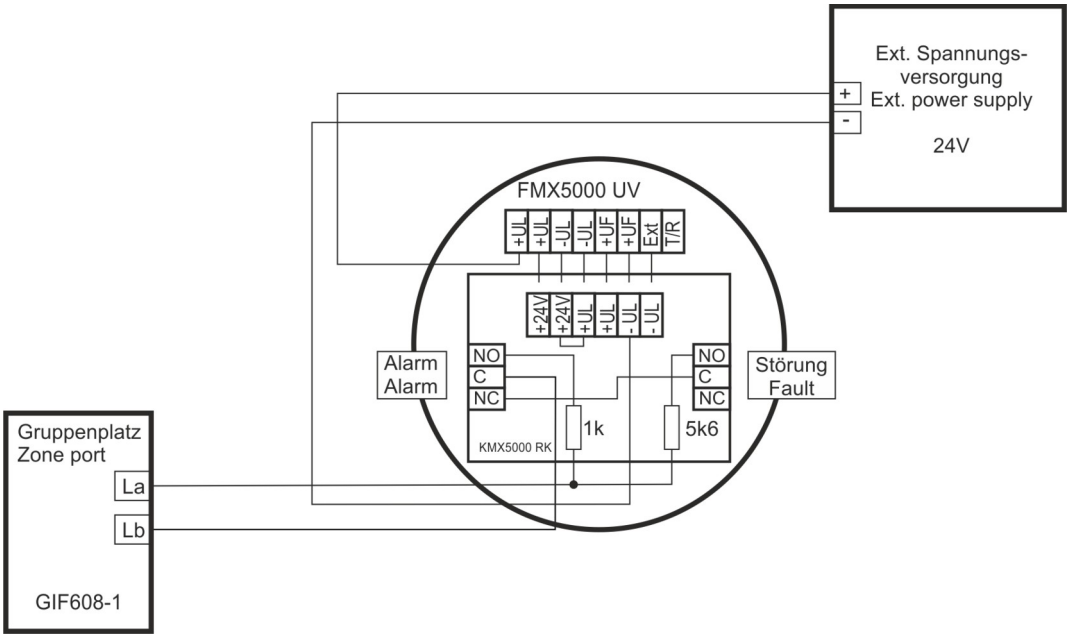
- Upon disablement of the alarm line, the fault line will be activated.
- In the case of alarm verification of the alarm line, the fault line will be activated while the alarm line is disabled.

2.11.7.2 Connection 1



Make sure that the connection cable is sufficiently temperature-resistant.
You must not connect more than one detector to a detector zone with Rab=3.3kΩ. Detector zones with Rab=5.6kΩ or Cab=47µF are not suitable. Therefore the device is only compatible with the BC016 and the BC600 (GIF608-1).

2.11.7.3 Connection 2



Make sure that the connection cable is sufficiently temperature-resistant.
You must not connect more than one detector to a detector zone with Rab=3.3kΩ. Detector zones with Rab=5.6kΩ or Cab=47µF are not suitable. Therefore the device is only compatible with the BC016 and the BC600 (GIF608-1).

2.11.8 Flame Detector YMX5000

2.11.8.1 Notes

Only one detector may be connected to one detector zone. Furthermore, the end-of-line resistor of the conventional line must have 3.3kOhm. For further information in this regard, please refer to the manufacturer's documentation.

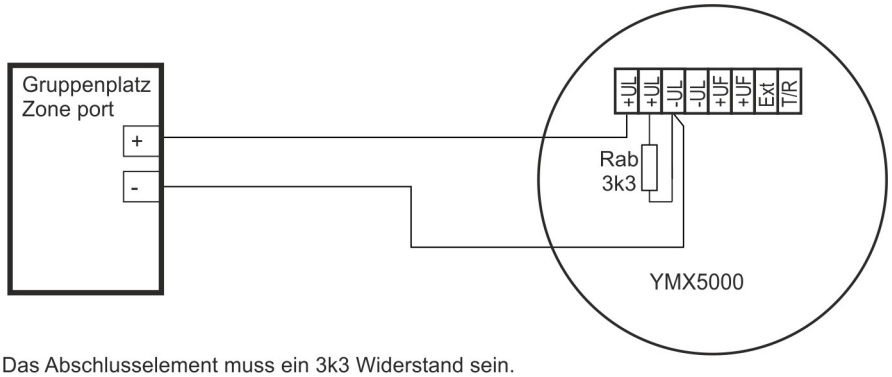
The detector is powered by the detector zone and signals its condition through the 2 lines:

- Alarm line (latching, can be reset by de-energising the detector zone)
- Fault line (optional, separate detector zone required)

If a fault line is used, the following is to be taken into account:

- Upon disablement of the alarm line, the fault line will be activated.
- In the case of alarm verification of the alarm line, the fault line will be activated while the alarm line is disabled.

2.11.8.2 Connection

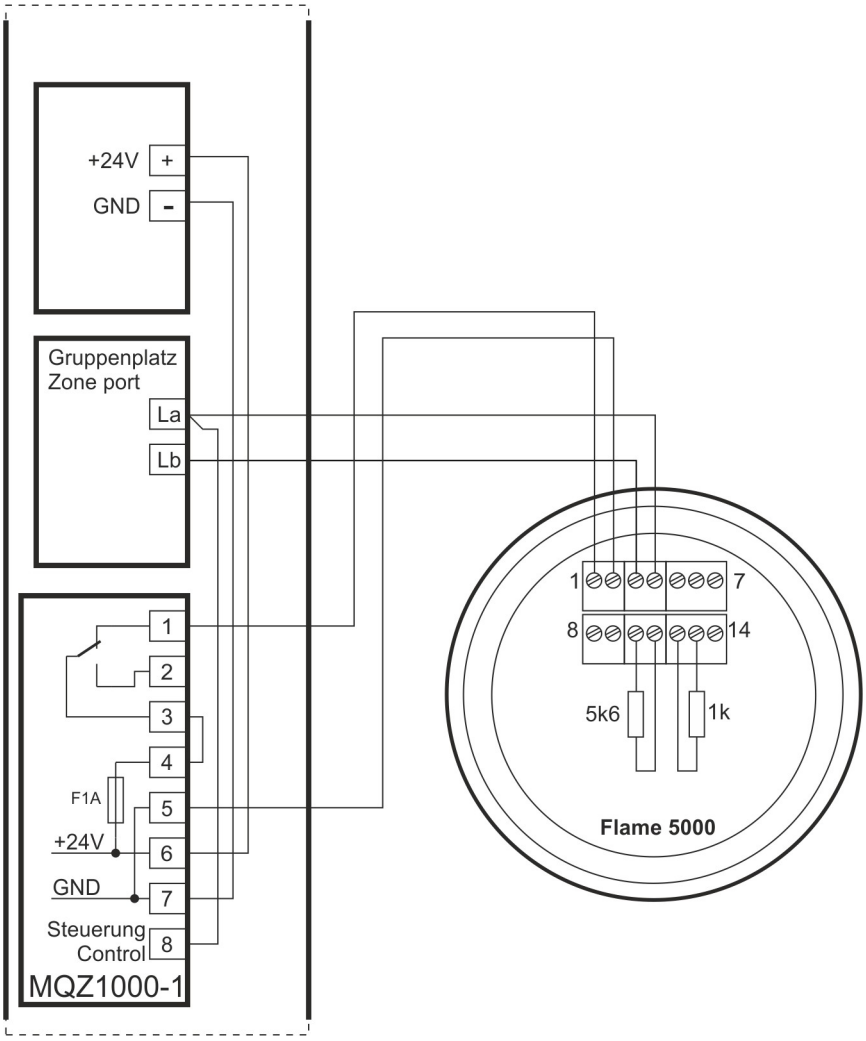


Das Abschlusselement muss ein 3k3 Widerstand sein.
Die Brandmelderzentrale muss ebenfalls auf diesen Wert gestellt werden.

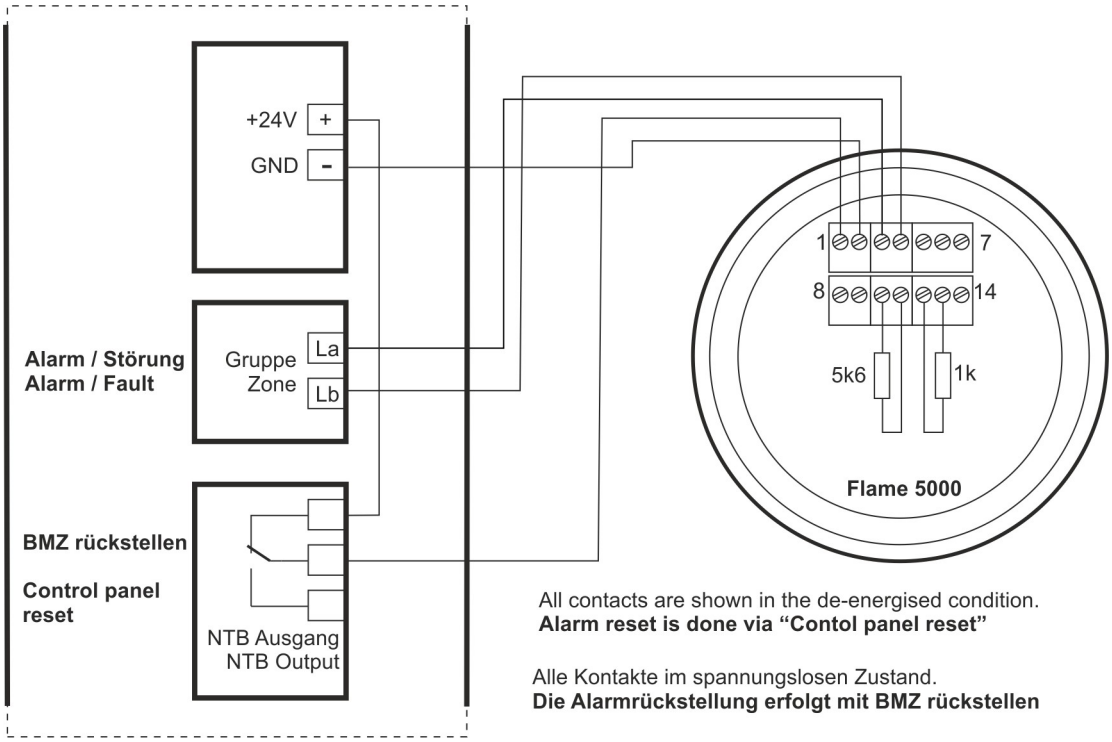
The end-of-line element must be a 3k3 resistor.
The fire alarm control panel must also be set to this value.

2.11.9 Flame detector with colour video monitoring Flame 5000

2.11.9.1 Connection with MQZ1000-1



2.11.9.2 Connection – resetting via relay output



An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

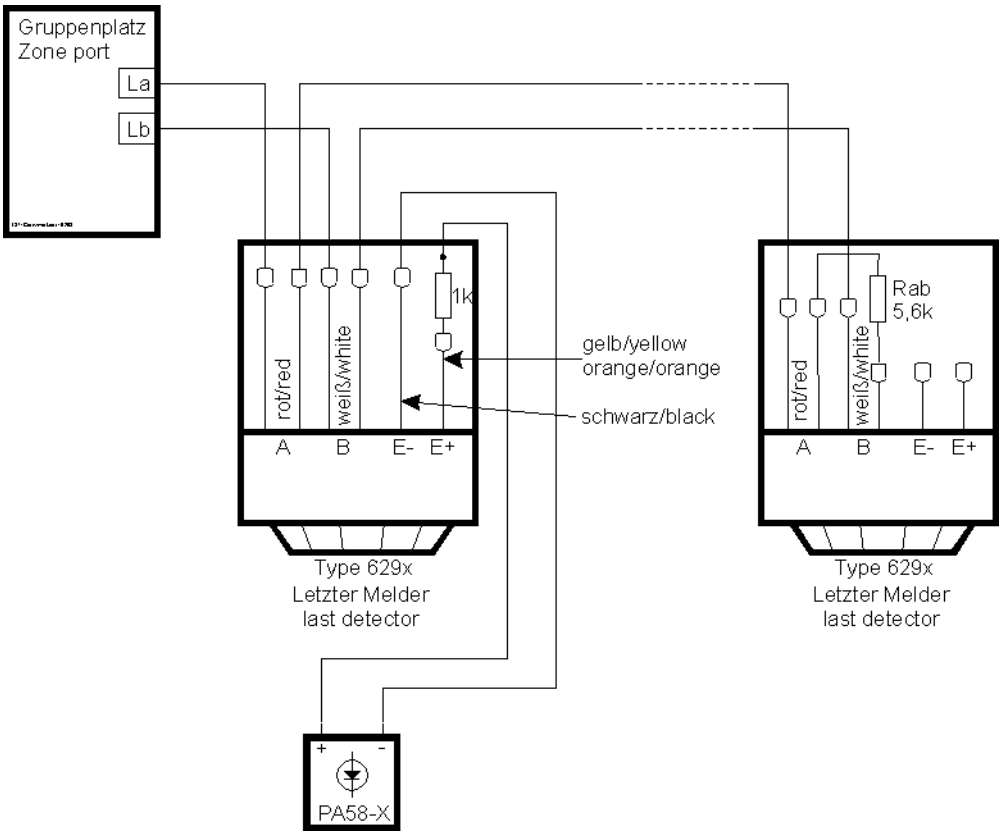
2.11.10 Thermal Detectors 6295, 6296, 6297 and 6298

2.11.10.1 Notes

A maximum of 32 detectors may be connected to a conventional detection line.

Type	EN 54-5 Class
6295	57°C – A2S
6296	72°C – B2
6297	87°C – CS
6298	117°C – ES

2.11.10.2 Connection



Make sure that the temperature resistance of the connection cable is sufficient.

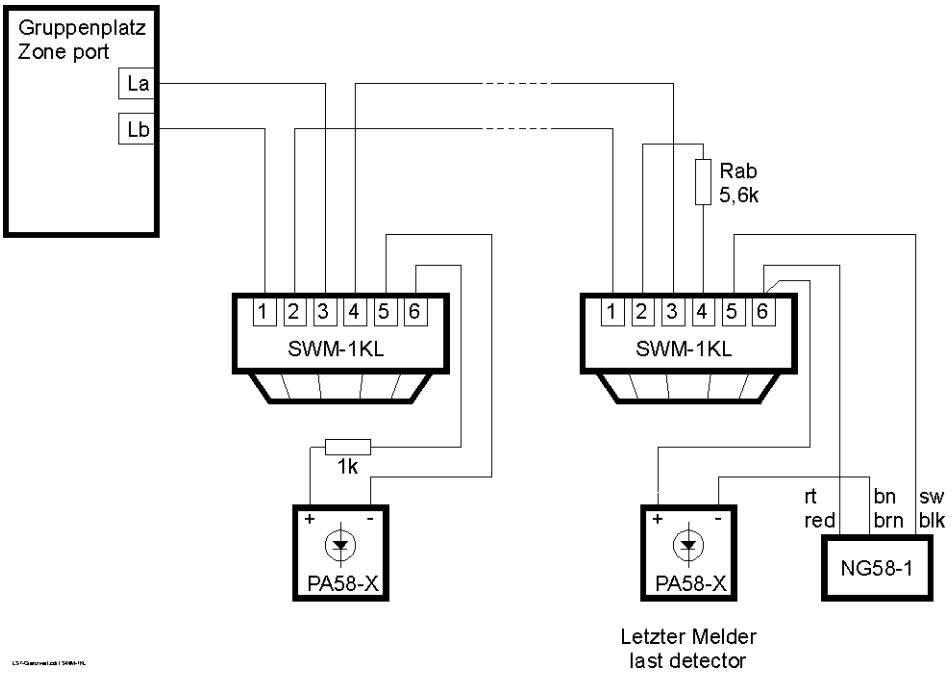
2.11.11 Thermal Max Detector SWM-1KL

2.11.11.1 Notes

The number of detectors of a zone is not limited since only a thermally controlled, normally open contact (bimetallic strip) is used. Therefore the quiescent current of a detector is 0.

The connection below can be used for the 57, 80 and 100 degree version.

2.11.11.2 Connection



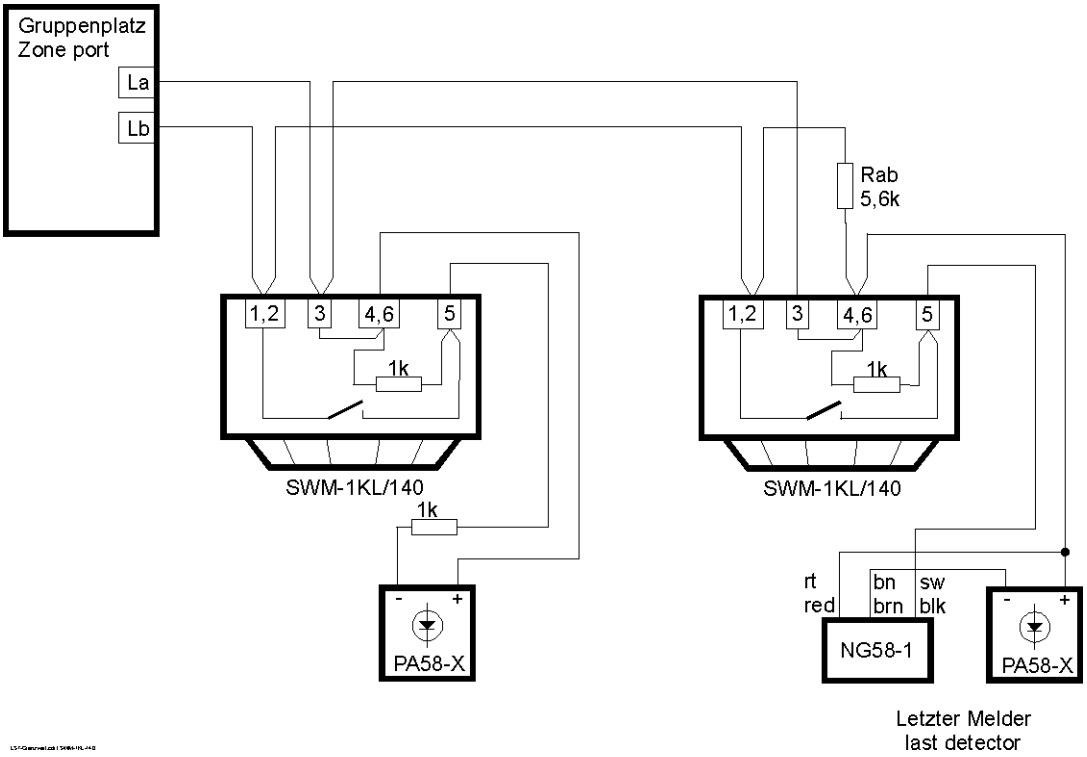
Make sure that the temperature resistance of the connection cable is sufficient.

2.11.12 Thermal Max Detector SWM-1KL-140

2.11.12.1 Notes

The integrated resistor has to be replaced by a 1kOhm resistor.

2.11.12.2 Connection



Make sure that the temperature resistance of the connection cable is sufficient.

2.11.13 Thermal detector HT-27121-275

2.11.13.1 Notes

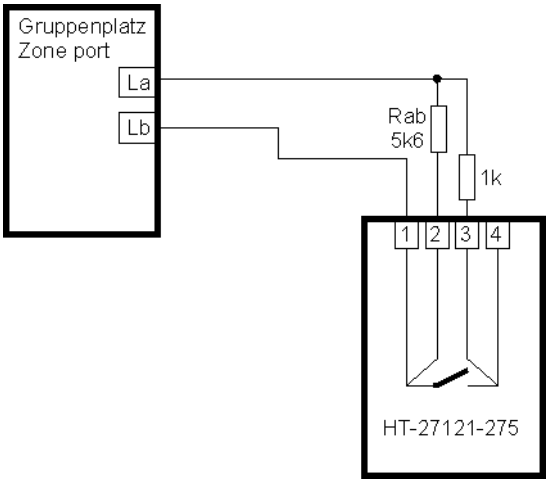
The number of detectors of a zone is not limited since only a thermally controlled, normally open contact (bimetallic strip) is used. (Quiescent current of the detector = 0 mA).

This detector activates at 135°C (275°F) and does not have a light emitting diode.

This connection also applies analogously to the following detectors, because they also do not have a light emitting diode.

Type	Alarm temperature	
27121-0-225	107°C	
27121-0-275	135°C	LST AN242170
27121-0-325	162°C	
27121-0-360	182°C	
27121-0-450	232°C	
27121-0-600	315°C	
27121-0-725	385°C	

2.11.13.2 Connection



Make sure that the temperature resistance of the connection cable is sufficient.

2.11.14 Heat detector WMX5000 FS

2.11.14.1 Notes

Only one detector may be connected to one detector zone. Furthermore, the end-of-line resistor of the conventional alarm line must have 3.3kOhm. The WMX5000 is a high temperature detector whose alarm threshold can be selected (with DIP switches in the base – for further information in this regard, please refer to the manufacturer's documentation).

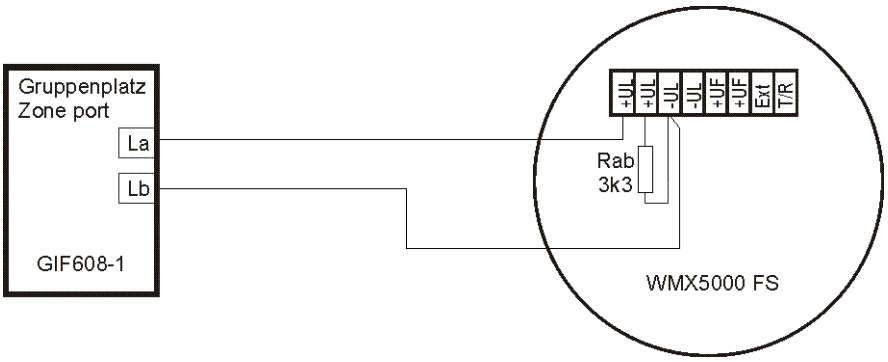
The detector is powered by the detector zone and signals its condition through the 2 lines:

- Alarm line (latching, can be reset by de-energising the detector zone)
- Fault line (optional, separate detector zone required)

If a fault line is used, the following is to be taken into account:

- Upon disablement of the alarm line, the fault line will be activated.
- In the case of alarm verification of the alarm line, the fault line will be activated while the alarm line is disabled.
- A 5.6kOhm end-of-line resistor must be used for the fault line.

2.11.14.2 Connection



Make sure that the connection cable is sufficiently temperature-resistant.
You must not connect more than one detector to a detector zone with Rab = 3.3kΩ. Detector zones with Rab = 5.6kΩ or Cab = 47µF are not suitable. Therefore the device is only compatible with the BC016 and the BC600 (GIF608-1).

2.11.15 Fire gas detector GMX1001CO I

2.11.15.1 Note

Only one detector may be connected to one detector zone. Furthermore, the end-of-line resistor of the conventional alarm line must have 3.3kOhm. For further information in this regard, please refer to the manufacturer's documentation.

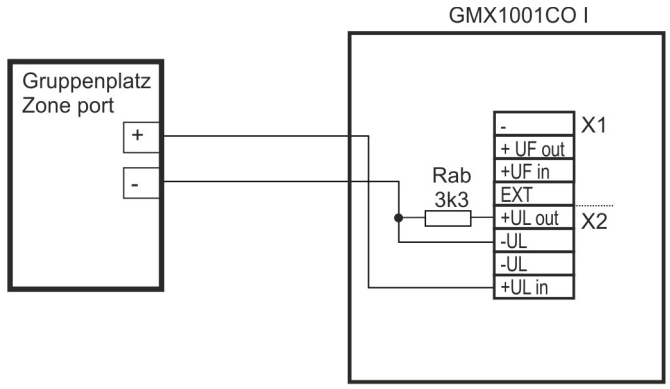
The detector is powered by the detector zone and signals its condition through the 2 lines:

- Alarm line (latching, can be reset by de-energising the detector zone)
- Fault line (optional, separate detector zone required)

If a fault line is used, the following is to be taken into account:

- Upon disablement of the alarm line, the fault line will be activated.
- In the case of alarm verification of the alarm line, the fault line will be activated while the alarm line is disabled.
- A 5.6kOhm end-of-line resistor must be used for the fault line.

2.11.15.2 Connection



Das Abschlusselement muss ein 3k3 Widerstand sein.
Die Brandmelderzentrale muss ebenfalls auf diesen Wert gestellt werden.

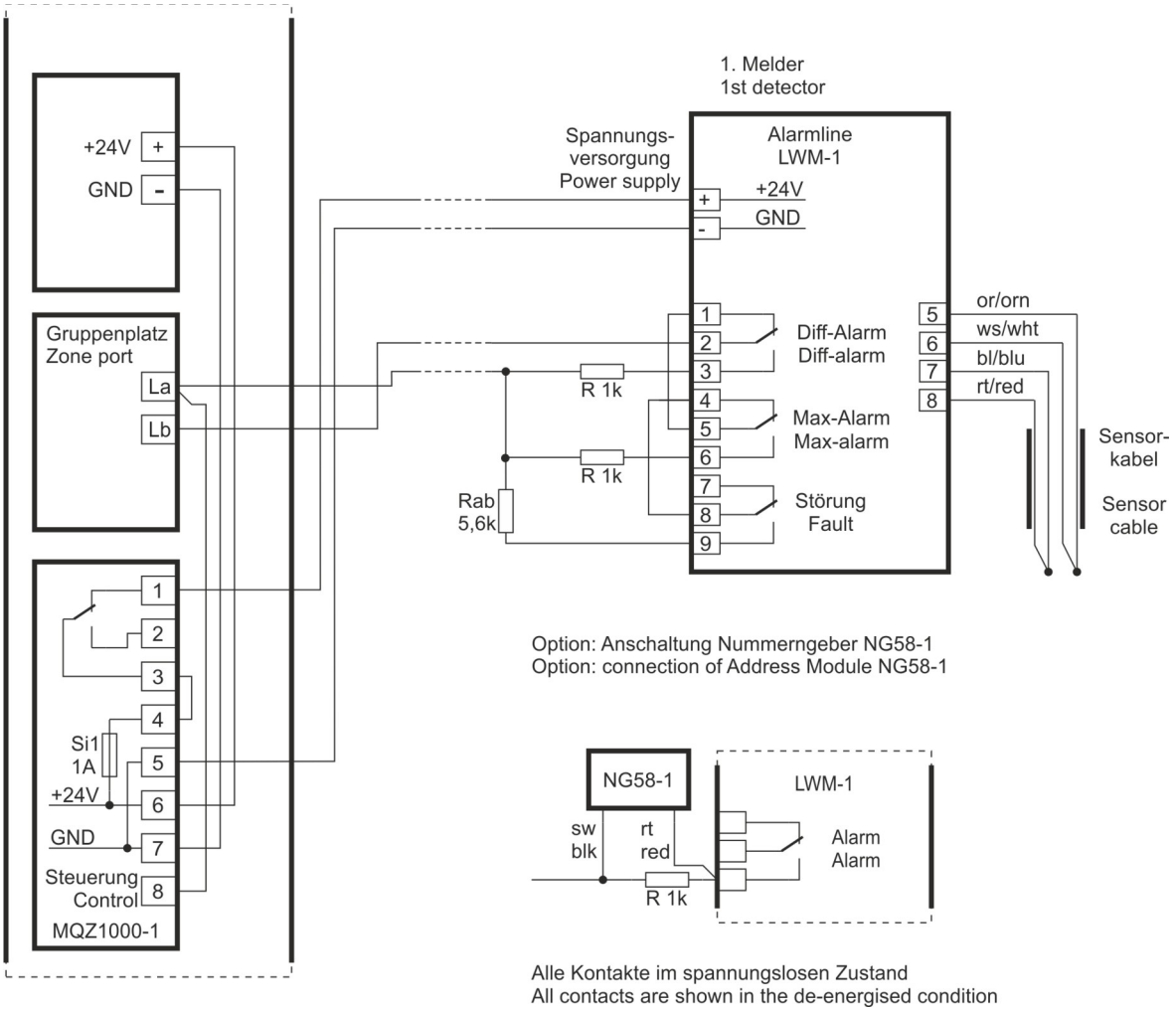
The end-of-line element must be a 3k3 resistor.
The fire alarm control panel must also be set to this value.

2.12 Linear detectors

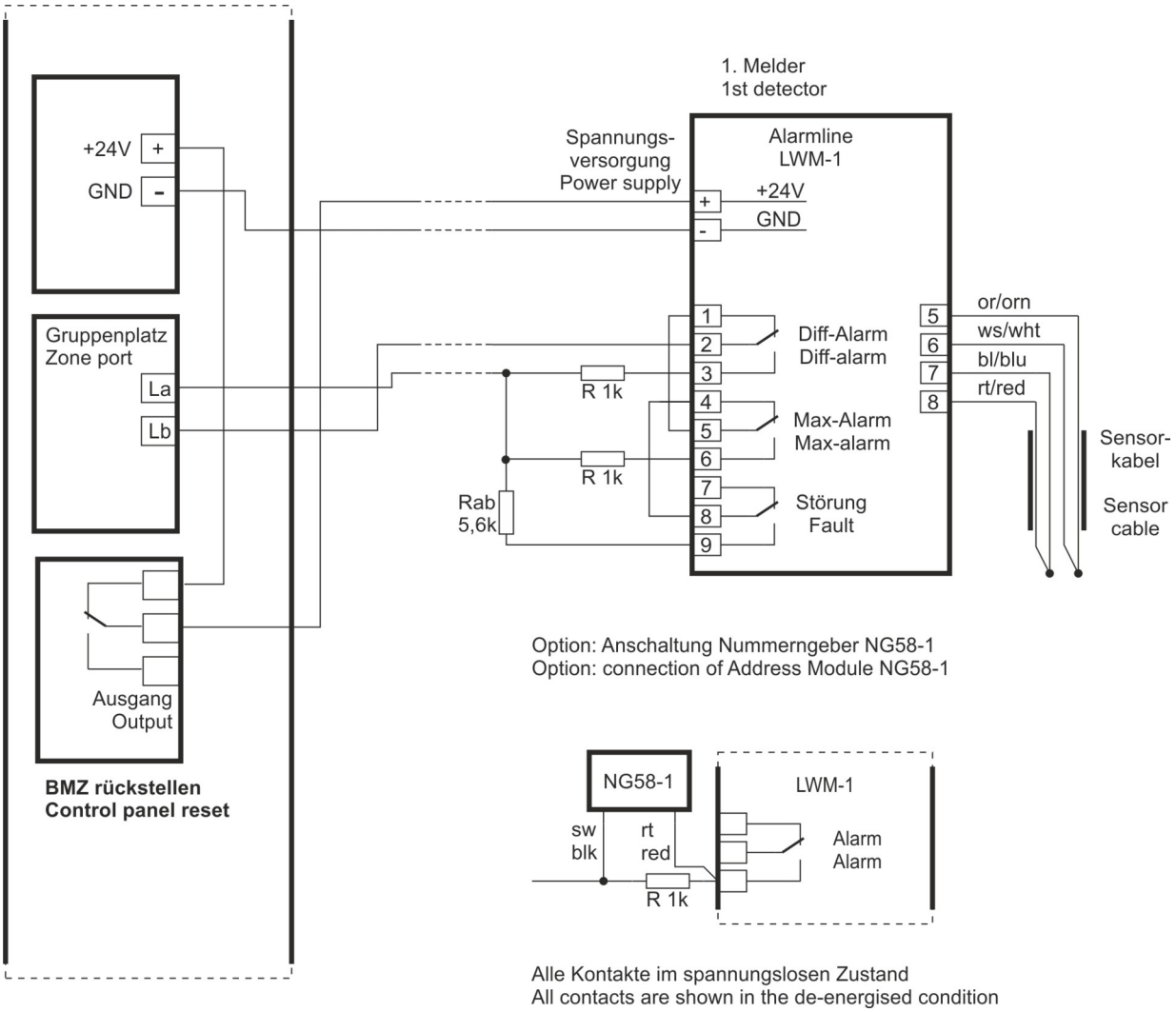
2.12.1 Linear Heat Detector Unit LWM-1

For the evaluation of temperature, a special sensor cable is connected to the Linear Heat Detector Unit Alarmline LWM-1.

2.12.1.1 Connection with MQZ1000-1

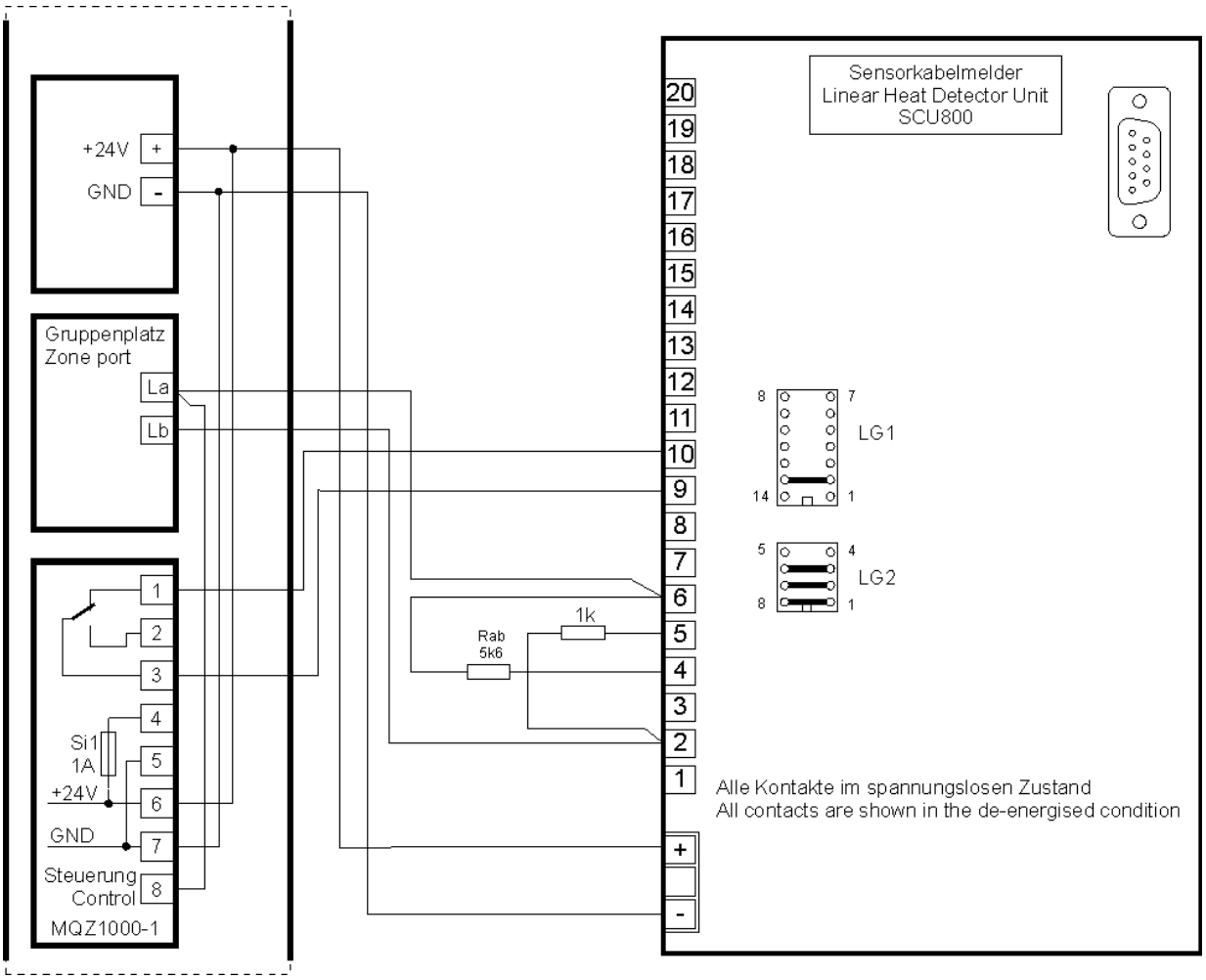


2.12.1.2 Connection - resetting by means of relay contact



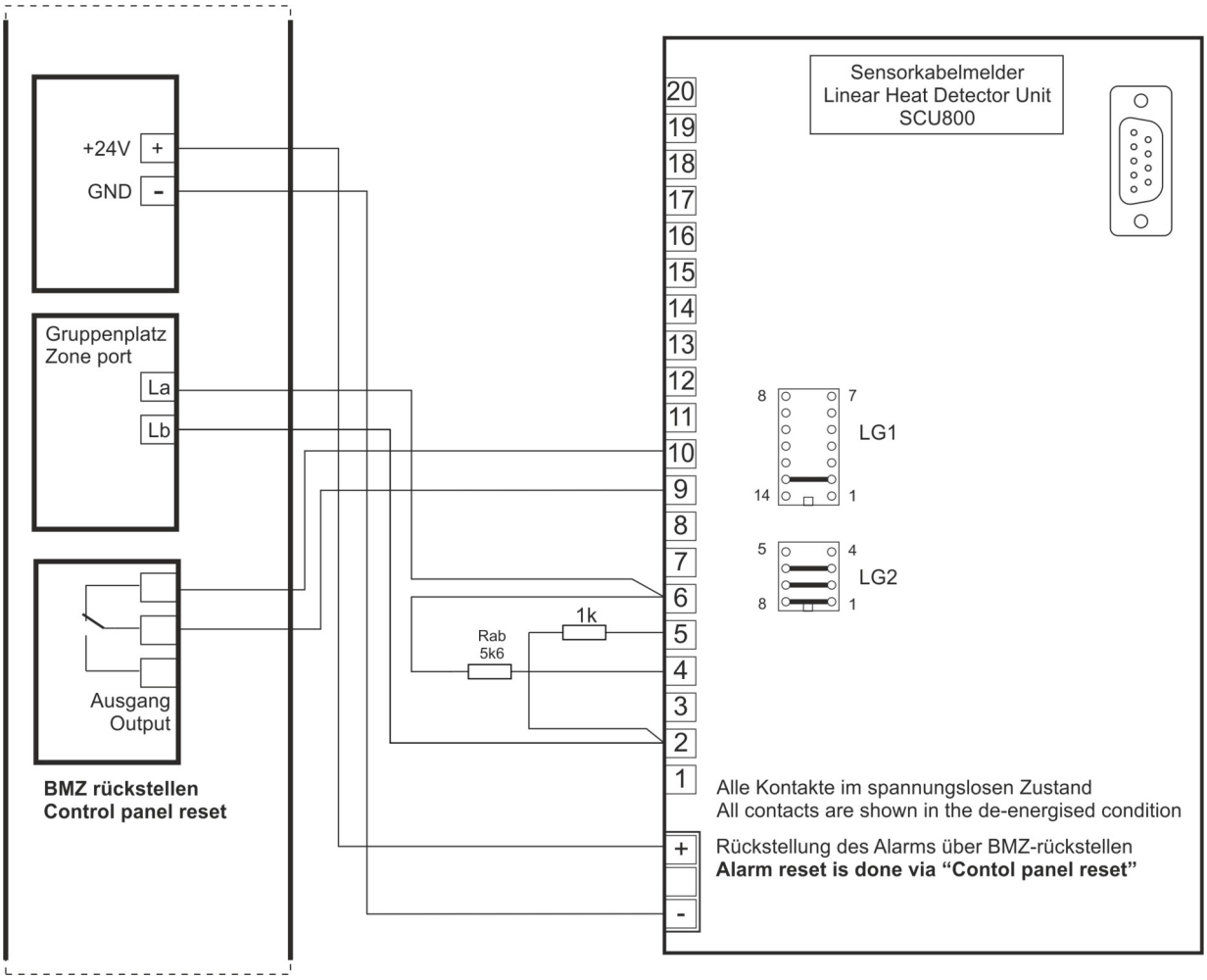
2.12.2 Linear Heat Detector Unit SCU800

2.12.2.1 Connection with MQZ1000-1



For the resetting of the SCU800, jumpers must be attached to the pin connector BR2. The product is delivered with jumpers attached between 2-3 and 4-5. The jumpers must be attached between the following pins: 1-2; 3-4; 5-6.

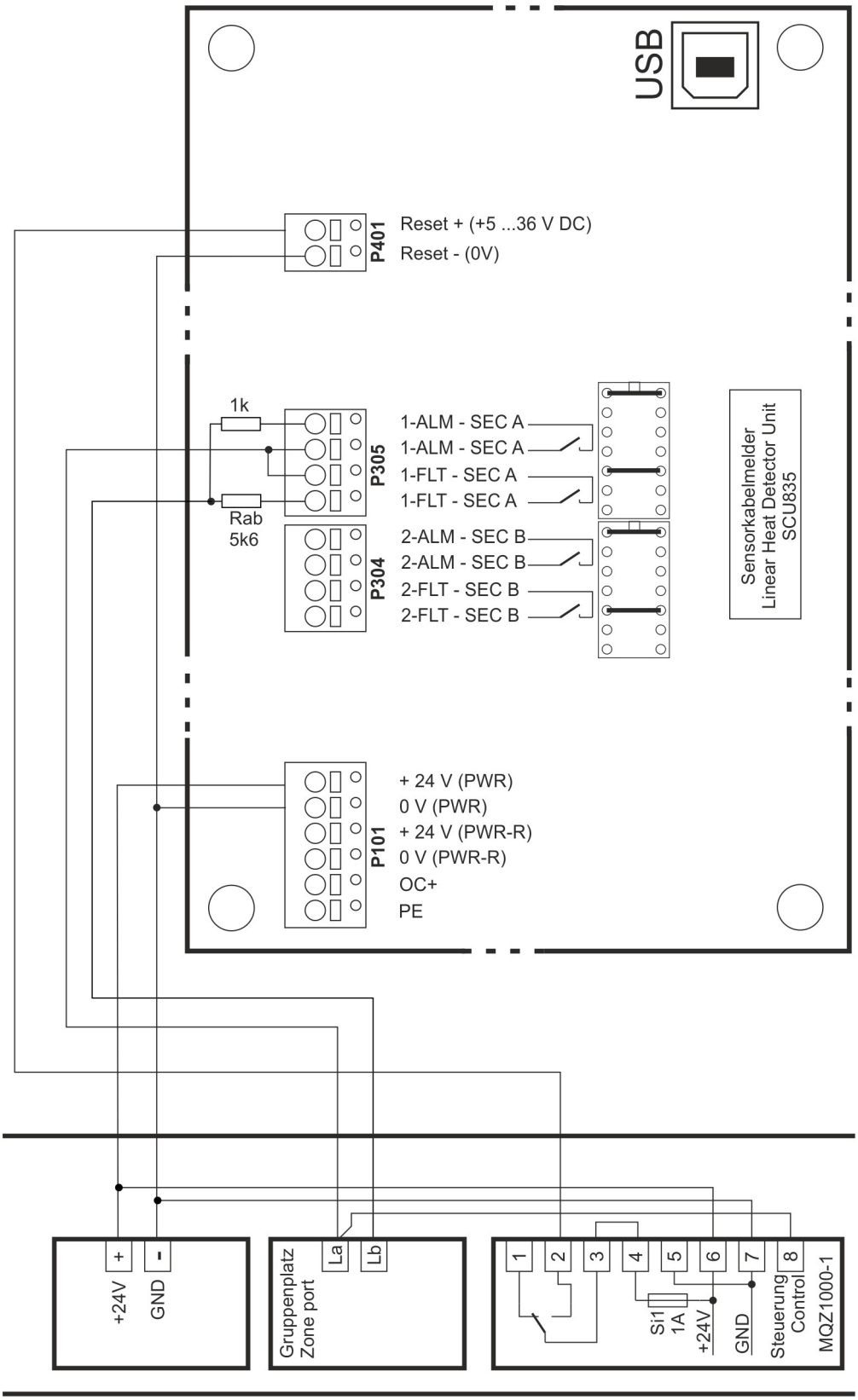
2.12.2.2 Connection - resetting by means of relay contact



For the resetting of the SCU800, jumpers must be attached to the pin connector BR2. The product is delivered with jumpers attached between 2-3 and 4-5. The jumpers must be attached between the following pins: 1-2; 3-4; 5-6.

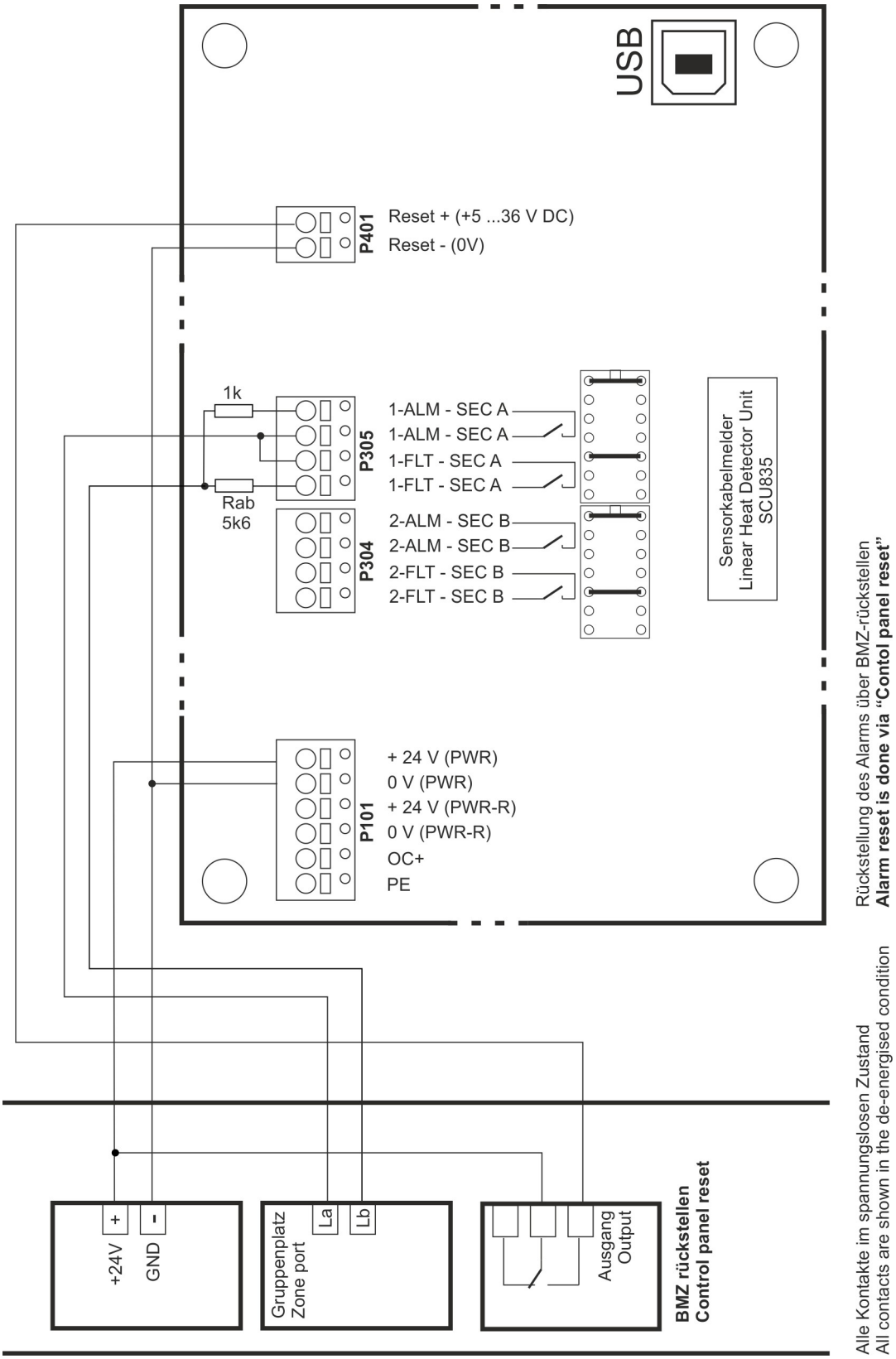
2.12.3 Linear Heat Detector Unit SCU835-1

2.12.3.1 Connection with MQZ1000-1



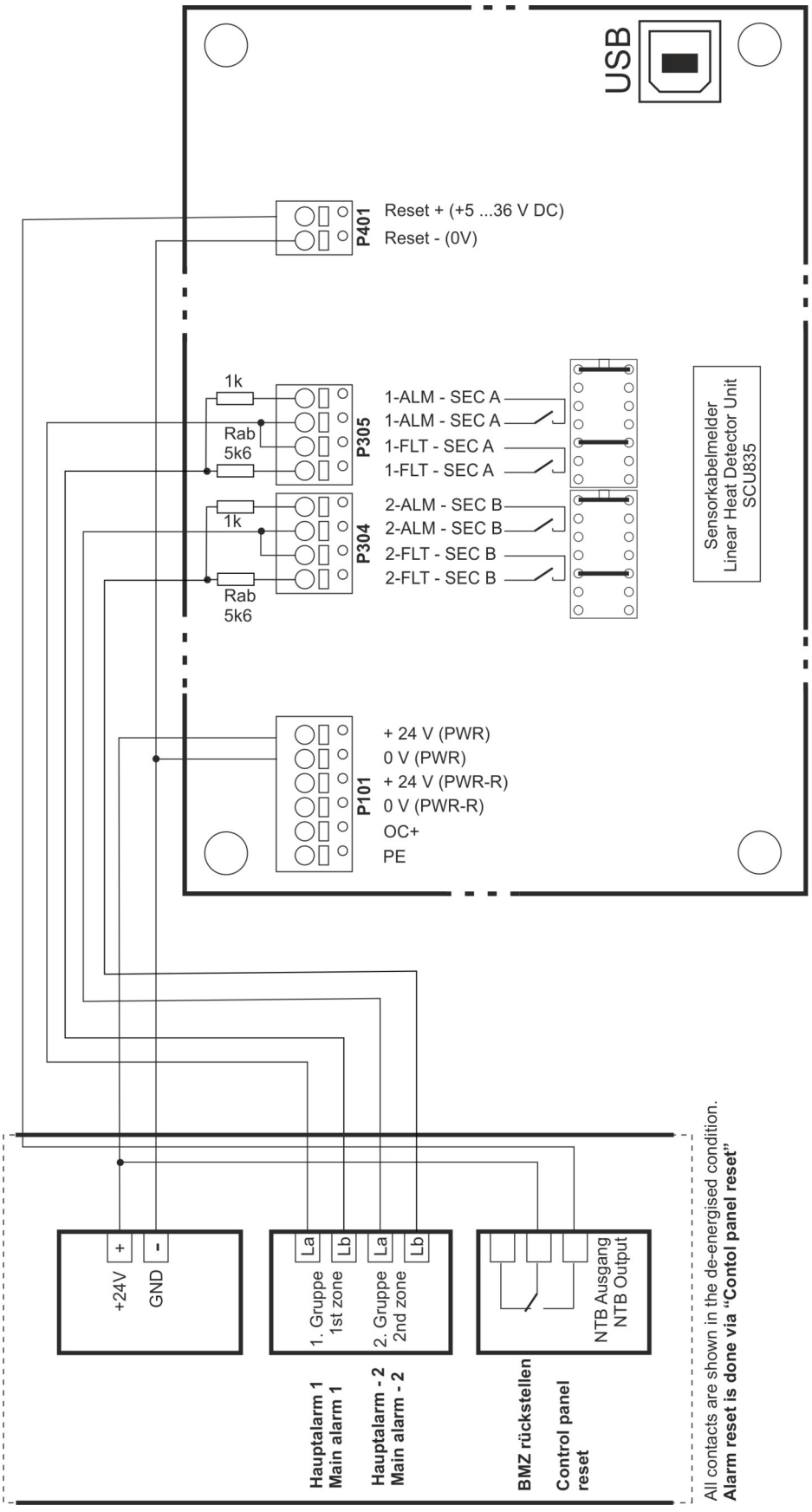
All contacts are shown in the de-energised condition.
Alarm reset is done via "Contol panel reset"

2.12.3.2 Connection - resetting by means of relay contact



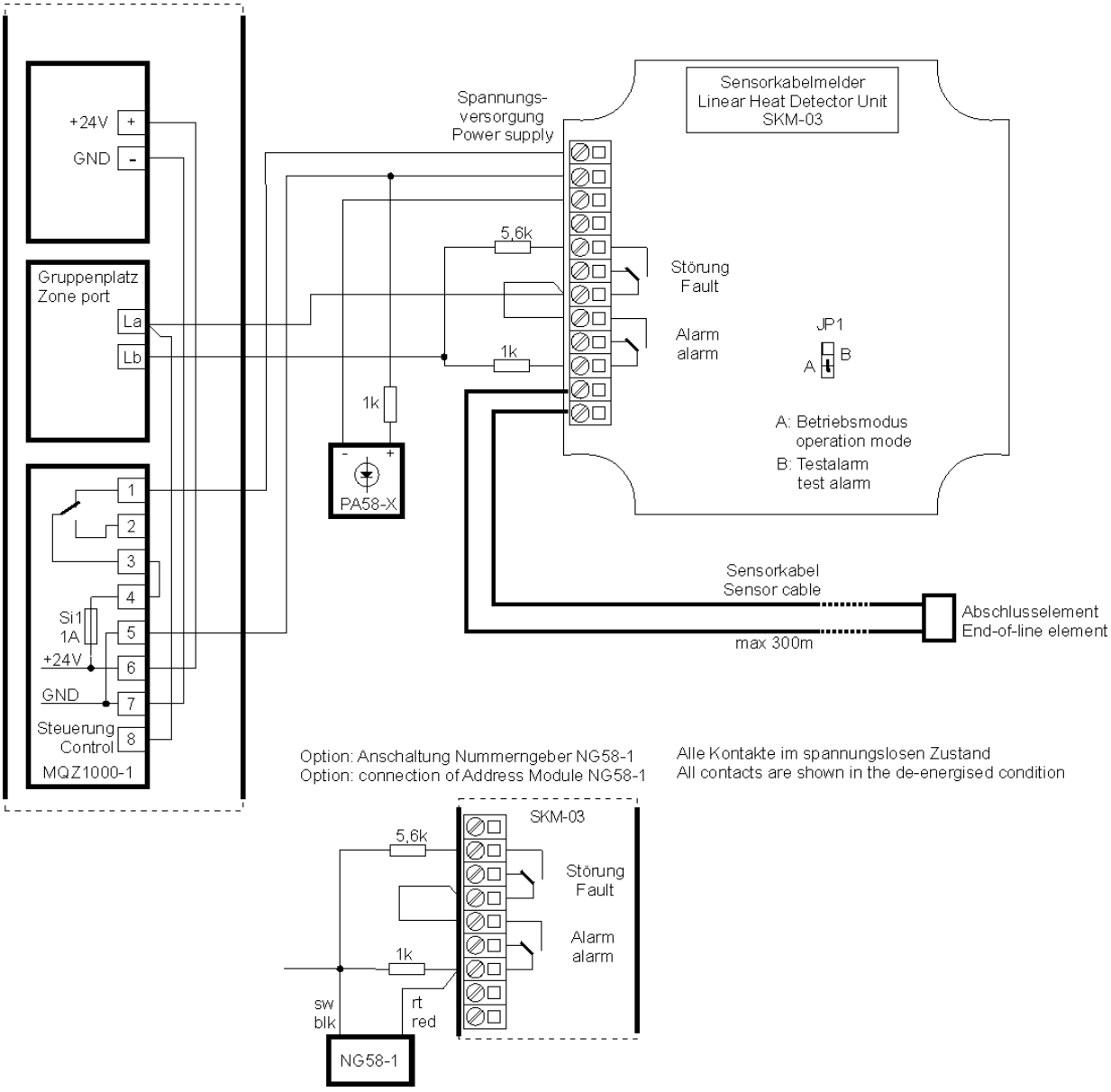
2.12.4 Linear Heat Detector Unit SCU835-2

2.12.4.1 Connection - resetting by means of relay contact

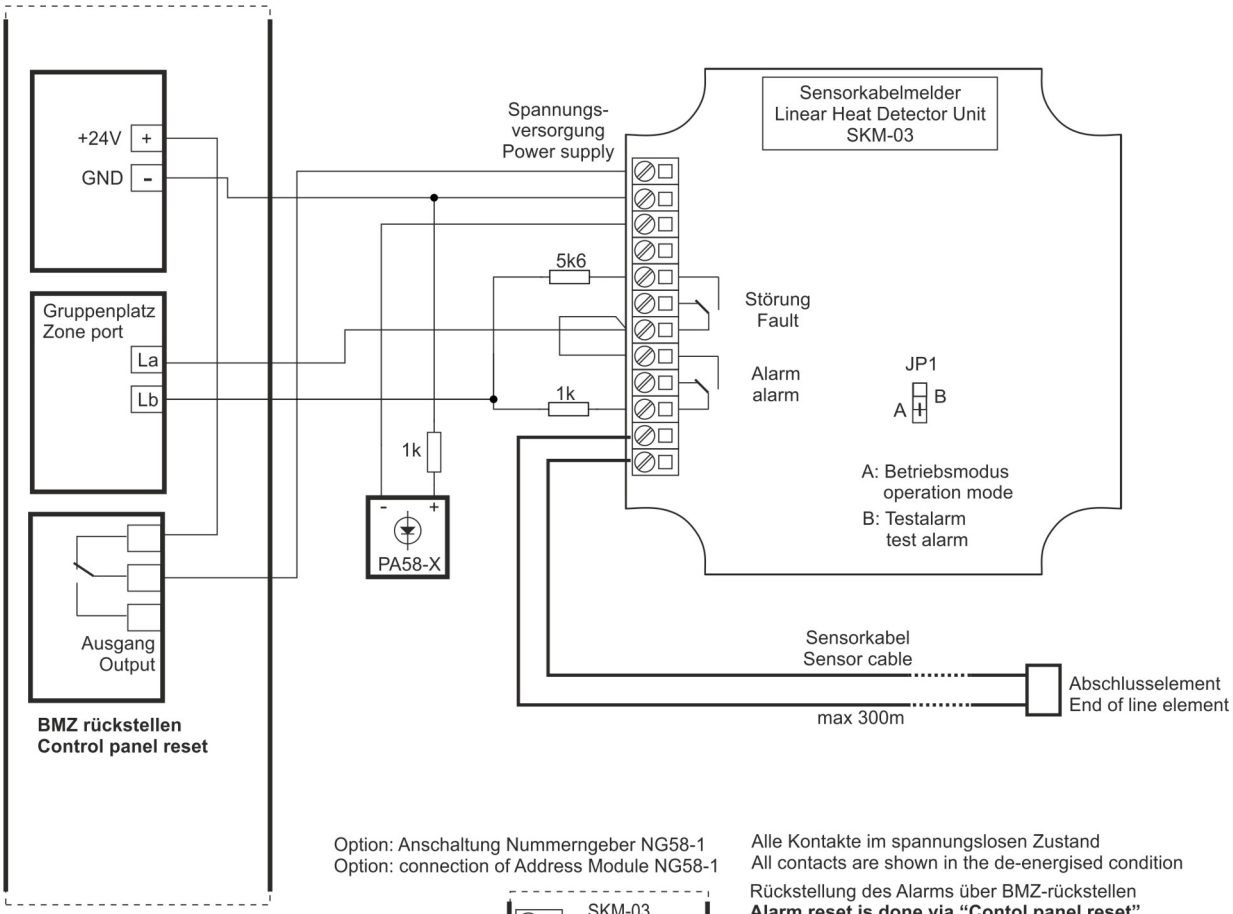


2.12.5 Linear Heat Detector Unit SKM-03

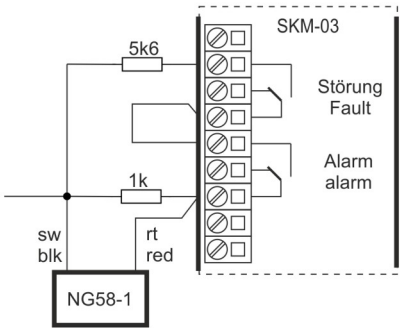
2.12.5.1 Connection with MQZ1000-1



2.12.5.2 Connection - resetting by means of relay contact



Option: Anschaltung Nummerngeber NG58-1
Option: connection of Address Module NG58-1

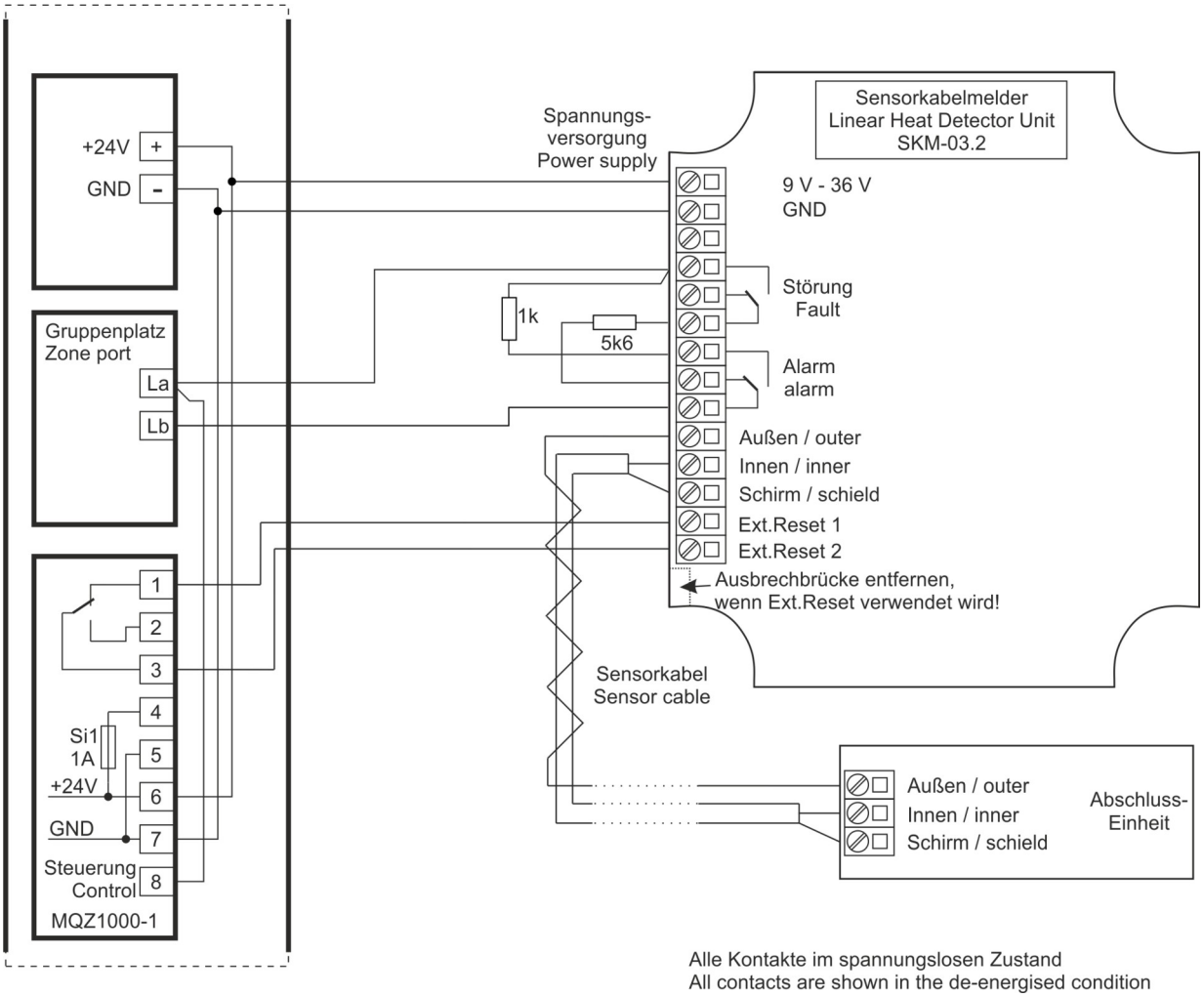


Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

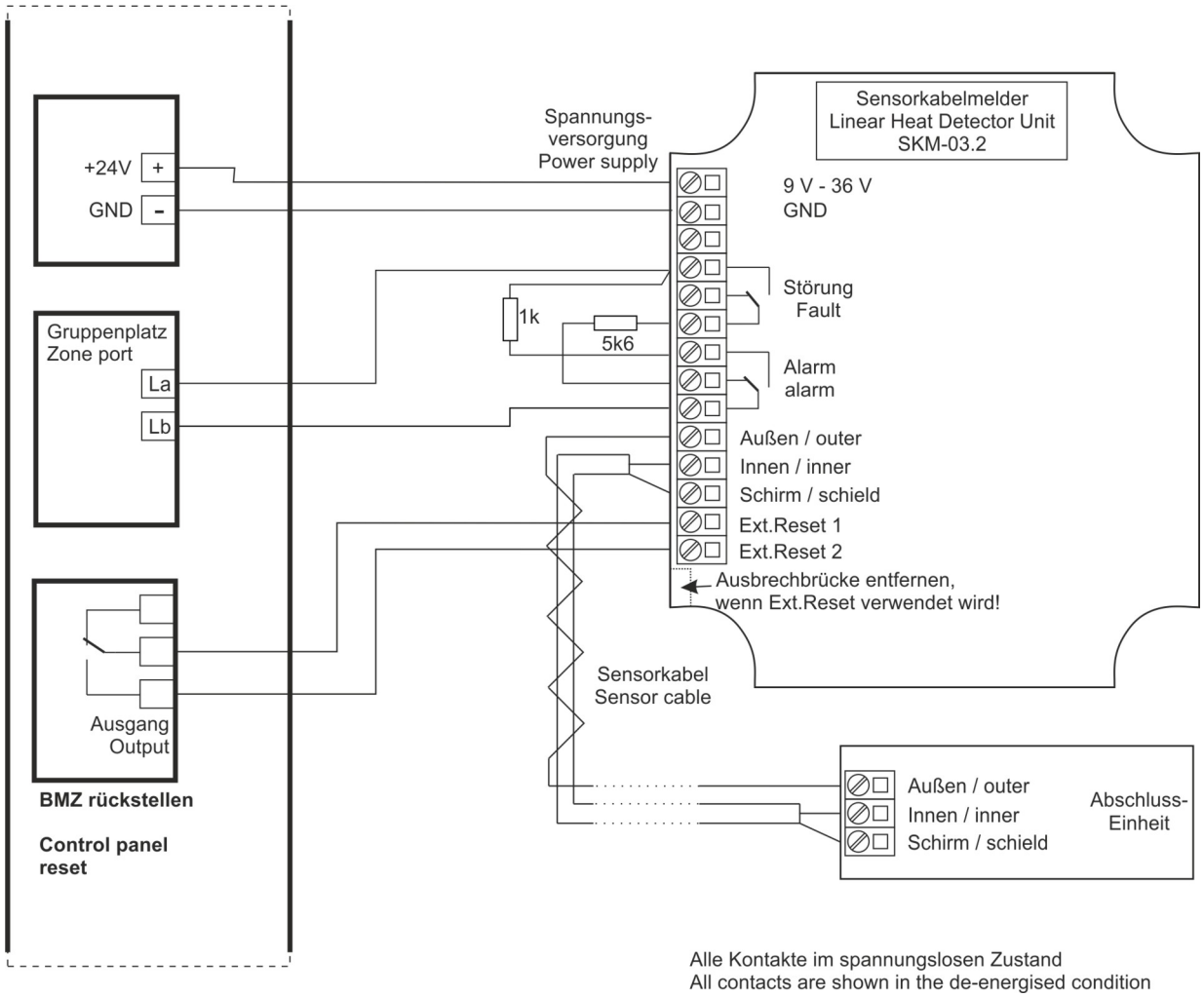
Rückstellung des Alarms über BMZ-rückstellen
Alarm reset is done via "Contol panel reset"

2.12.6 Linear Heat Detector Unit SKM-03.2

2.12.6.1 Connection with MQZ1000-1

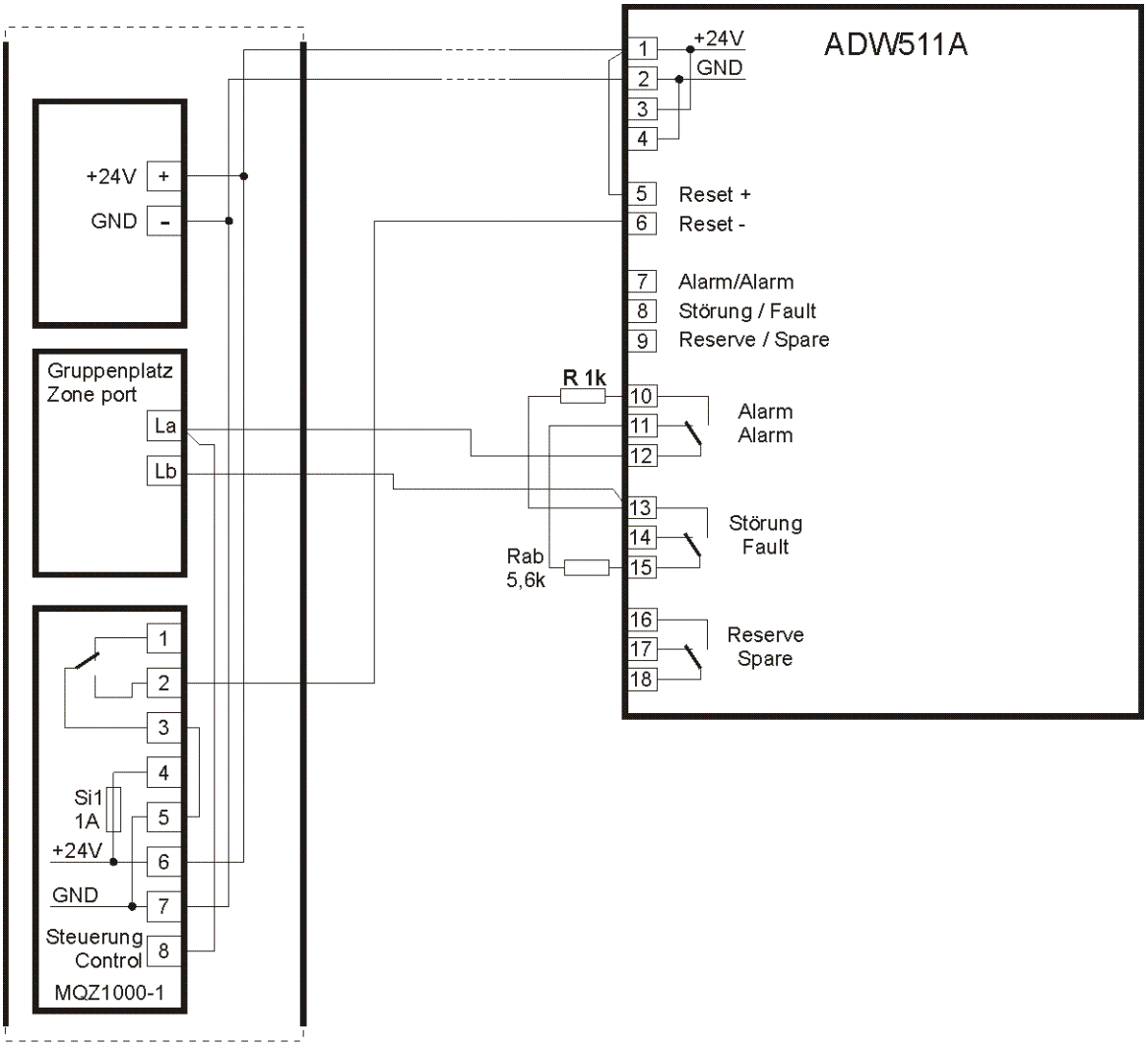


2.12.6.2 Connection - resetting by means of relay contact

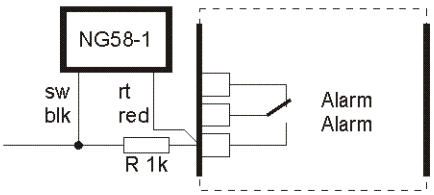


2.12.7 Linear Heat Detector Unit ADW511A

2.12.7.1 Connection with MQZ1000-1



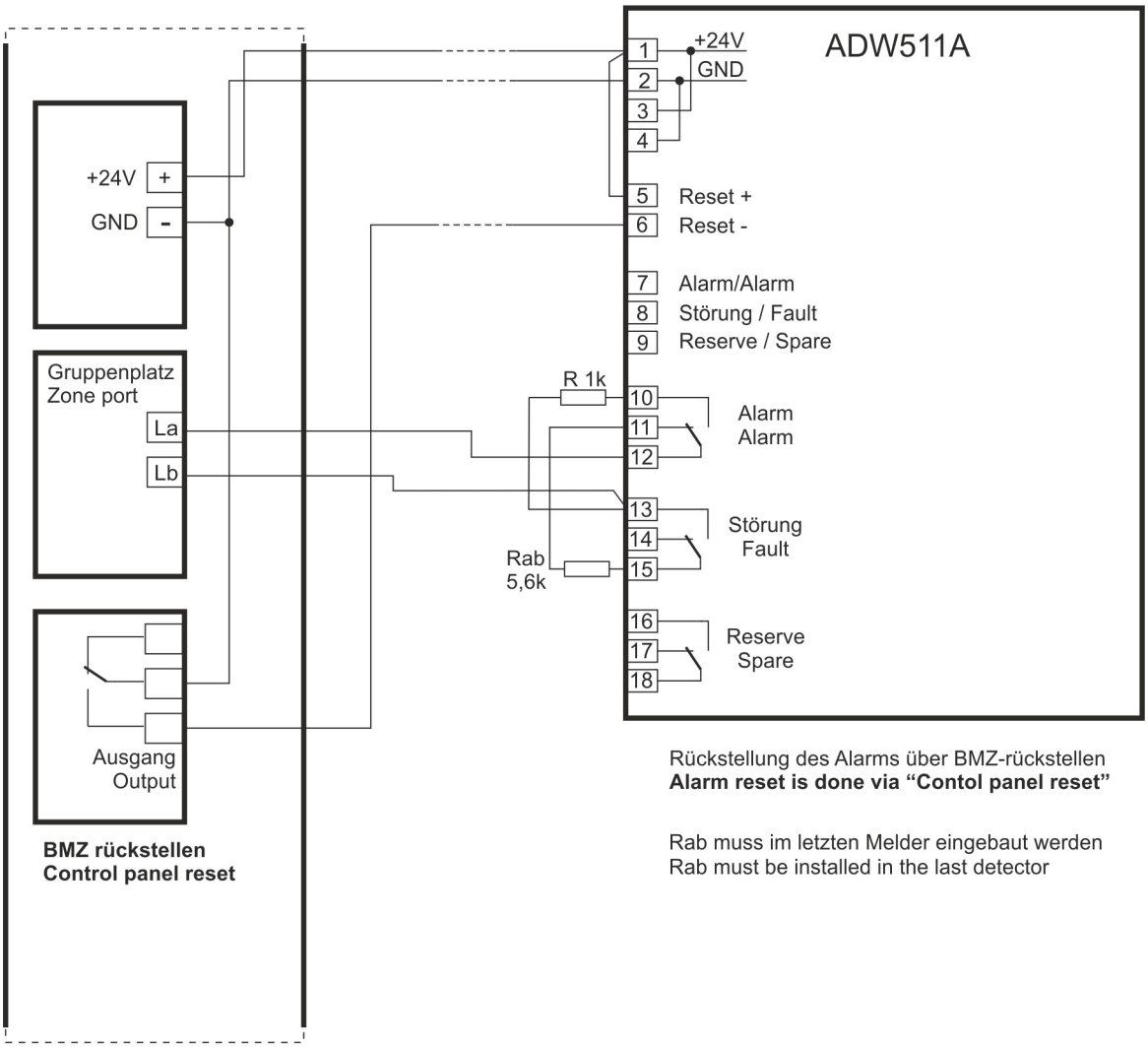
Option: Anschaltung Nummerngeber NG58-1
Option: connection of Address Module NG58-1



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

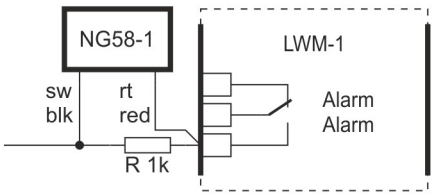
2.12.7.2 Connection - resetting by means of relay contact



Rückstellung des Alarms über BMZ-rückstellen
Alarm reset is done via "Contol panel reset"

Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

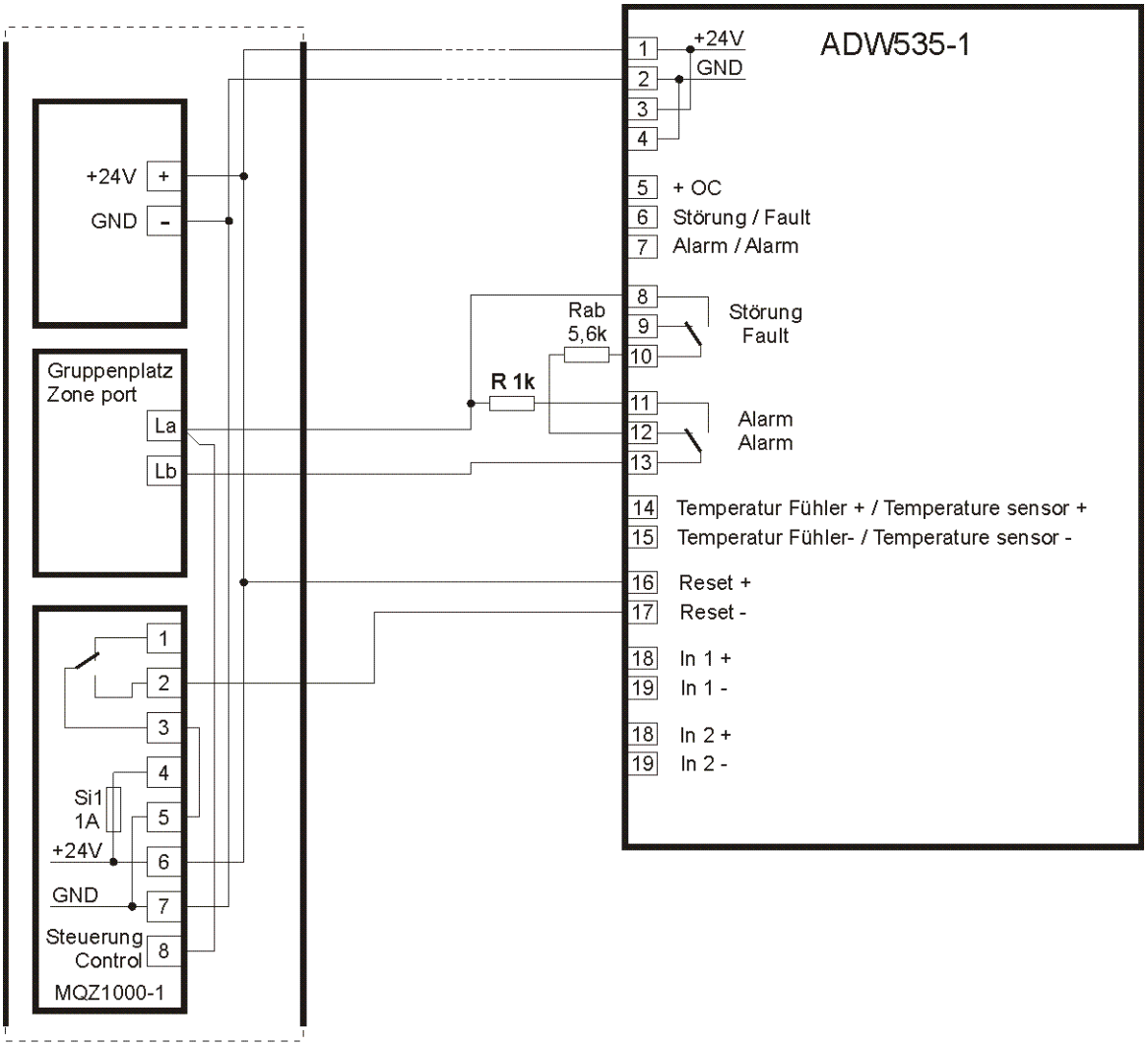
Option: Anschaltung Nummerngeber NG58-1
Option: connection of Address Module NG58-1



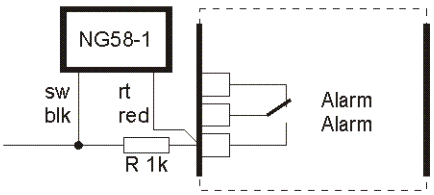
Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

2.12.8 Linear Heat Detector Unit ADW535

2.12.8.1 Connection with MQZ1000-1



Option: Anschaltung Nummerngeber NG58-1
Option: connection of Address Module NG58-1

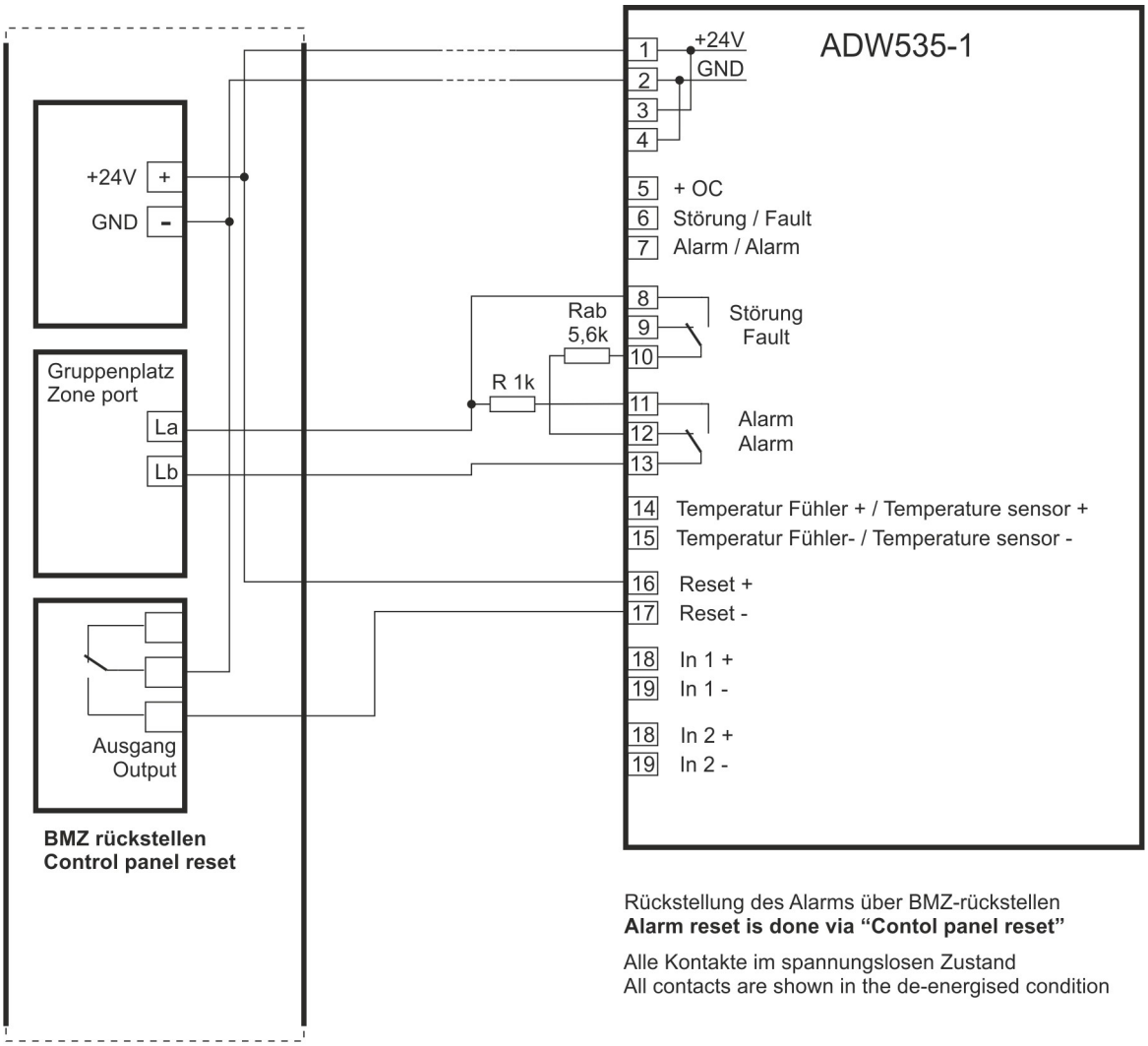


Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rab muss im letzten Melder eingebaut werden
Rab must be installed in the last detector

The ADW535-2 differs from the ADW535-1 in that it has an additional printed circuit board (LEB35) for the signal forwarding (Alarm / Fault) of the second channel.

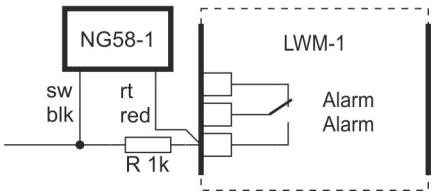
2.12.8.2 Connection - resetting by means of relay contact



Rückstellung des Alarms über BMZ-rückstellen
Alarm reset is done via "Contol panel reset"

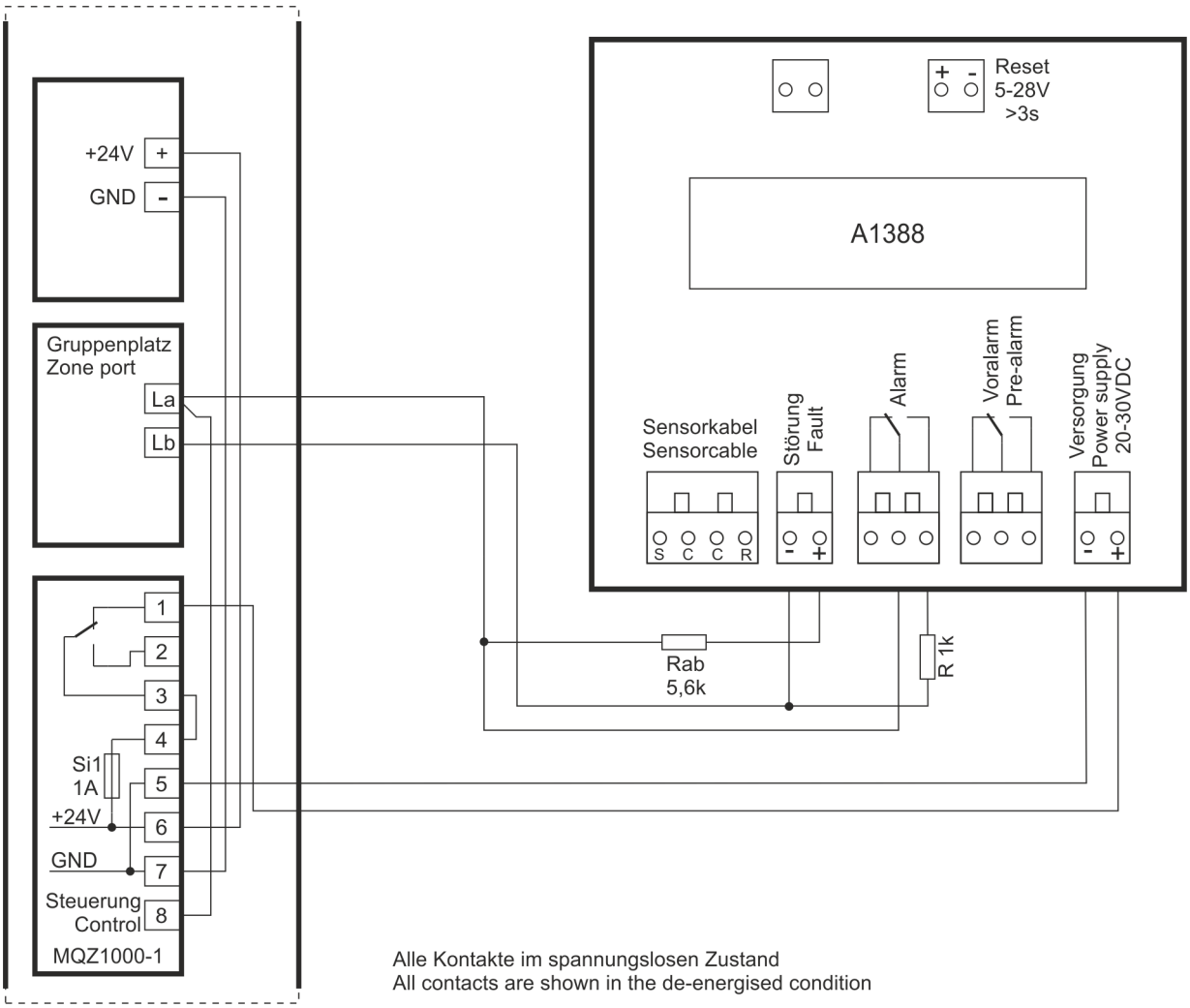
Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Option: Anschaltung Nummerngeber NG58-1
Option: connection of Address Module NG58-1



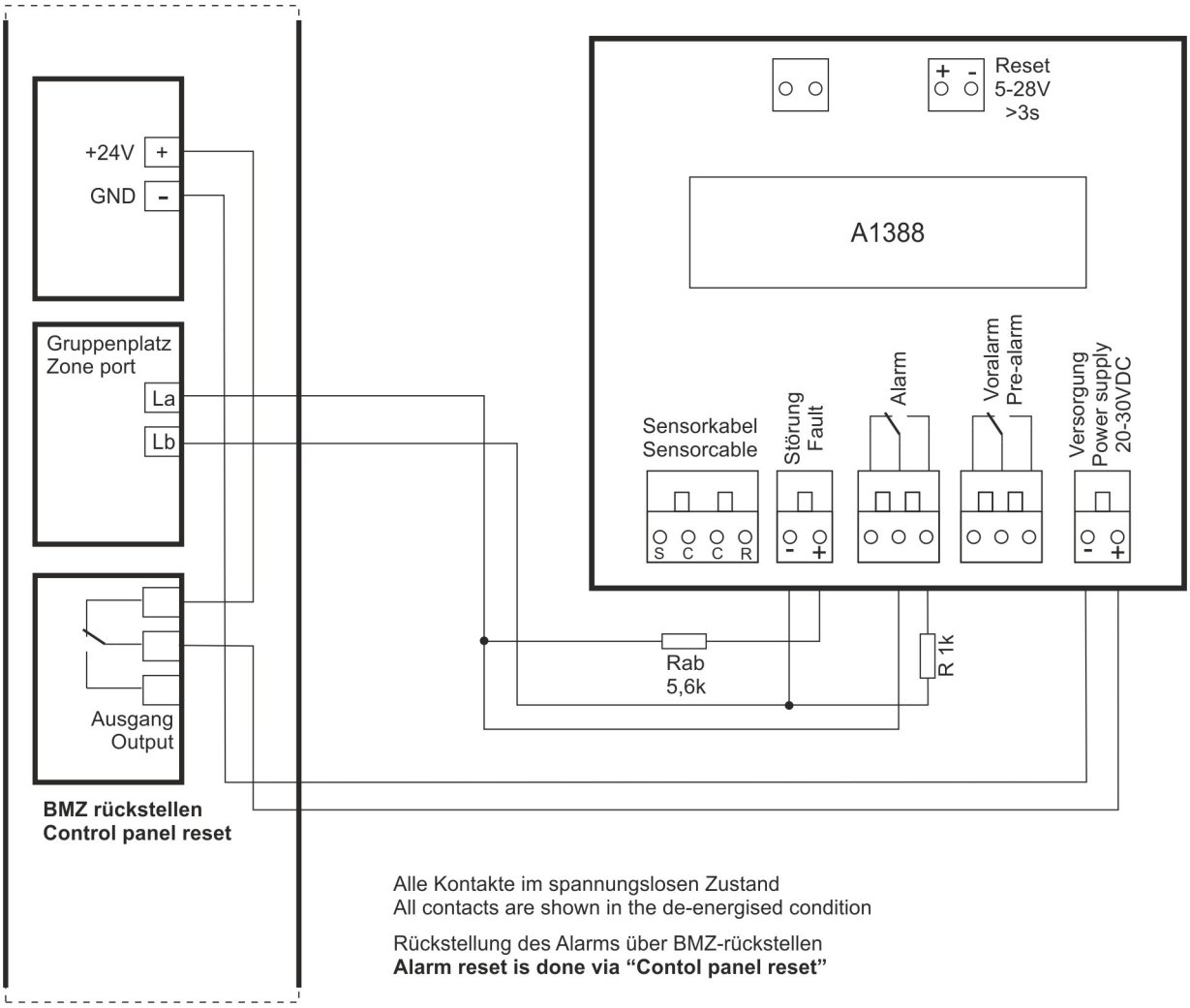
2.12.9 Linear Heat Detector Unit A1388

2.12.9.1 Connection with MQZ1000-1



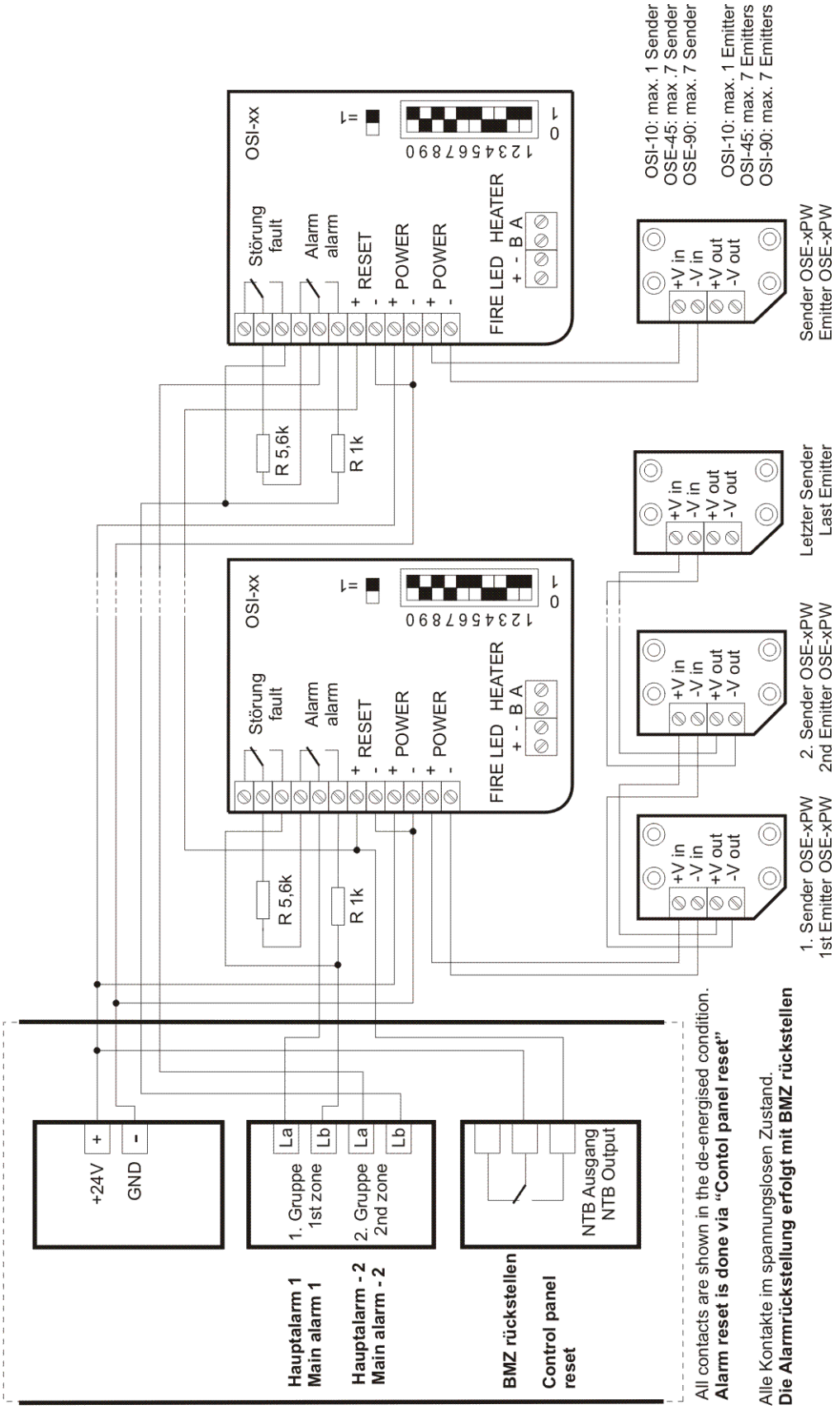
Only one A1388 may be connected to a conventional zone port. The detector reset must be performed via a voltage reset. The polarity of the wiring must be observed. The wiring of the sensor cable can be found in the product manual.

2.12.9.2 Connection - resetting by means of relay contact



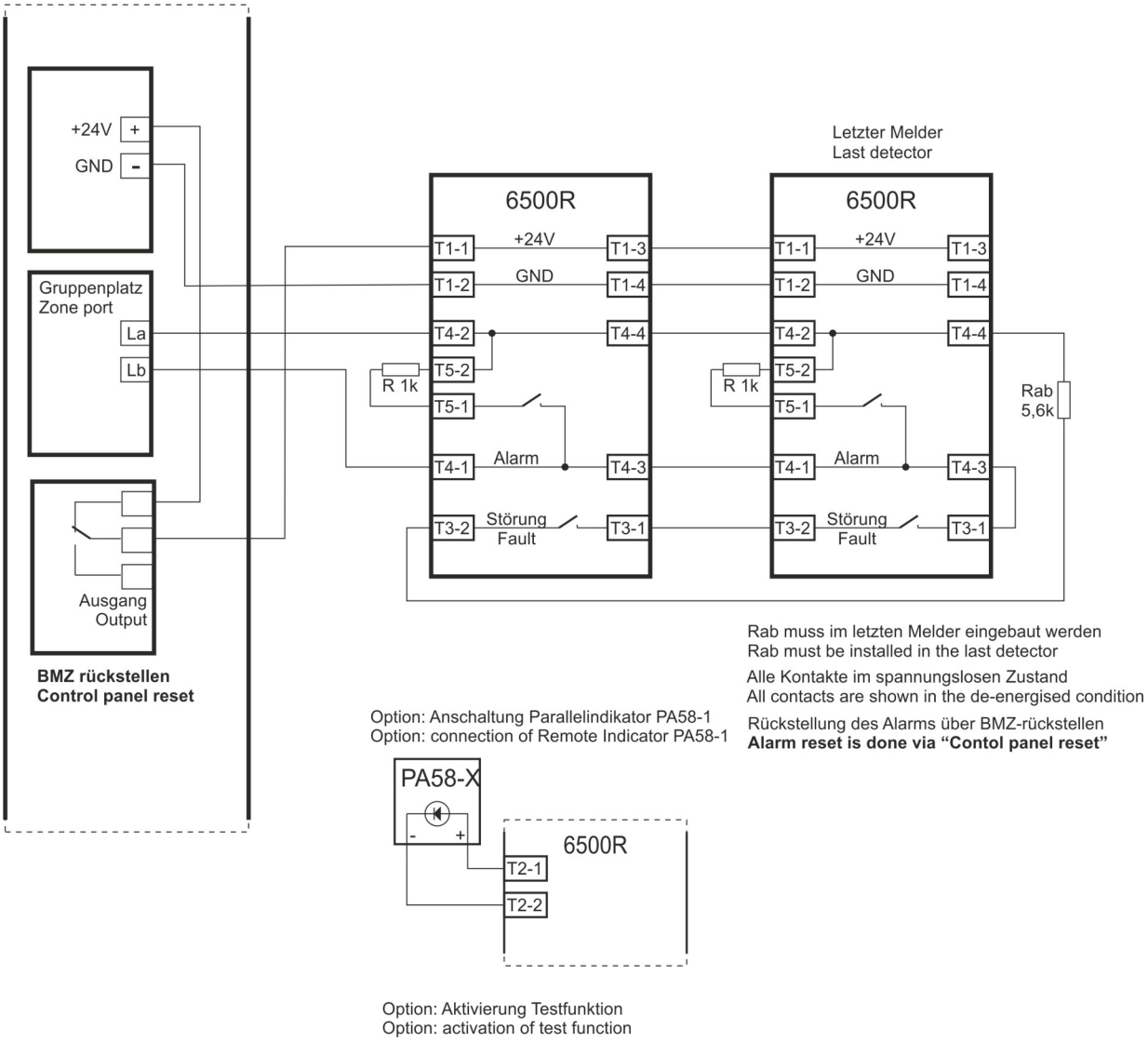
Only one A1388 may be connected to a conventional line, and the resetting must be carried out by means of a voltage reset. The polarity of the cabling has to be correct. For the connection of the sensor cable, please refer to the documentation that accompanies the product.

2.12.10 Beam Smoke Detector OSID



2.12.11 Beam Smoke Detector 6500R/RS

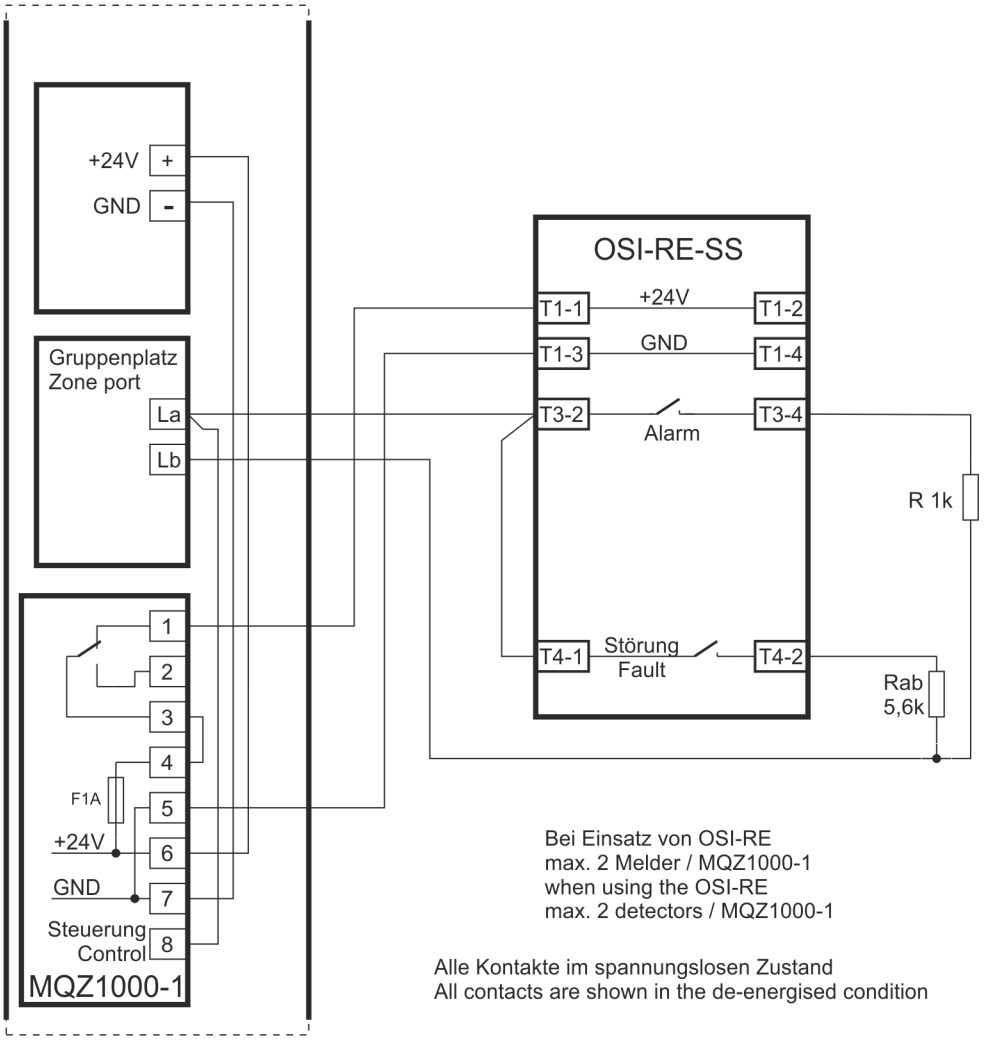
2.12.11.1 Connection - resetting by means of relay contact



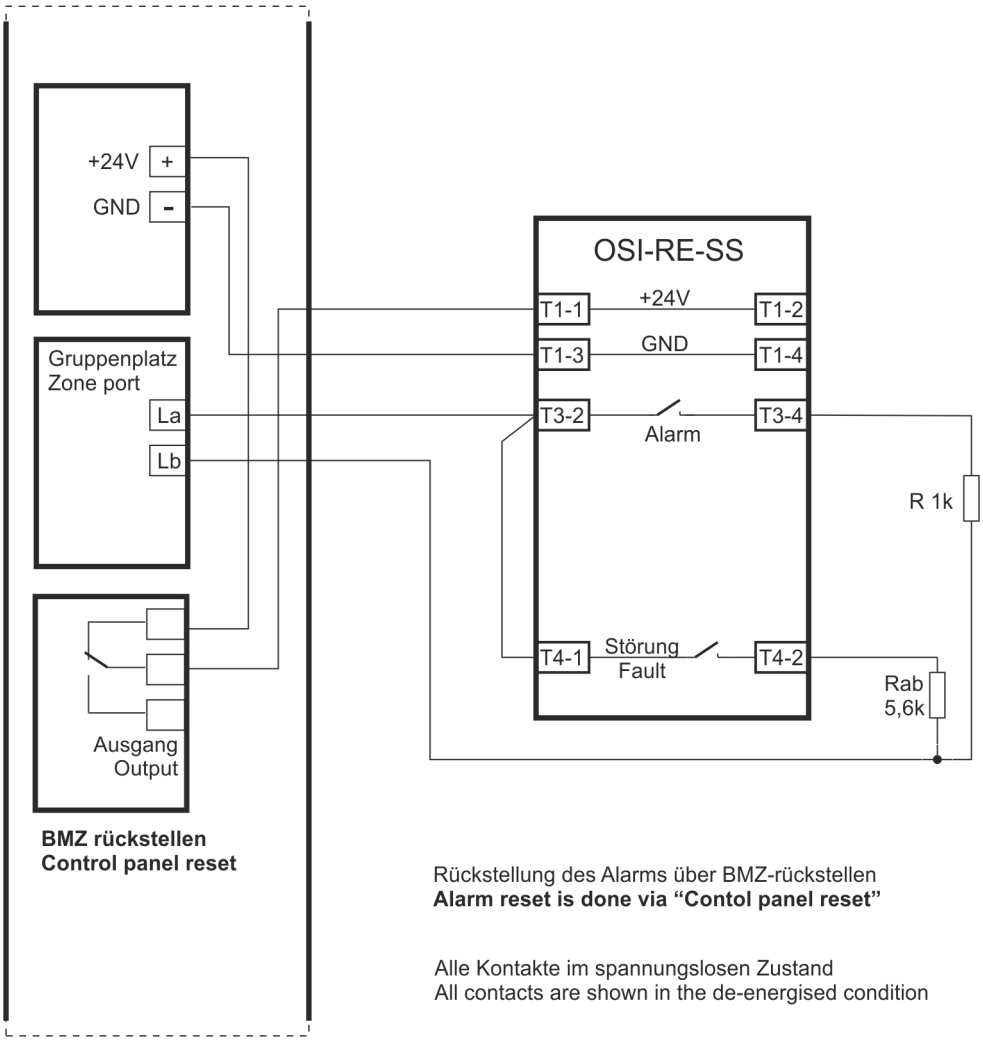
Please note that if the detector zone is disabled, all detectors of this zone are no longer working! An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

2.12.12 Beam Smoke Detector – OSI-RE-SS

2.12.12.1 Connection with MQZ1000-1

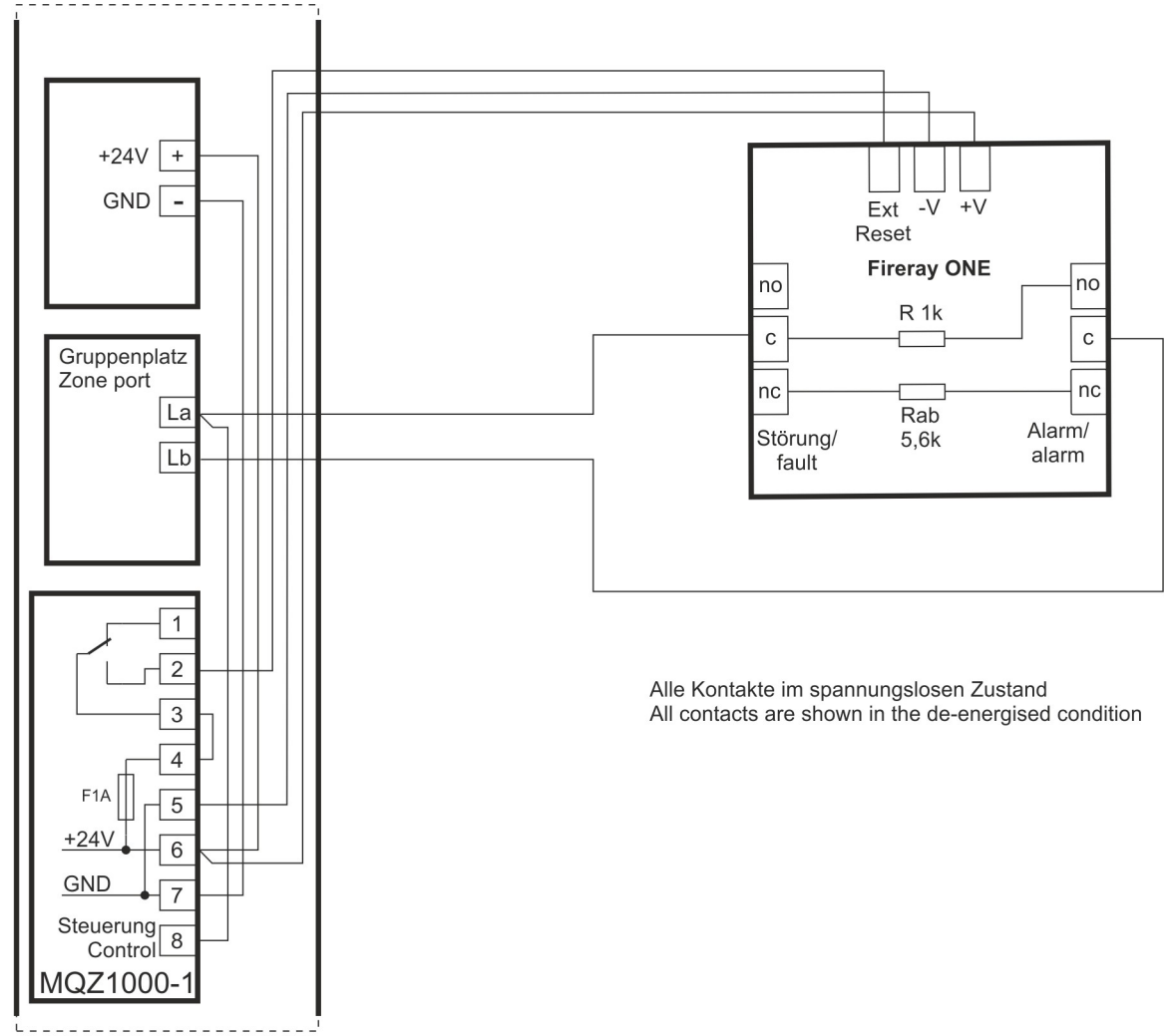


2.12.12.2 Connection - resetting by means of relay contact



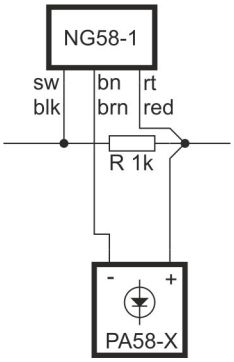
2.12.13 Beam Smoke Detector - Fireray ONE

2.12.13.1 Connection with MQZ1000-1



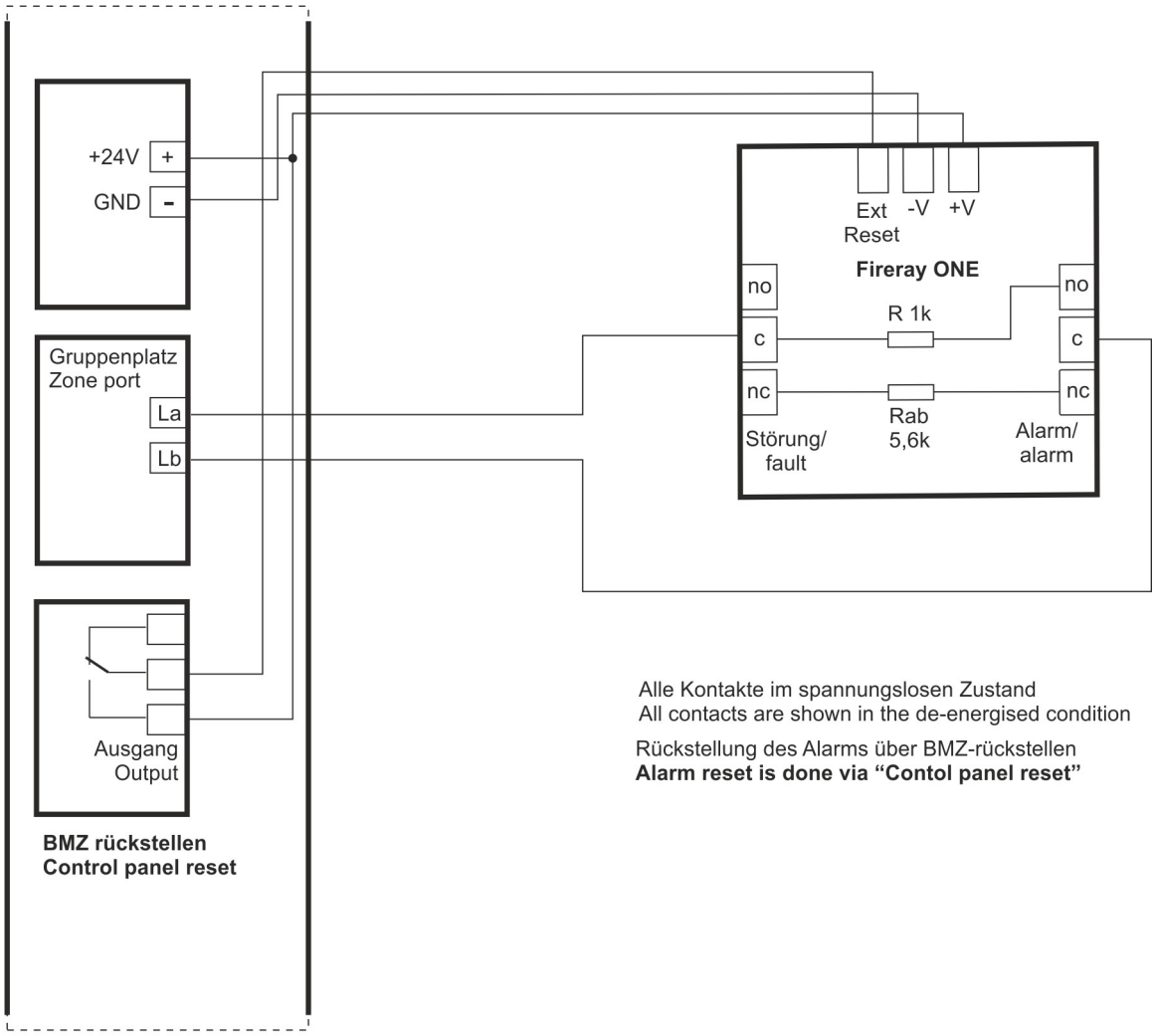
Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Option: Anschaltung Nummerngeber NG58-1
und Parallelindikator PA58-1
Option: connection of Address Module NG58-1
and Remote Indicator PA58-1

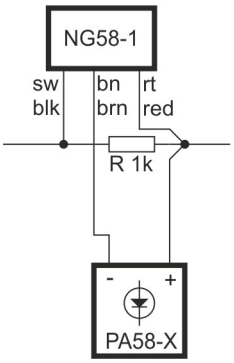


An alarm verification according to EN 54-2 Type A is only permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone) if the detector is reset via the Ext RESET input of the detector – see the drawing.

2.12.13.2 Connection - resetting by means of relay contact



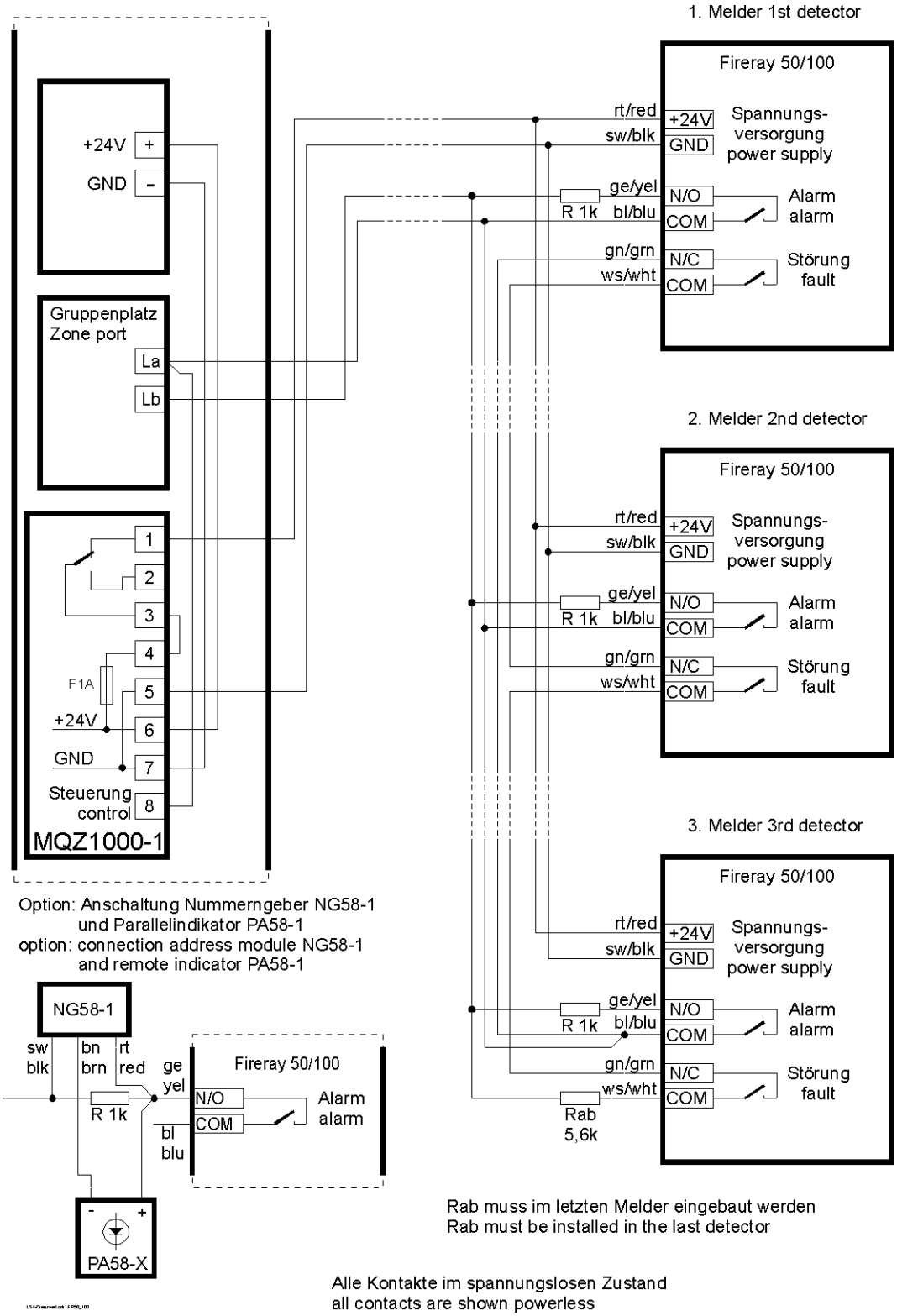
Option: Anschaltung Nummerngeber NG58-1
und Parallelindikator PA58-1
Option: connection of Address Module NG58-1
and Remote Indicator PA58-1



An alarm verification according to EN 54-2 Type A (in the case of the BC600, it is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone) is only permissible if the detector is reset via the Ext RESET input of the detector – see the drawing.

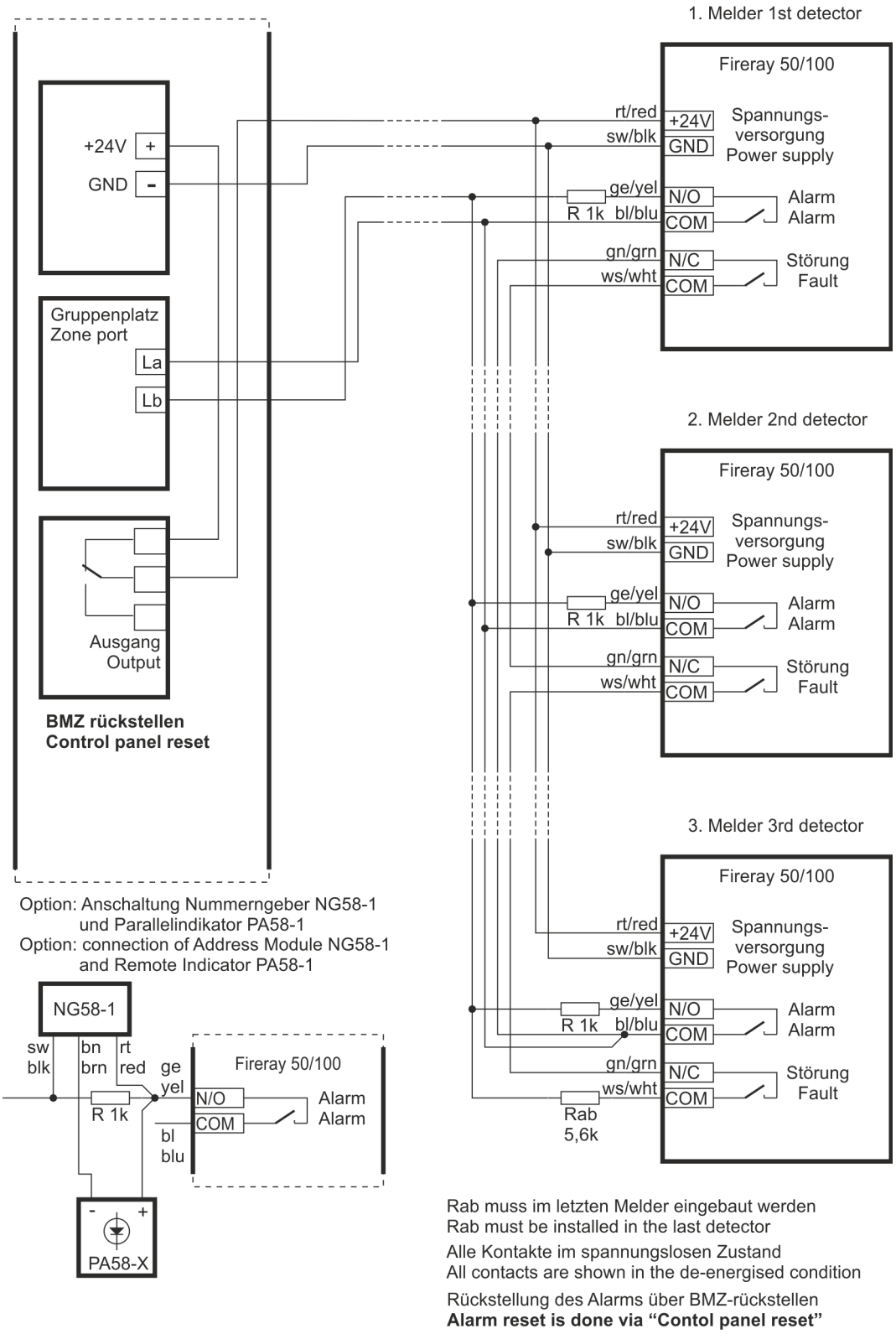
2.12.14 Beam Smoke Detector FR50/100

2.12.14.1 Connection with MQZ1000-1



Please note that if the detector zone is disabled, all detectors of this zone are no longer working! An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

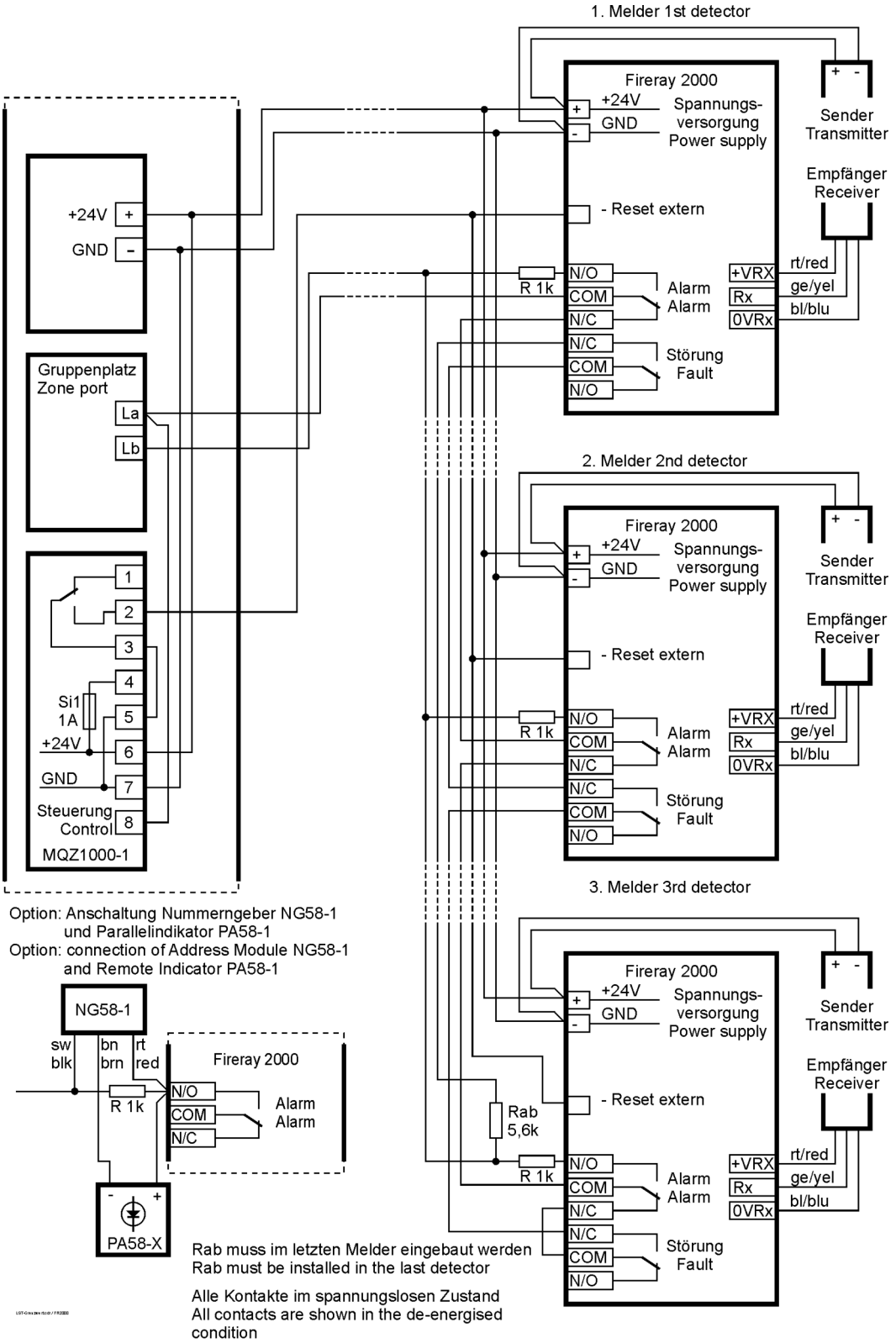
2.12.14.2 Connection - resetting by means of relay contact



Please note that if the detector zone is disabled, all detectors of this zone are no longer working! An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

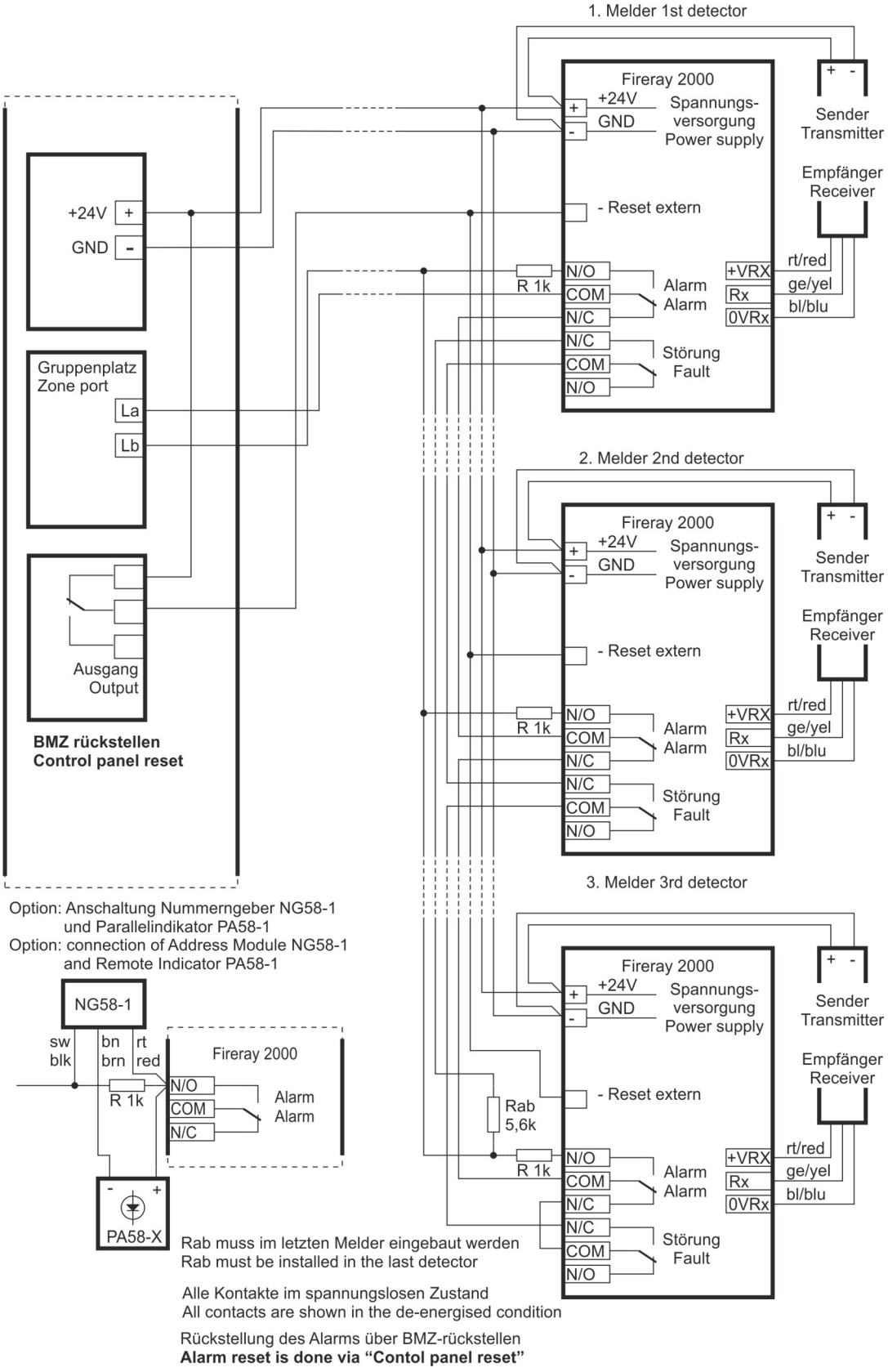
2.12.15 Beam Smoke Detector FR2000

2.12.15.1 Connection with MQZ1000-1



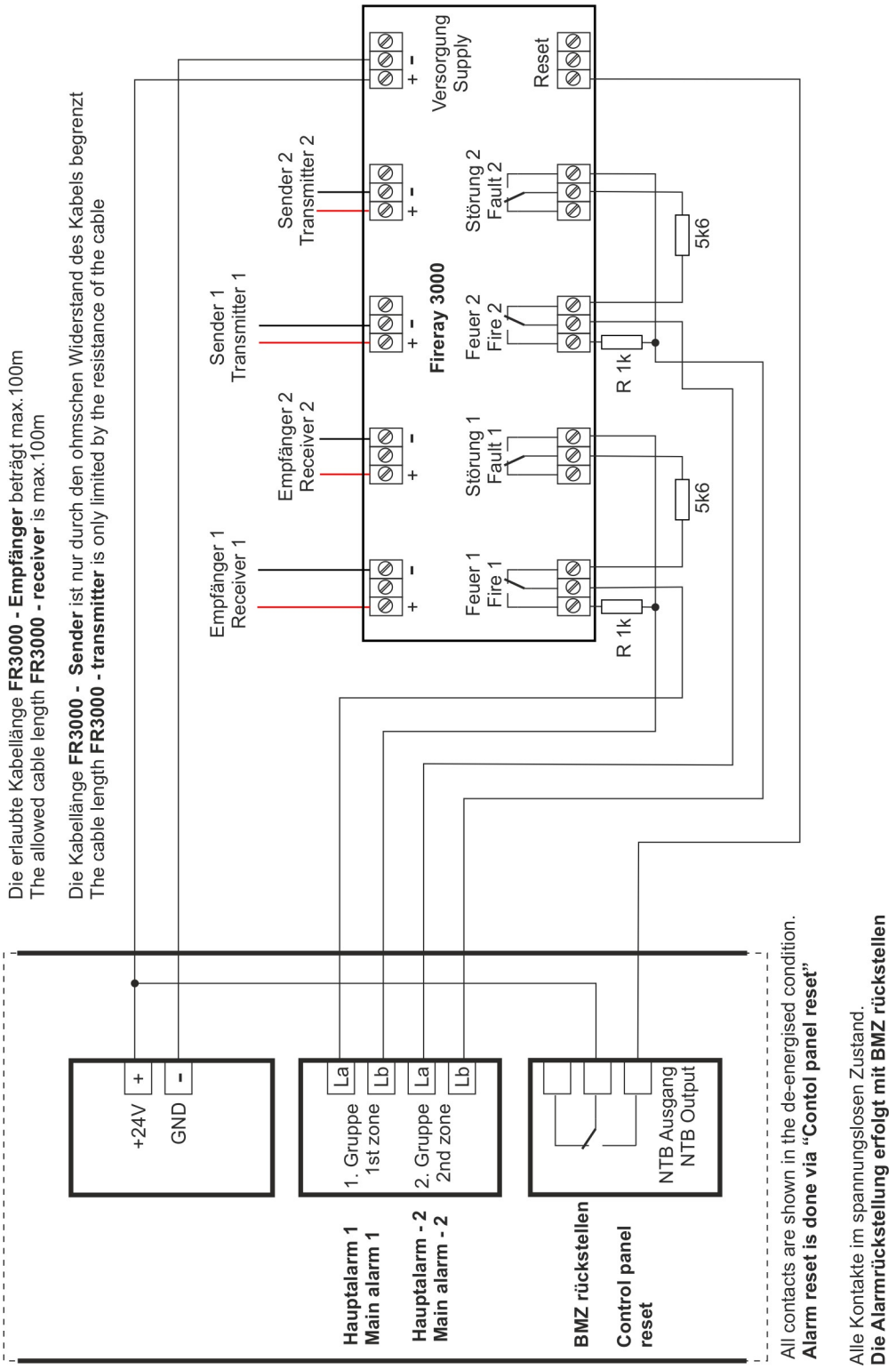
Please note that if the detector zone is disabled, all detectors of this zone are no longer working! An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

2.12.15.2 Connection - resetting by means of relay contact



Please note that if the detector zone is disabled, all detectors of this zone are no longer working! An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

2.12.16 Beam Smoke Detector FR3000



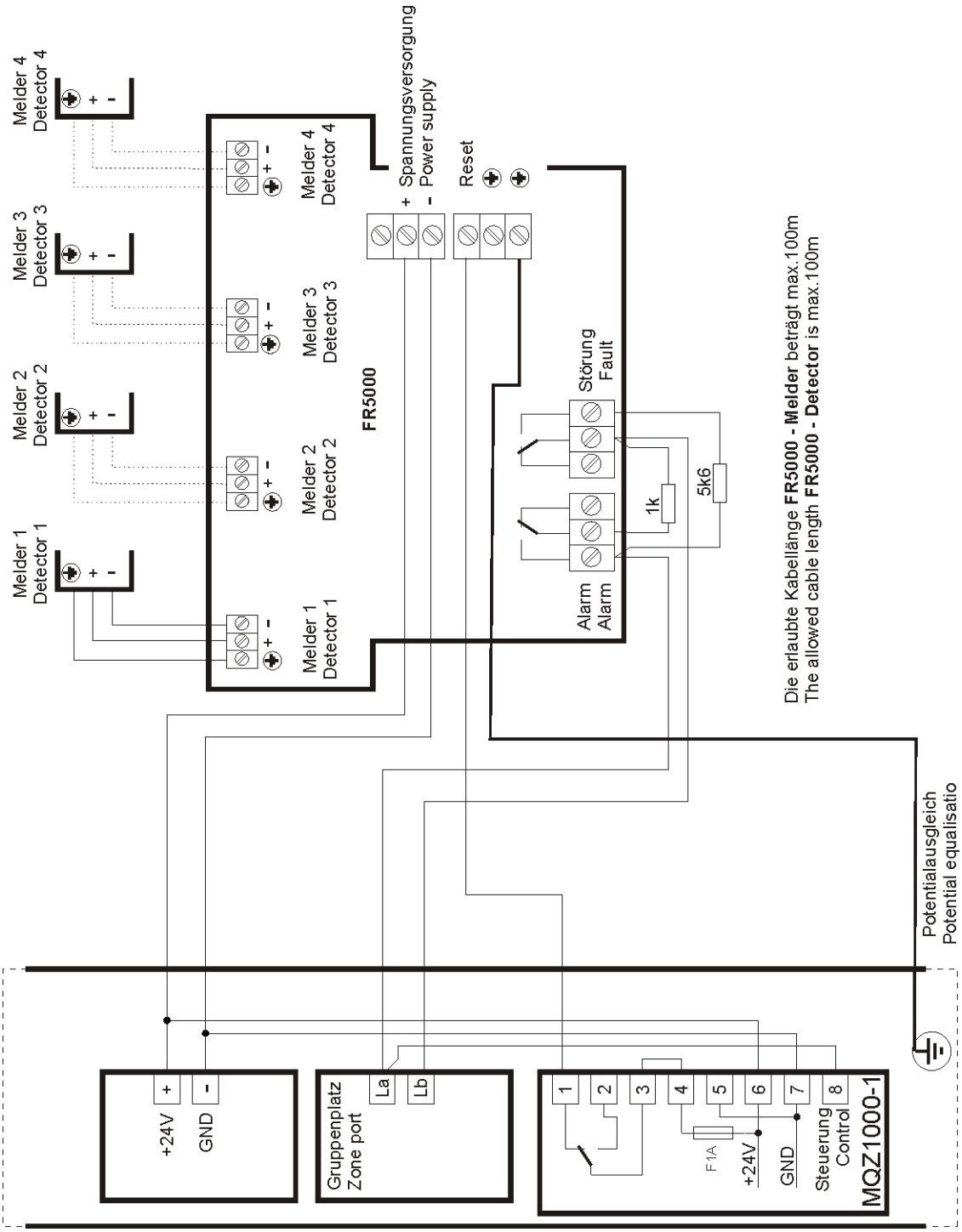
2.12.17 Beam Smoke Detector FR5000

There are two versions of the Beam Smoke Detector FR5000. The old version allows you to connect 4 detectors, and the new version has 2 detector lines with separate alarm relays.

Distinguishing features

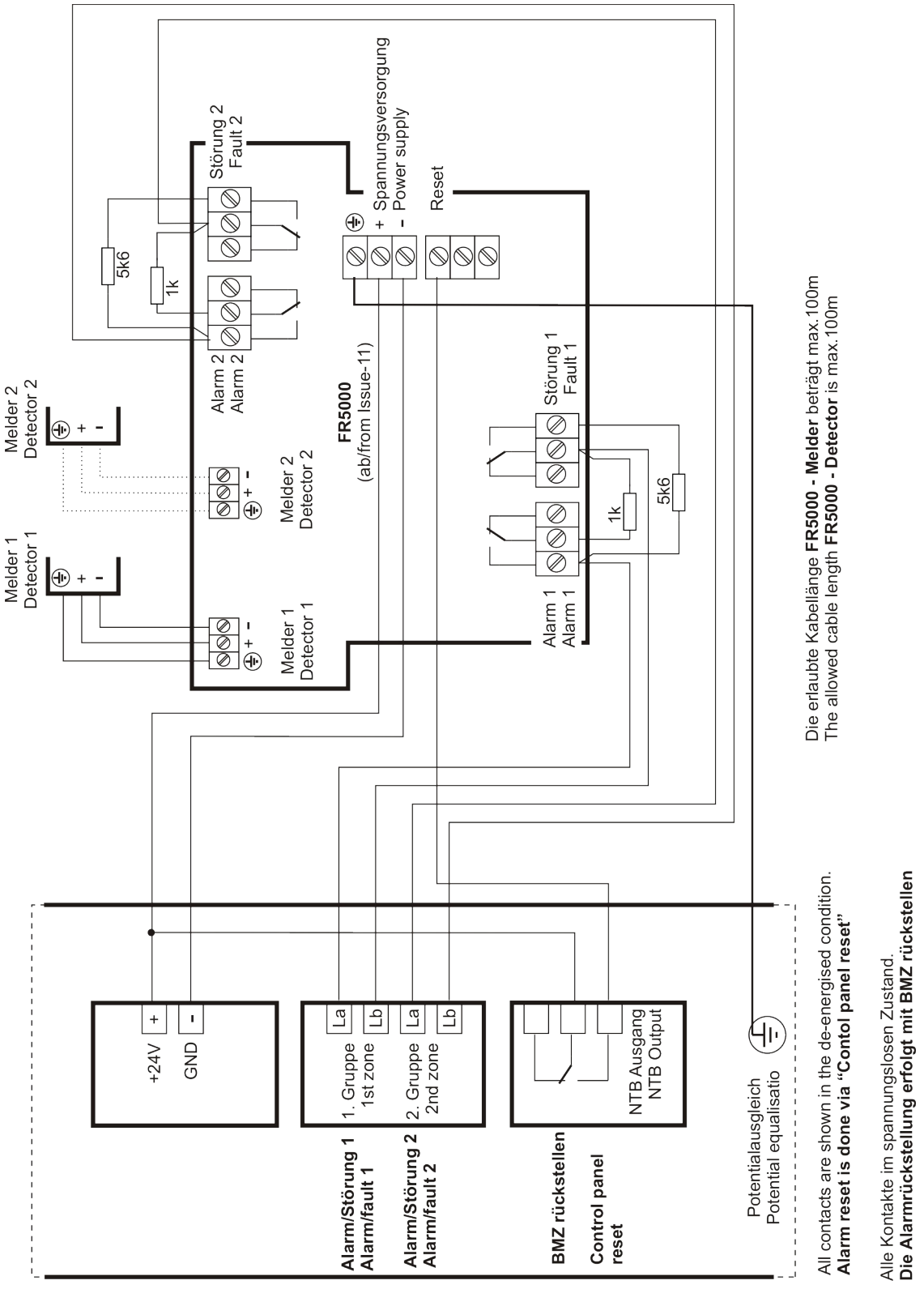
- Packaging: on the packaging of the new version of the FR5000 there is the note "Issue-11".
- Number of LEDs: the new version has 3 LEDs, the old version has 5 LEDs.

2.12.17.1 Old version



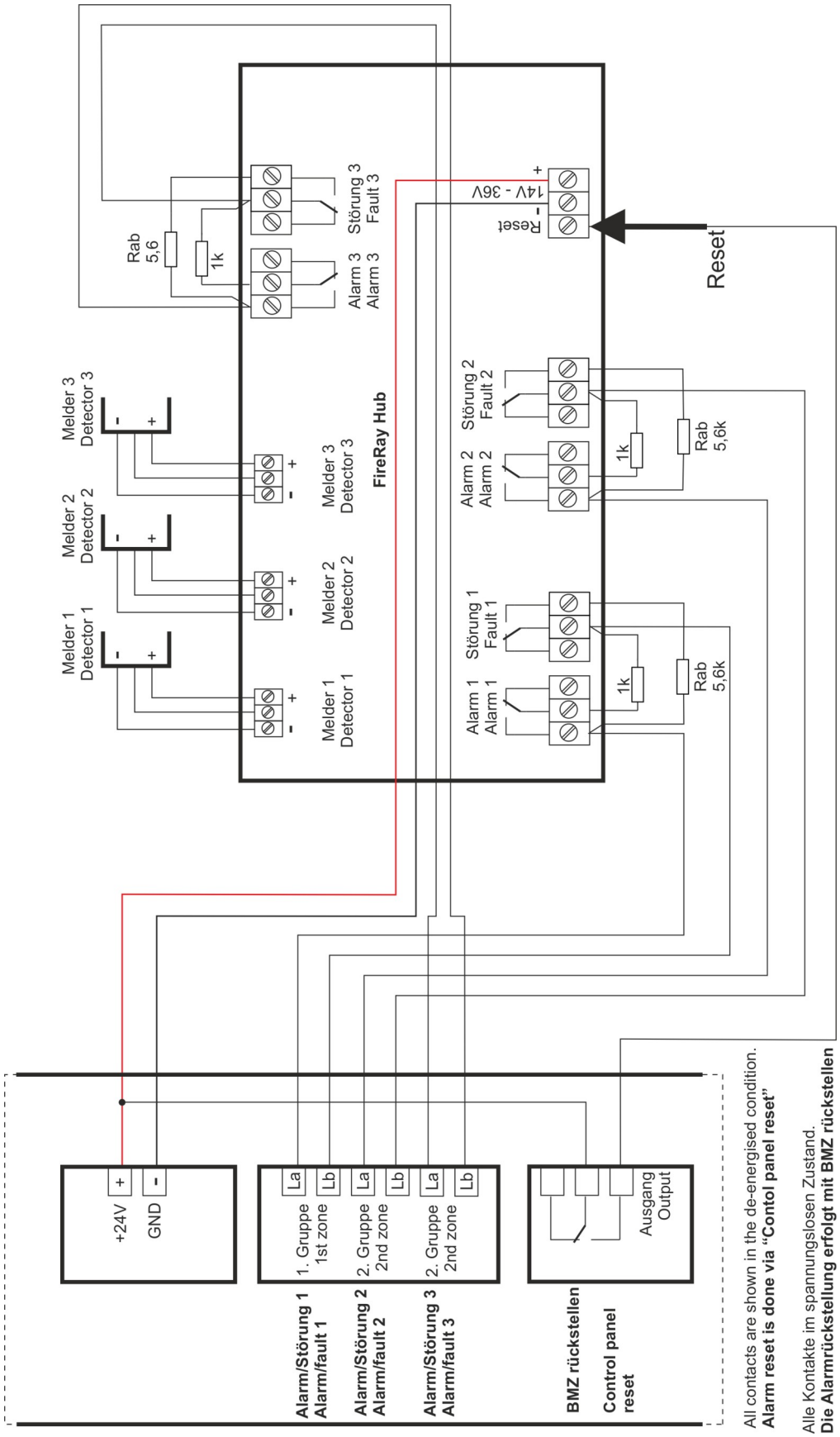
Please note that if the detector zone is disabled, the messages of the FR5000 will not be evaluated. Therefore, the detectors 1 through 4 must be used in the same fire area.

2.12.17.2 New version



Please note that if the detector zone is disabled, the messages of the FR5000 will not be evaluated. Therefore, the detectors 1 through 4 must be used in the same fire area.

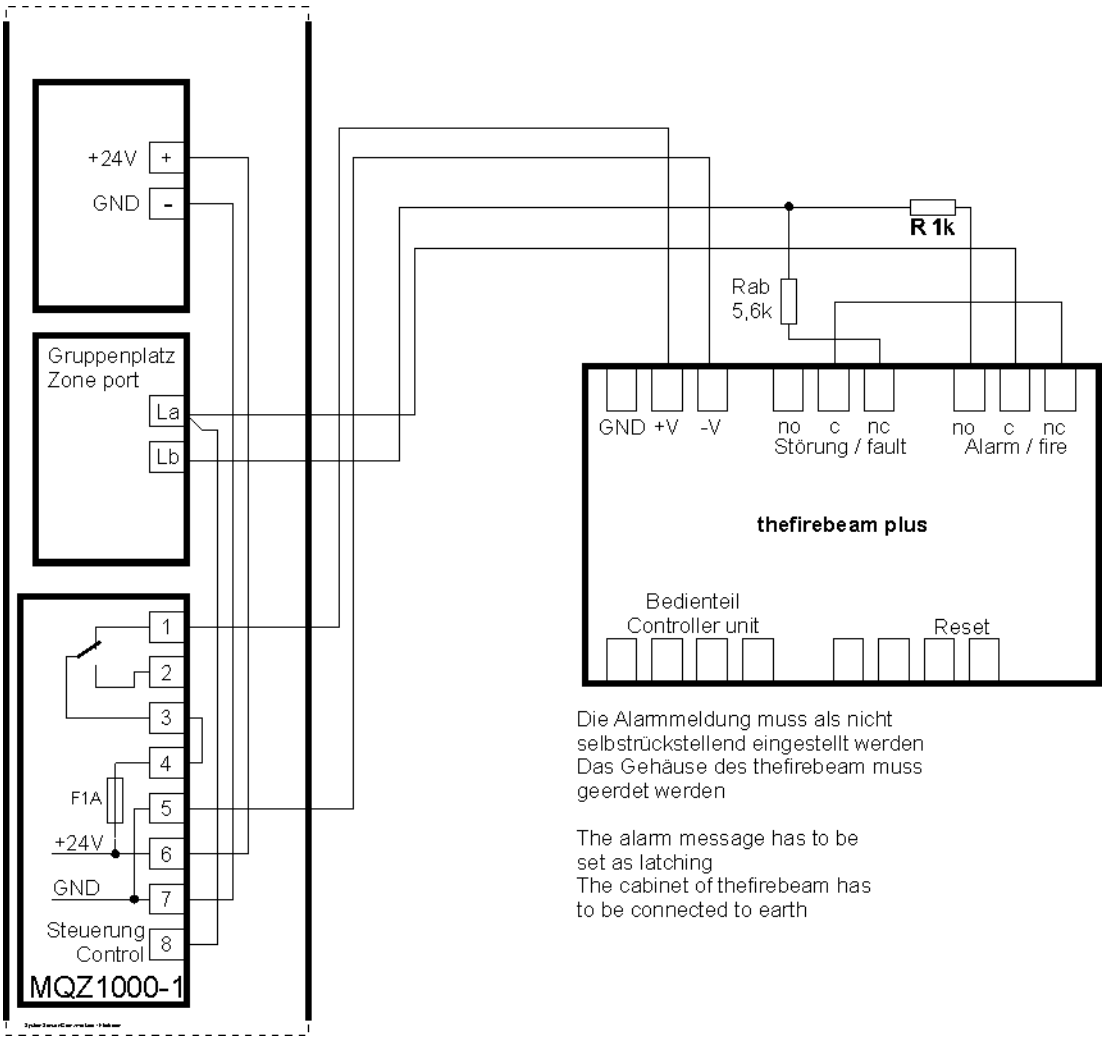
2.12.18 Beam Smoke Detector FireRay-Hub



Please note that if the detector zone is disabled, the messages of the FireRay-Hub will not be evaluated. Therefore, the detectors 1 through 3 must be used in the same fire area.

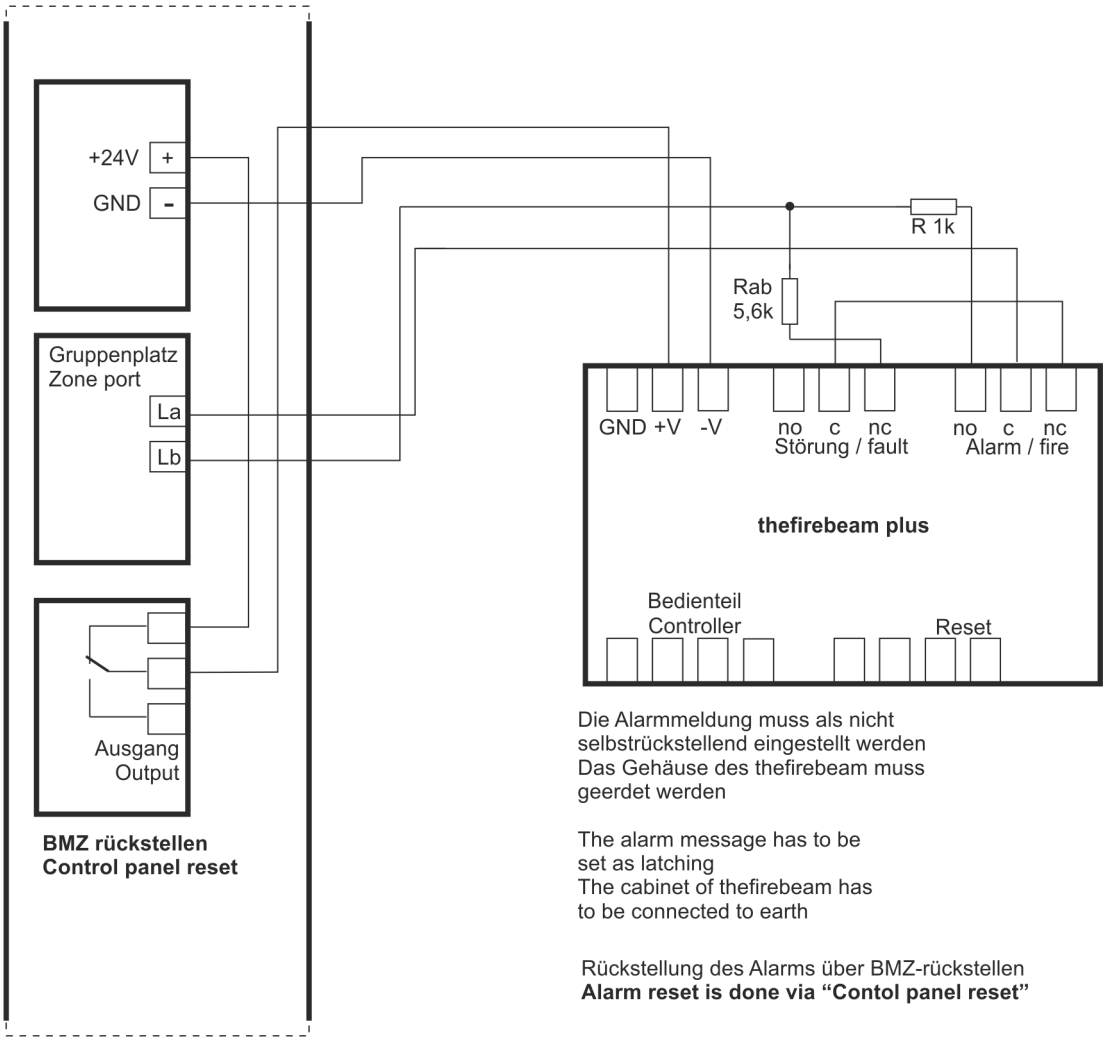
2.12.19 Beam Smoke Detector Thefirebeam plus

2.12.19.1 Connection with MQZ1000-1



After the supply voltage is applied to the detector, the fault relay will still be de-energised for 8s. Therefore, the fire detection control panel may show a temporary fault message after enabling the detector zone, after panel reset or after a power-on.

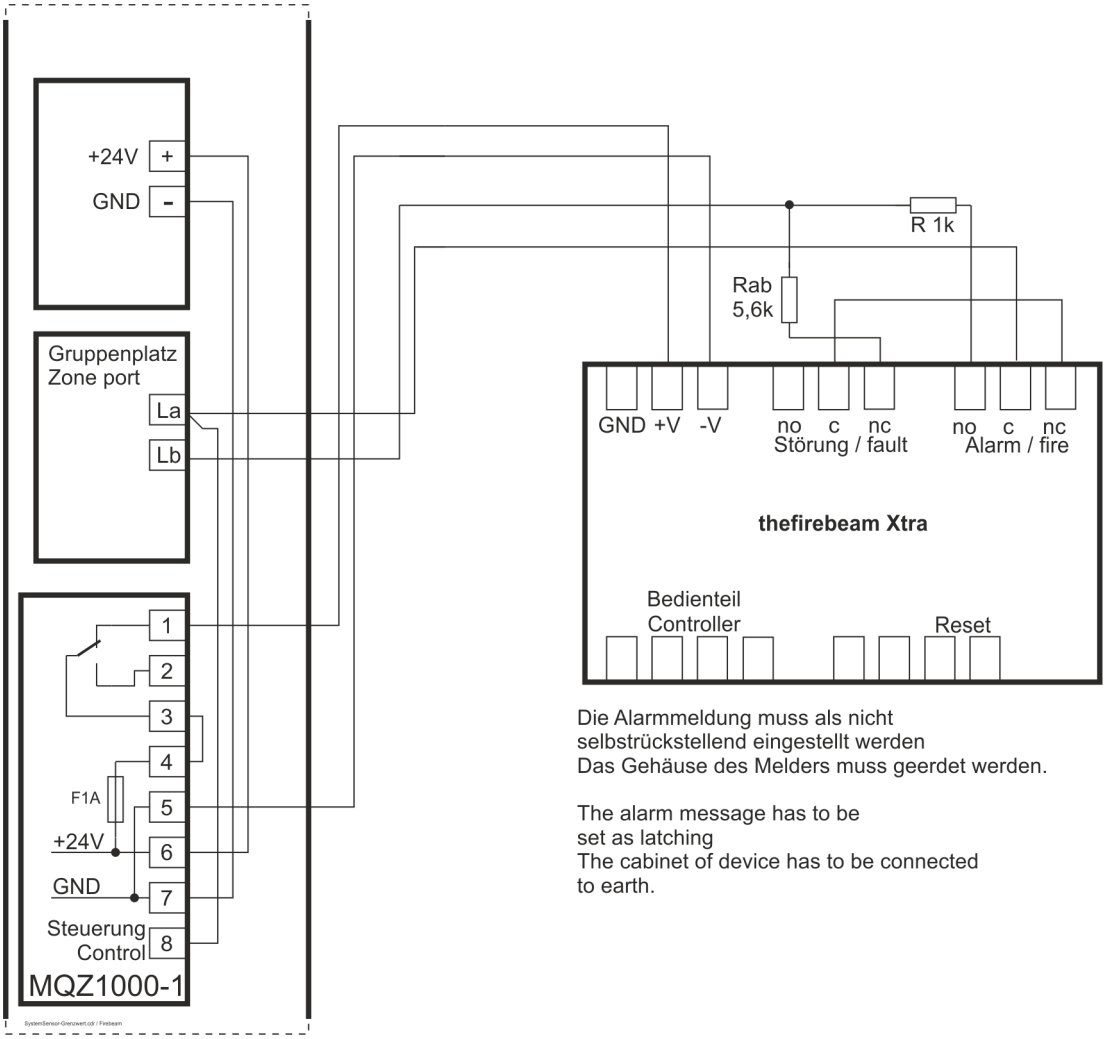
2.12.19.2 Connection - resetting by means of relay contact



After applying the supply voltage, the fault relay will remain released for 8 seconds. Therefore, a brief fault can occur on the fire detection control panel after the enablement of the detector zone, after a control panel reset and after power ON.

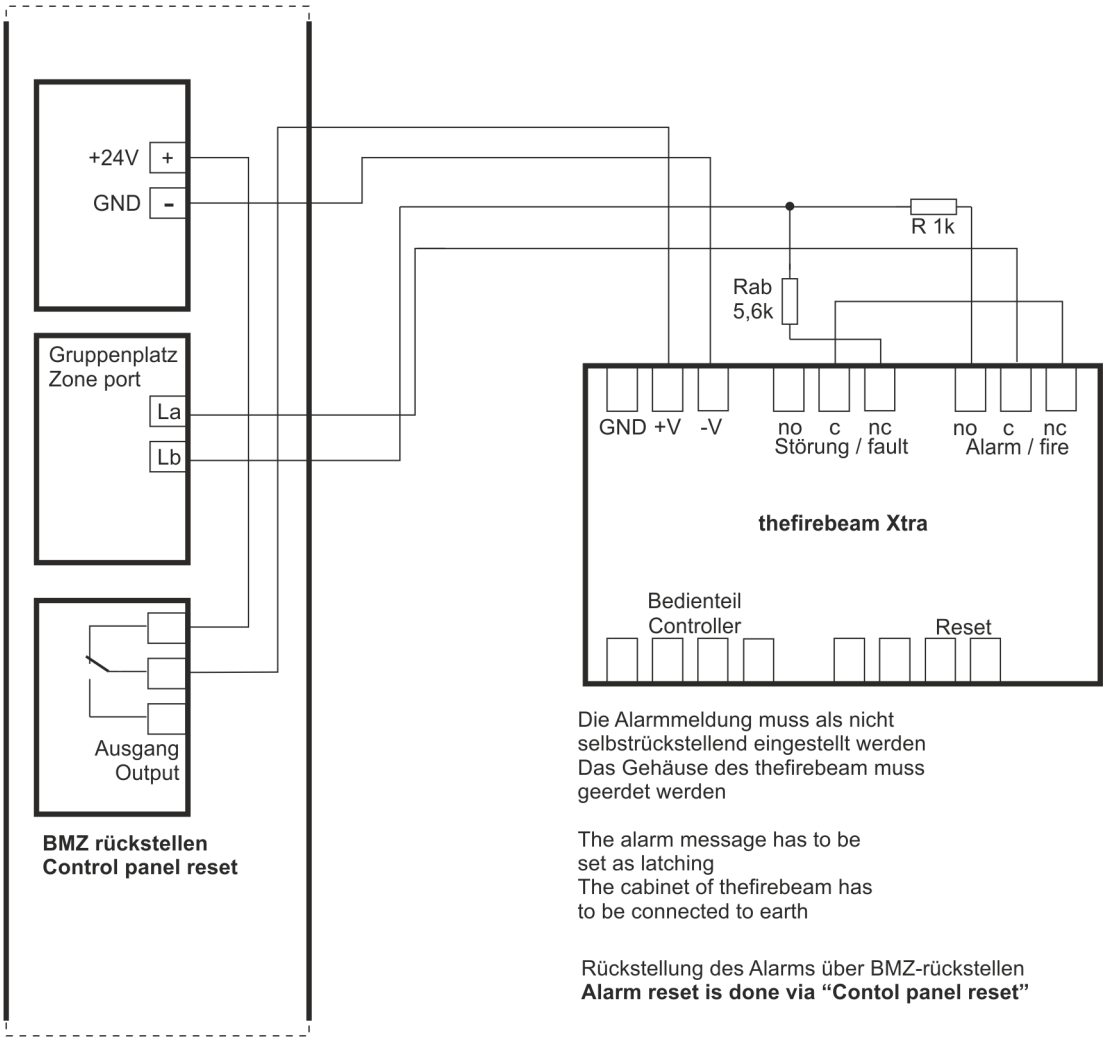
2.12.20 Beam Smoke Detector Thefirebeam Xtra

2.12.20.1 Connection with MQZ1000-1



After applying the supply voltage, the fault relay will remain released for 8 seconds. Therefore, a brief fault can occur on the fire detection control panel after the enablement of the detector zone, after a control panel reset and after power ON.

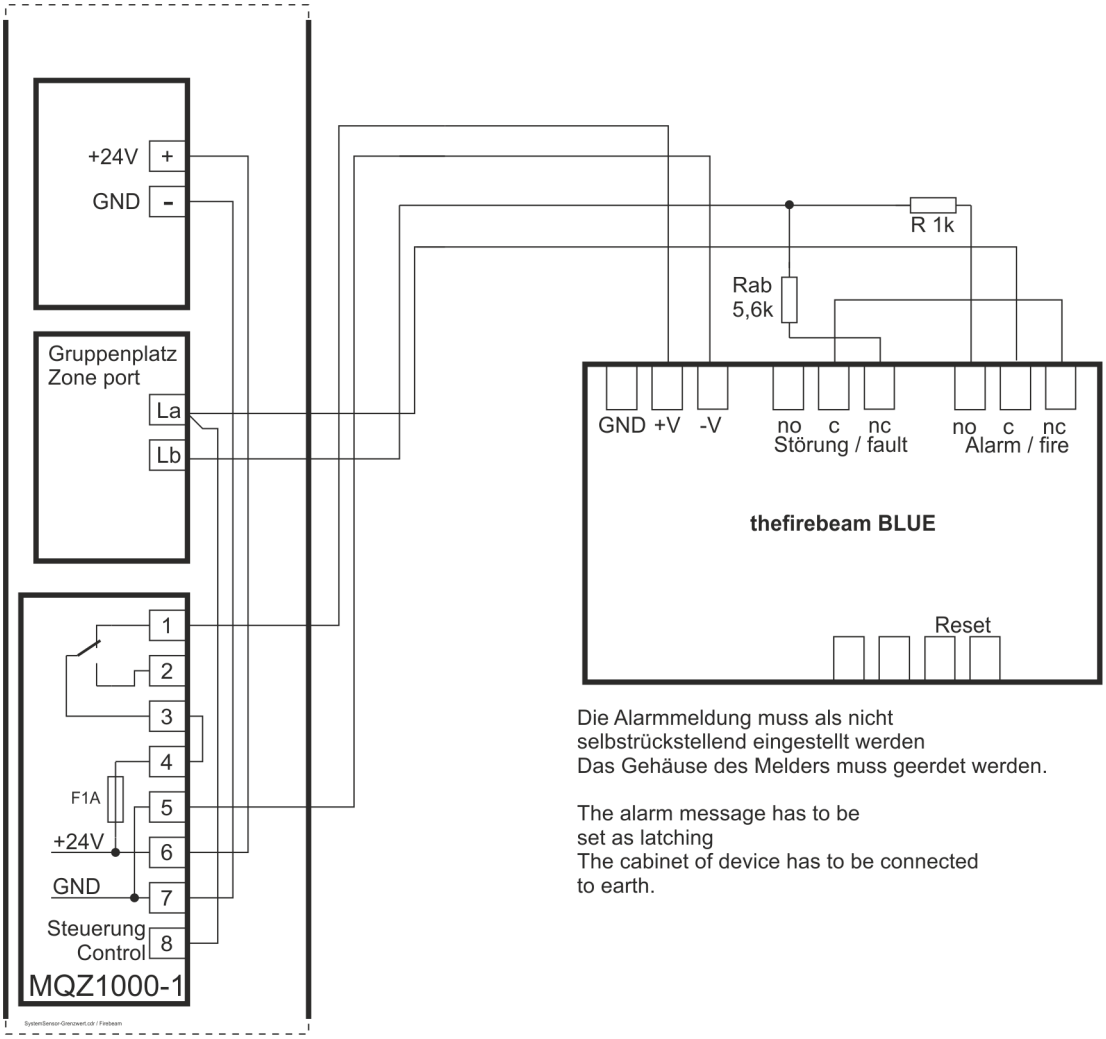
2.12.20.2 Connection - resetting by means of relay contact



After applying the supply voltage, the fault relay will remain released for 8 seconds. Therefore, a brief fault can occur on the fire detection control panel after the enablement of the detector zone, after a control panel reset and after power ON.

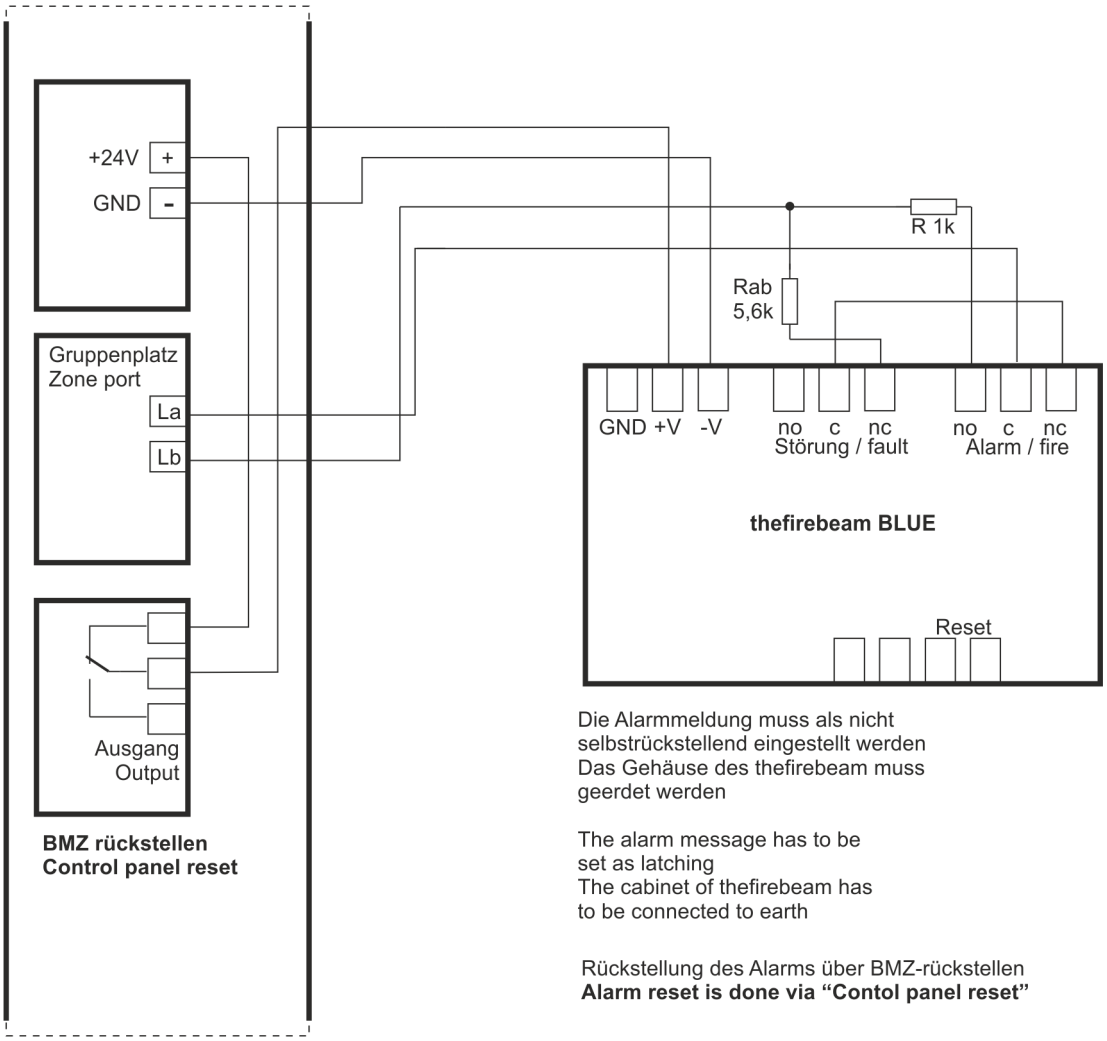
2.12.21 Beam Smoke Detector Thefirebeam BLUE

2.12.21.1 Connection with MQZ1000-1



After applying the supply voltage, the fault relay will remain released for 8 seconds. Therefore, a brief fault can occur on the fire detection control panel after the enablement of the detector zone, after a control panel reset and after power ON.

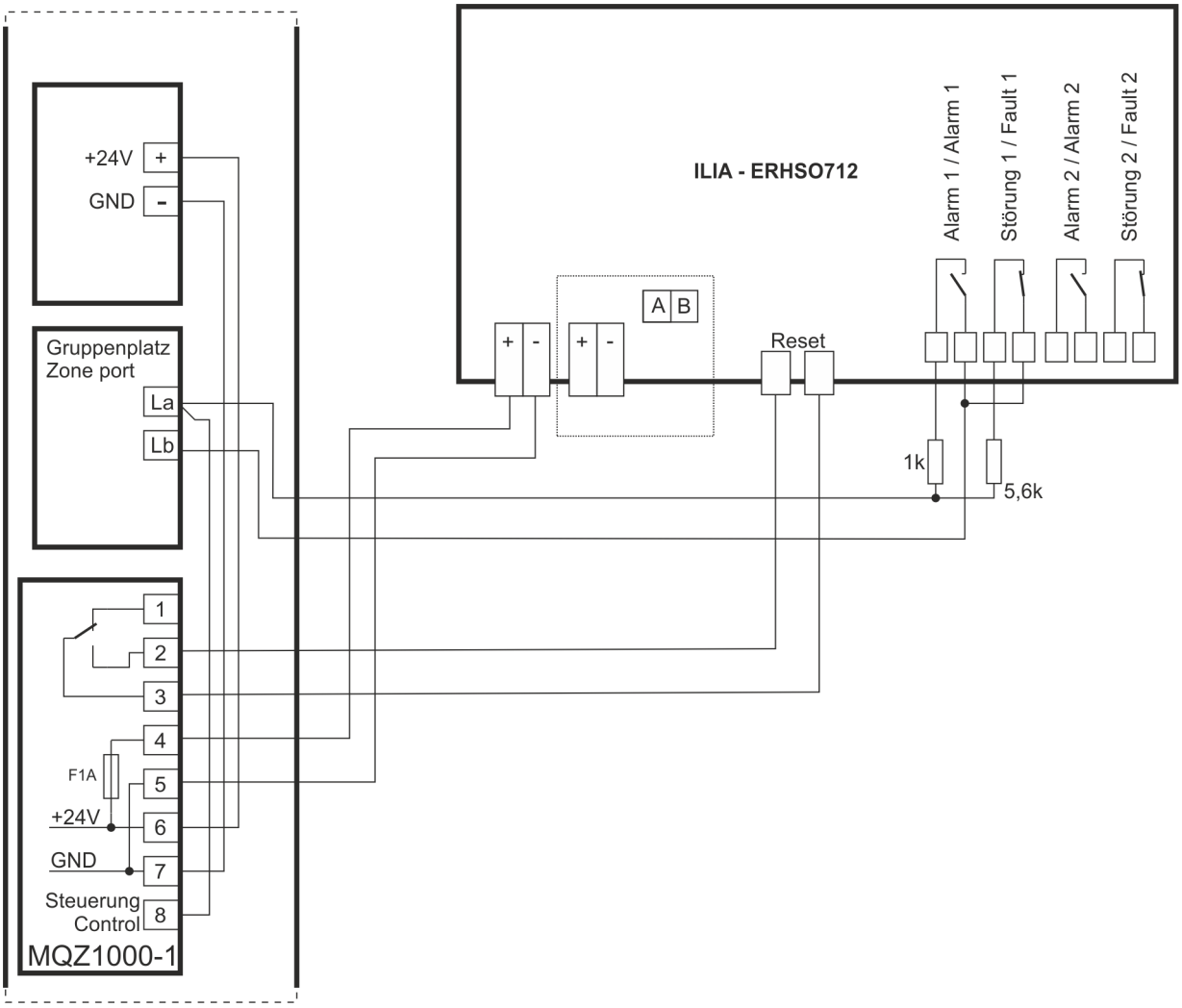
2.12.21.2 Connection - resetting by means of relay contact



After applying the supply voltage, the fault relay will remain released for 8 seconds. Therefore, a brief fault can occur on the fire detection control panel after the enablement of the detector zone, after a control panel reset and after power ON.

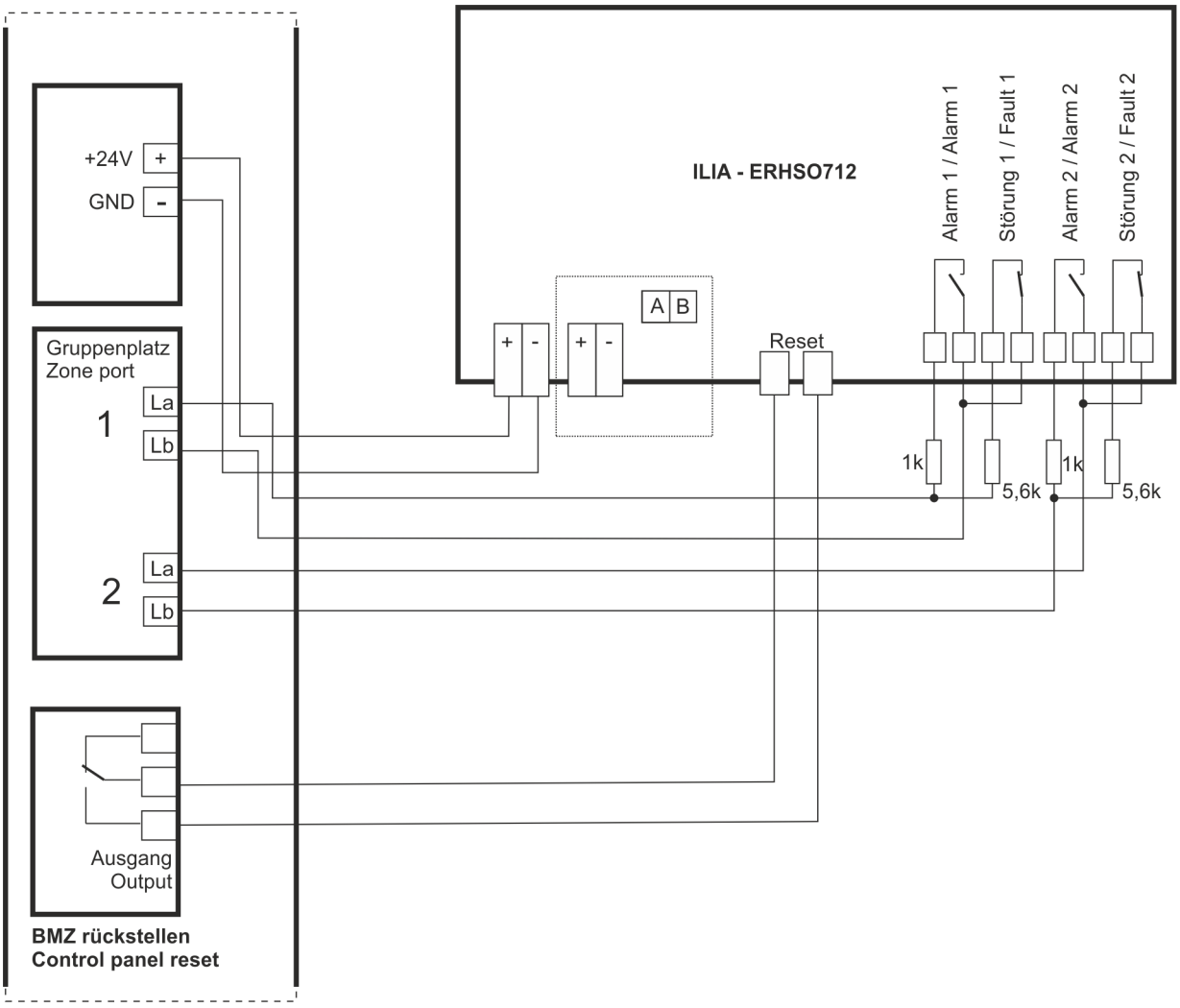
2.12.22 Beam Smoke Detector ILIA ERHSO712

2.12.22.1 Connection – resetting by means of MQZ1000-1



Please note that if the detector zone is disabled, messages will not be evaluated. Therefore, the detectors 1 and 2 must be used in the same fire area. For this reason, the connection of only one evaluation unit is shown in this example.

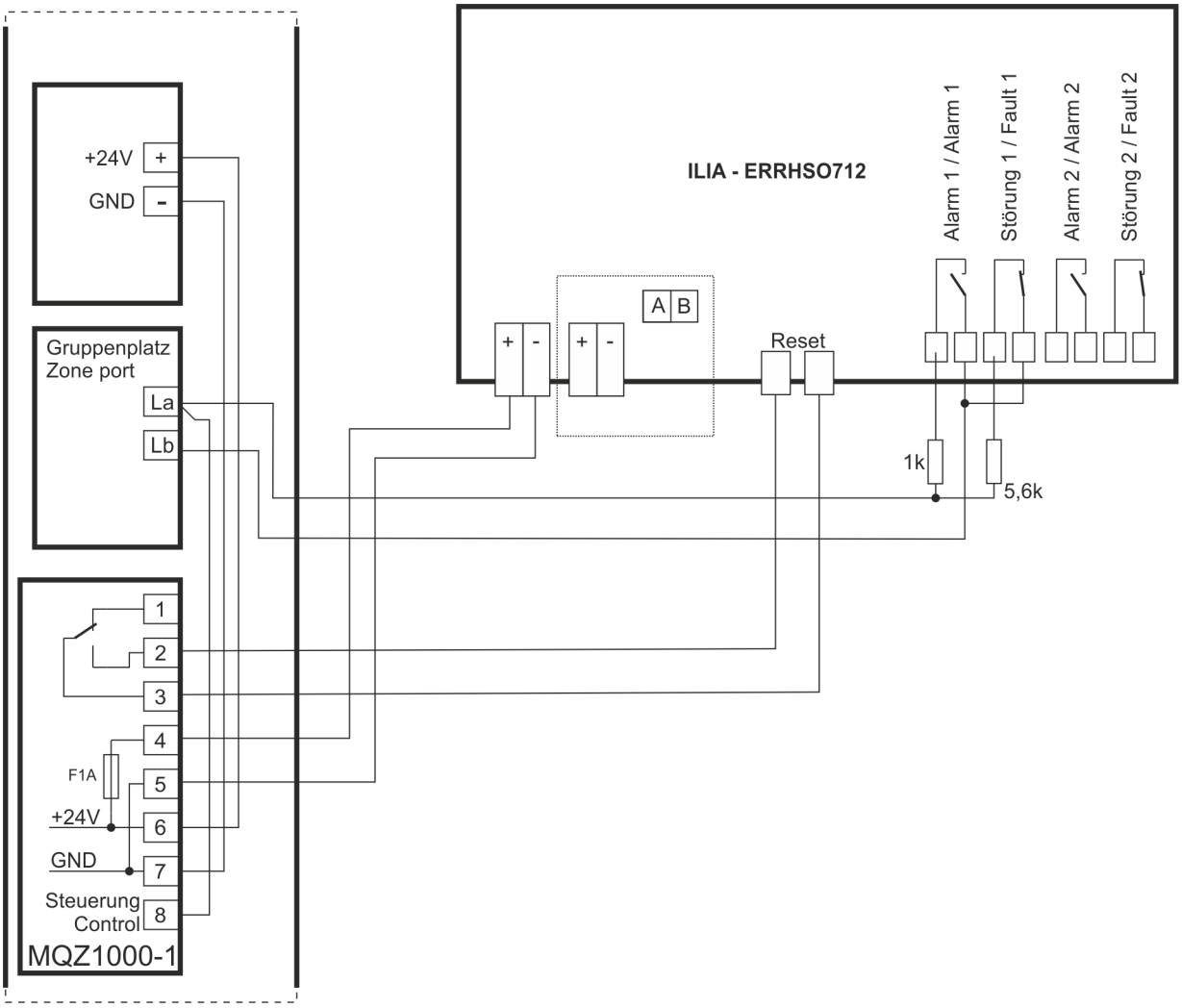
2.12.22.2 Connection – resetting via relay output



An alarm verification according to EN 54-2 Type A / Type B is not permissible.

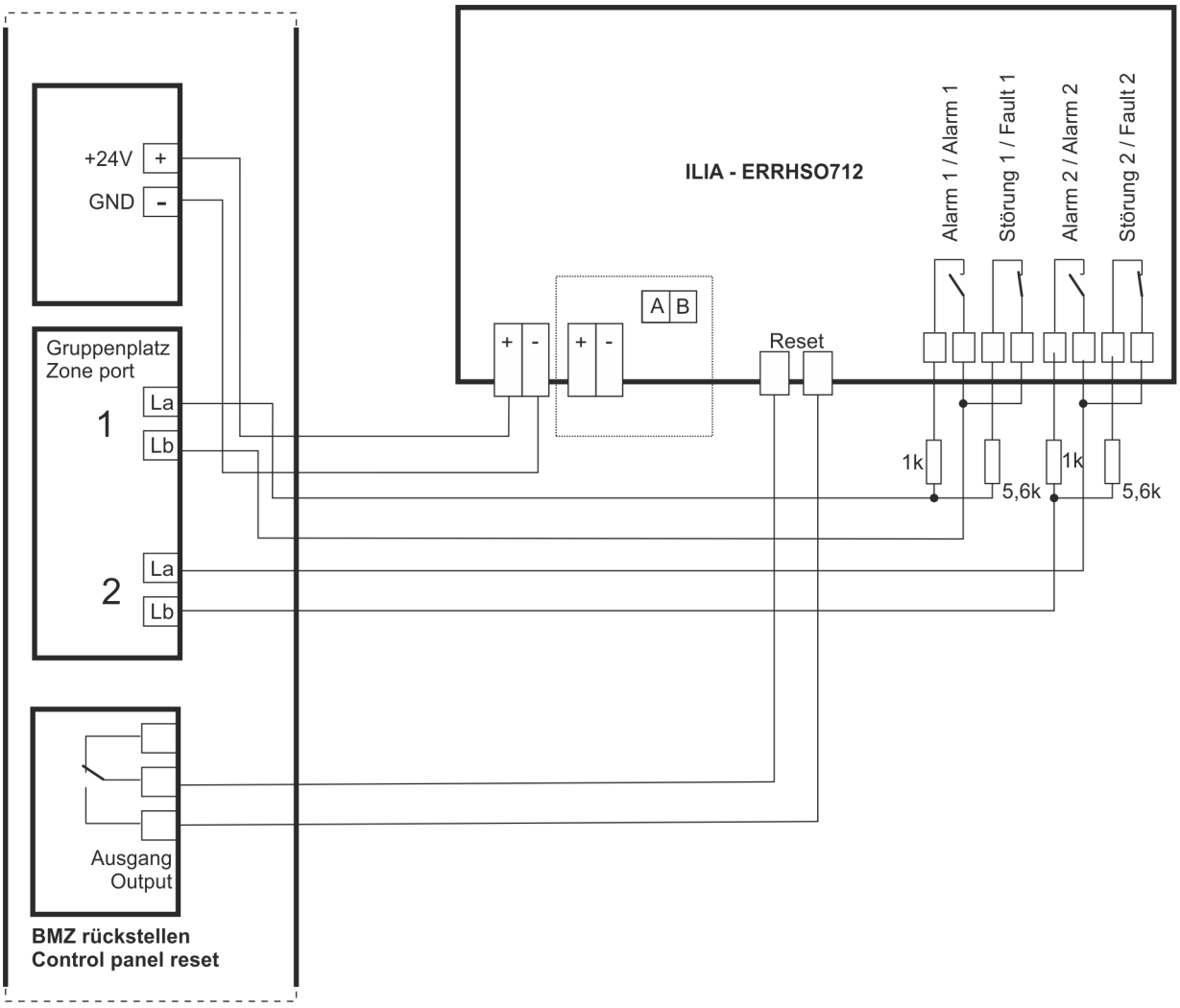
2.12.23 Beam Smoke Detector ILIA ERRHSO712

2.12.23.1 Connection – resetting by means of MQZ1000-1



Please note that if the detector zone is disabled, messages will not be evaluated. Therefore, the detectors 1 and 2 must be used in the same fire area. For this reason, the connection of only one evaluation unit is shown in this example.

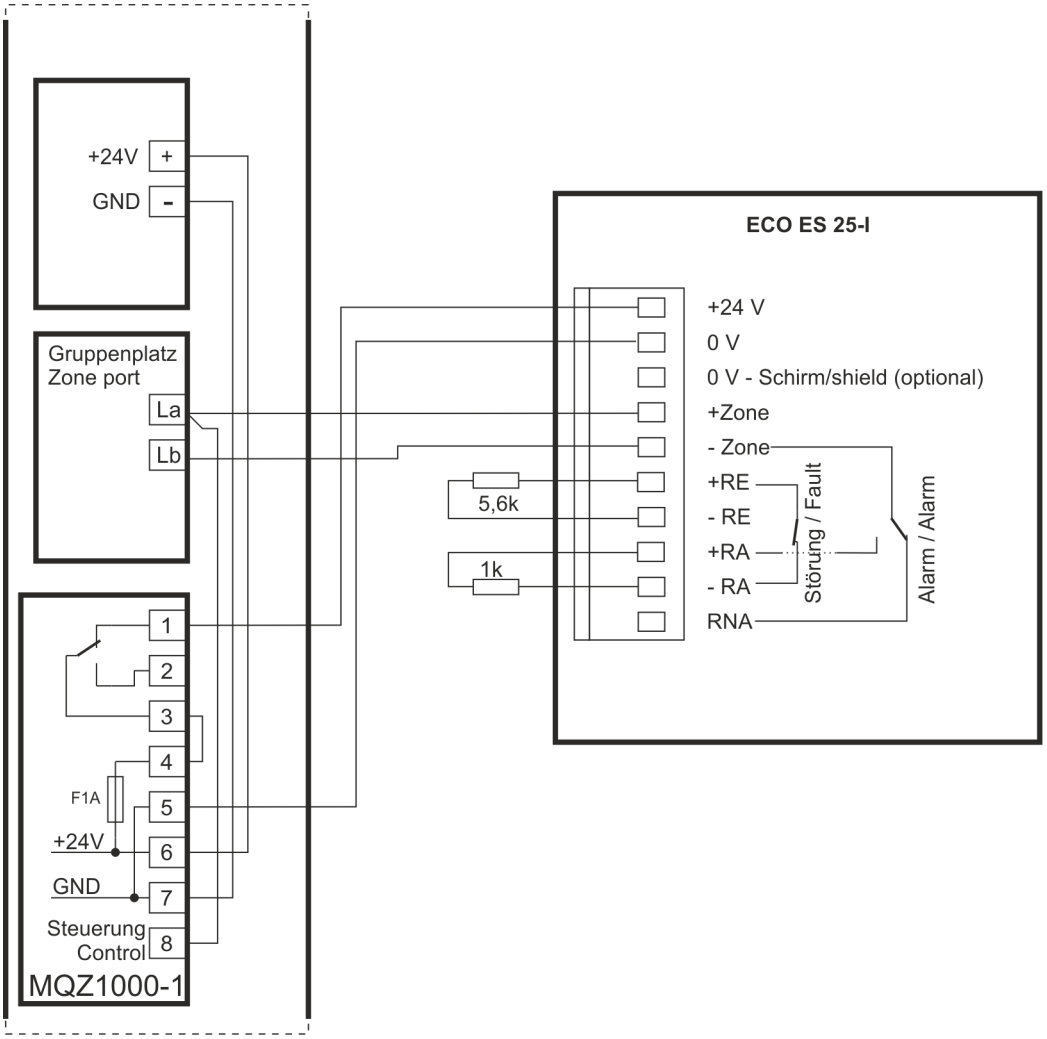
2.12.23.2 Connection – resetting via relay output



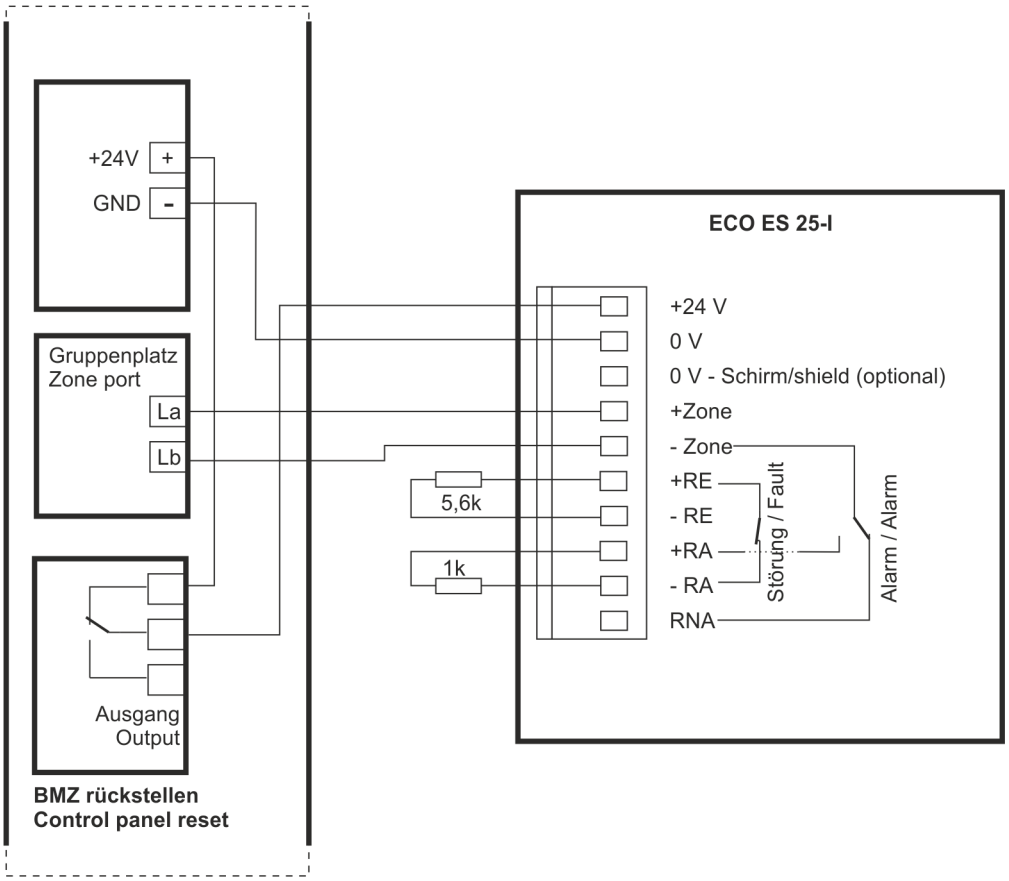
An alarm verification according to EN 54-2 Type A / Type B is not permissible.

2.12.24 Beam Smoke Detector ECO ES 25-I

2.12.24.1 Connection – resetting by means of MQZ1000-1



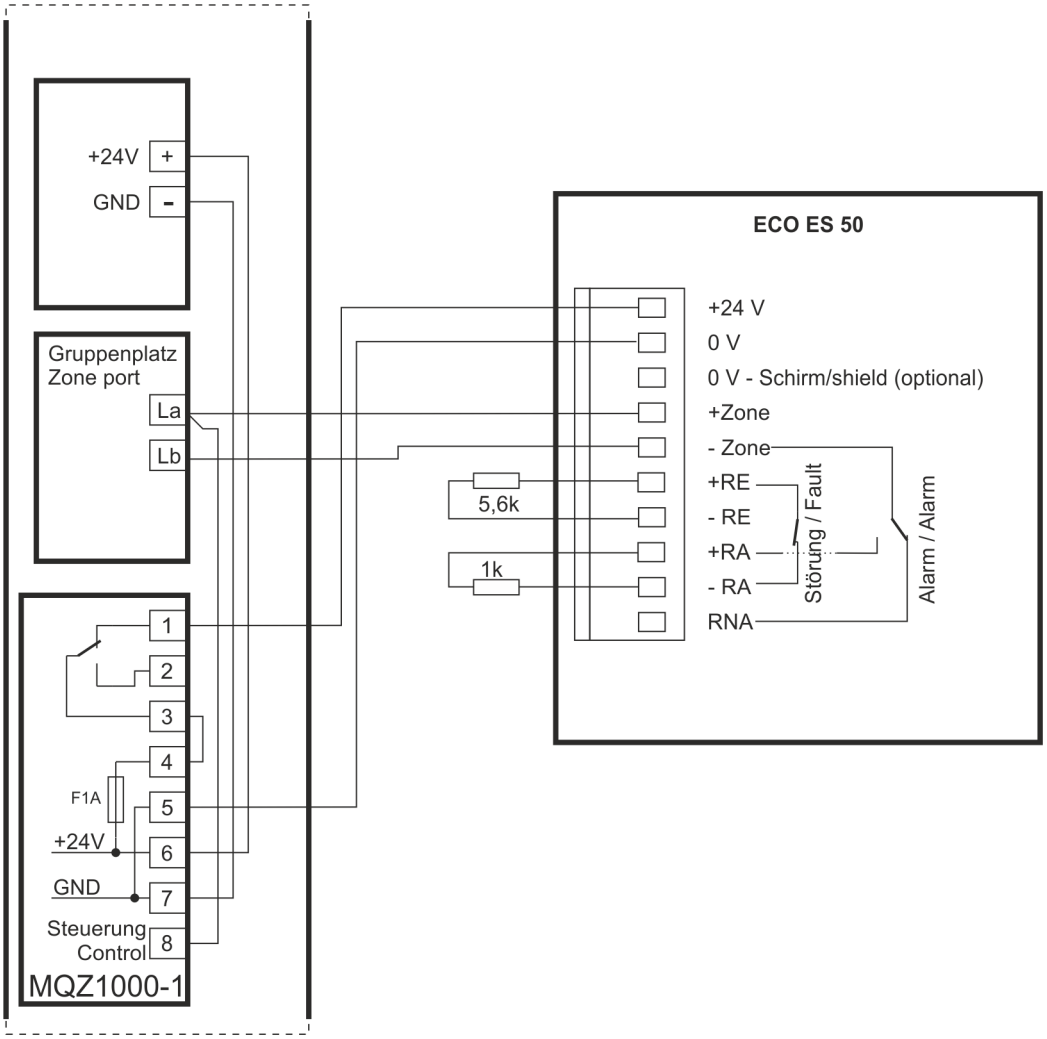
2.12.24.2 Connection – resetting via relay output



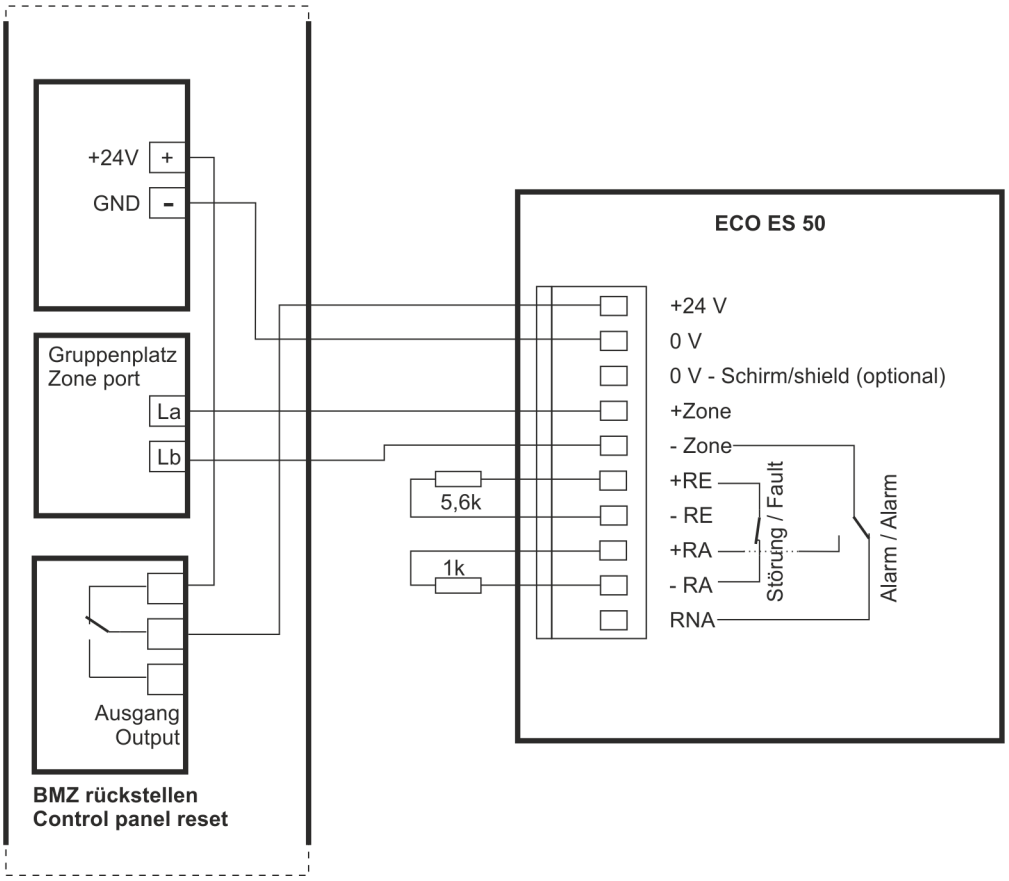
An alarm verification according to EN 54-2 Type A / Type B is not permissible.

2.12.25 Beam Smoke Detector ECO ES 50

2.12.25.1 Connection – resetting by means of MQZ1000-1



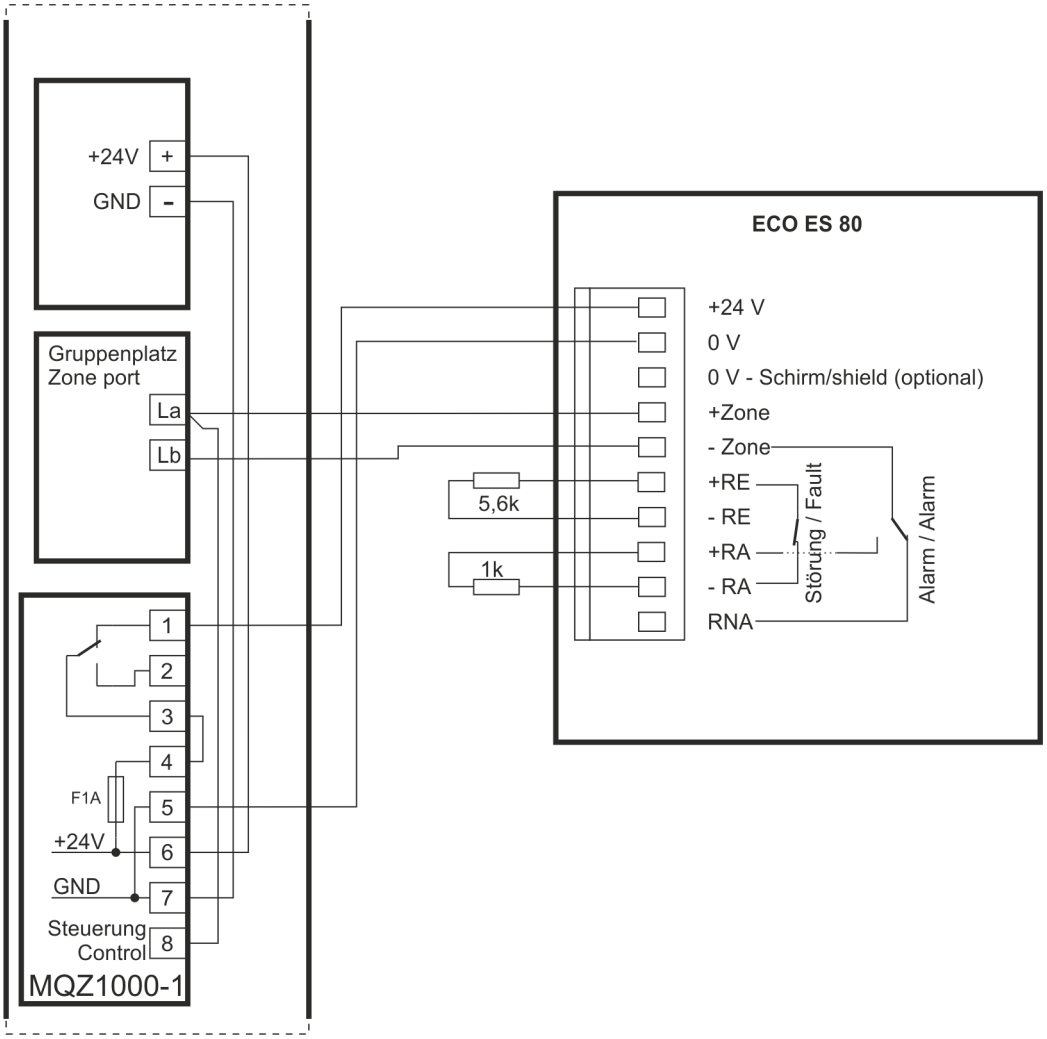
2.12.25.2 Connection – resetting via relay output



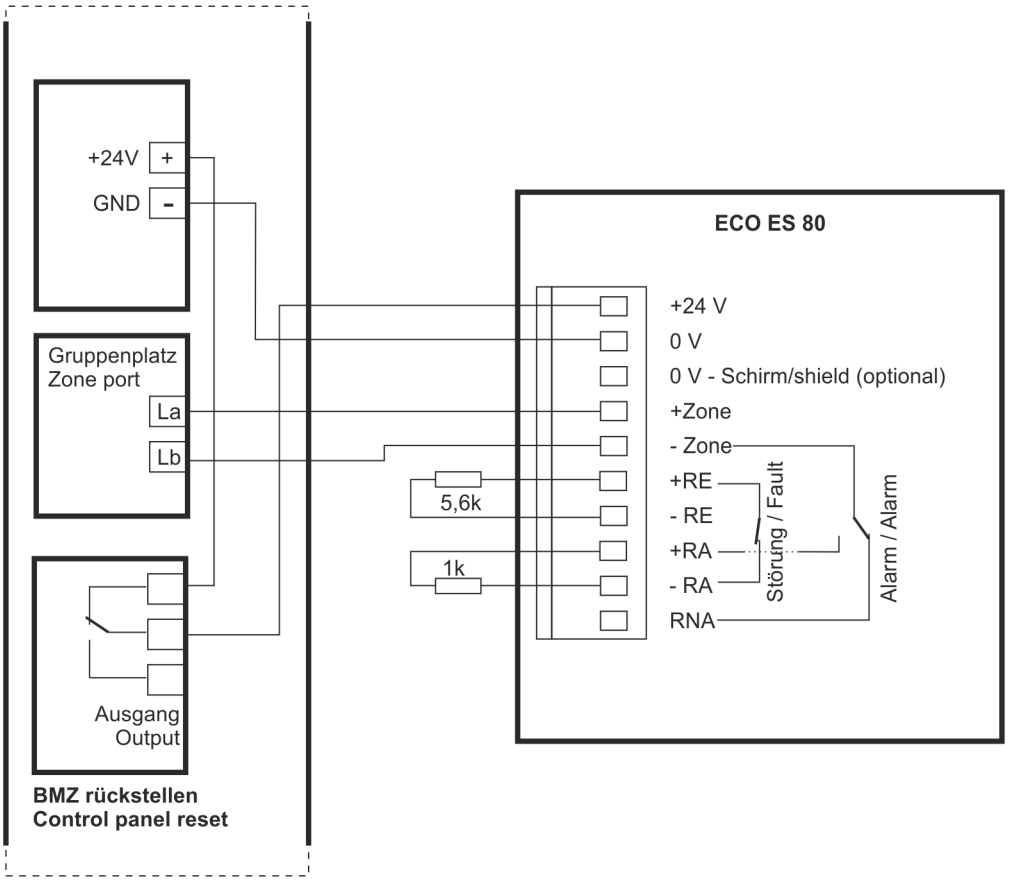
An alarm verification according to EN 54-2 Type A / Type B is not permissible.

2.12.26 Beam Smoke Detector ECO ES 80

2.12.26.1 Connection – resetting by means of MQZ1000-1



2.12.26.2 Connection – resetting via relay output

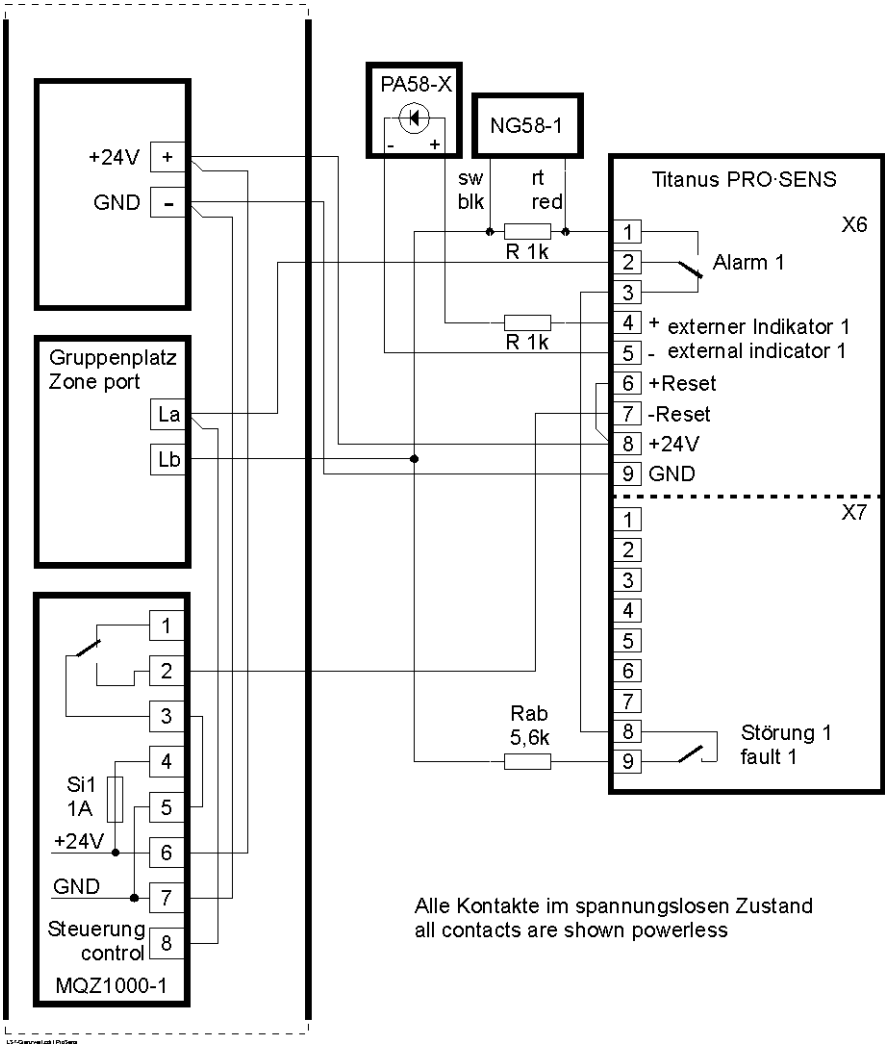


An alarm verification according to EN 54-2 Type A / Type B is not permissible.

2.13 Aspirating smoke detectors

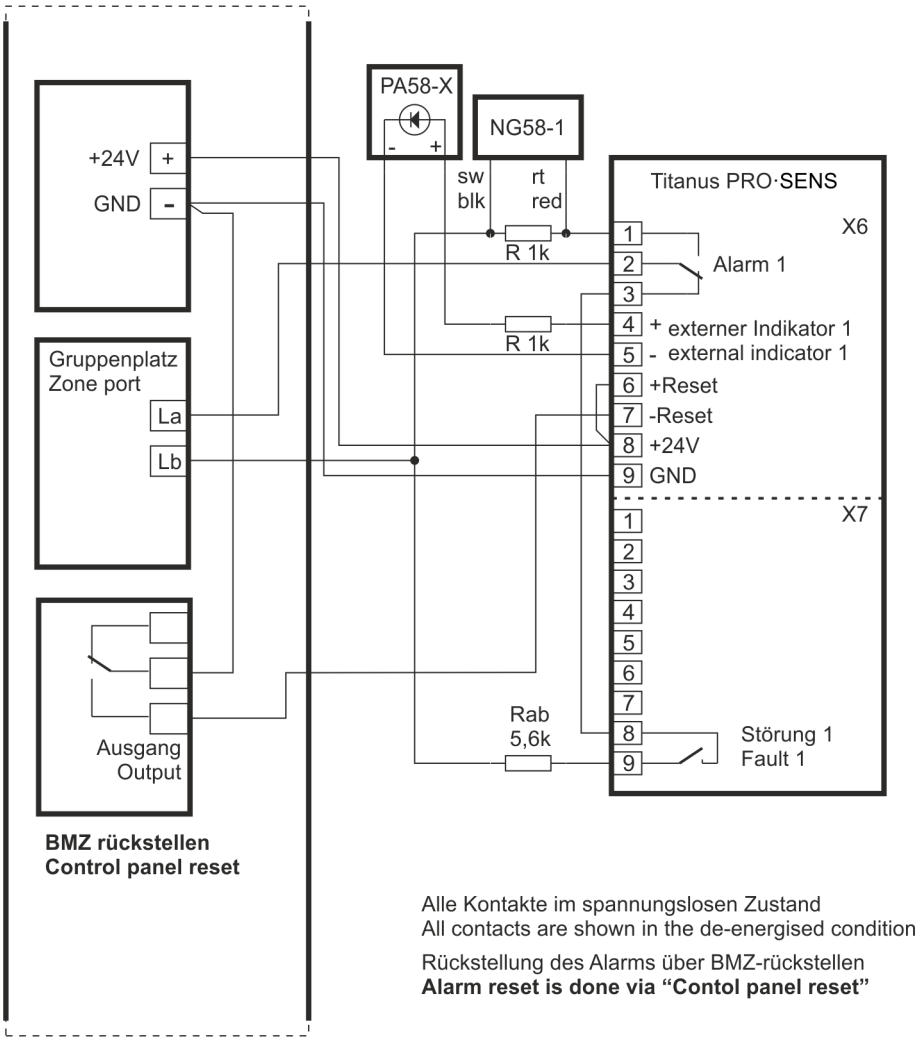
2.13.1 Aspirating smoke detector Titanus PRO·SENS – TP1/A

2.13.1.1 Connection of an aspirating smoke detector with MQZ1000-1



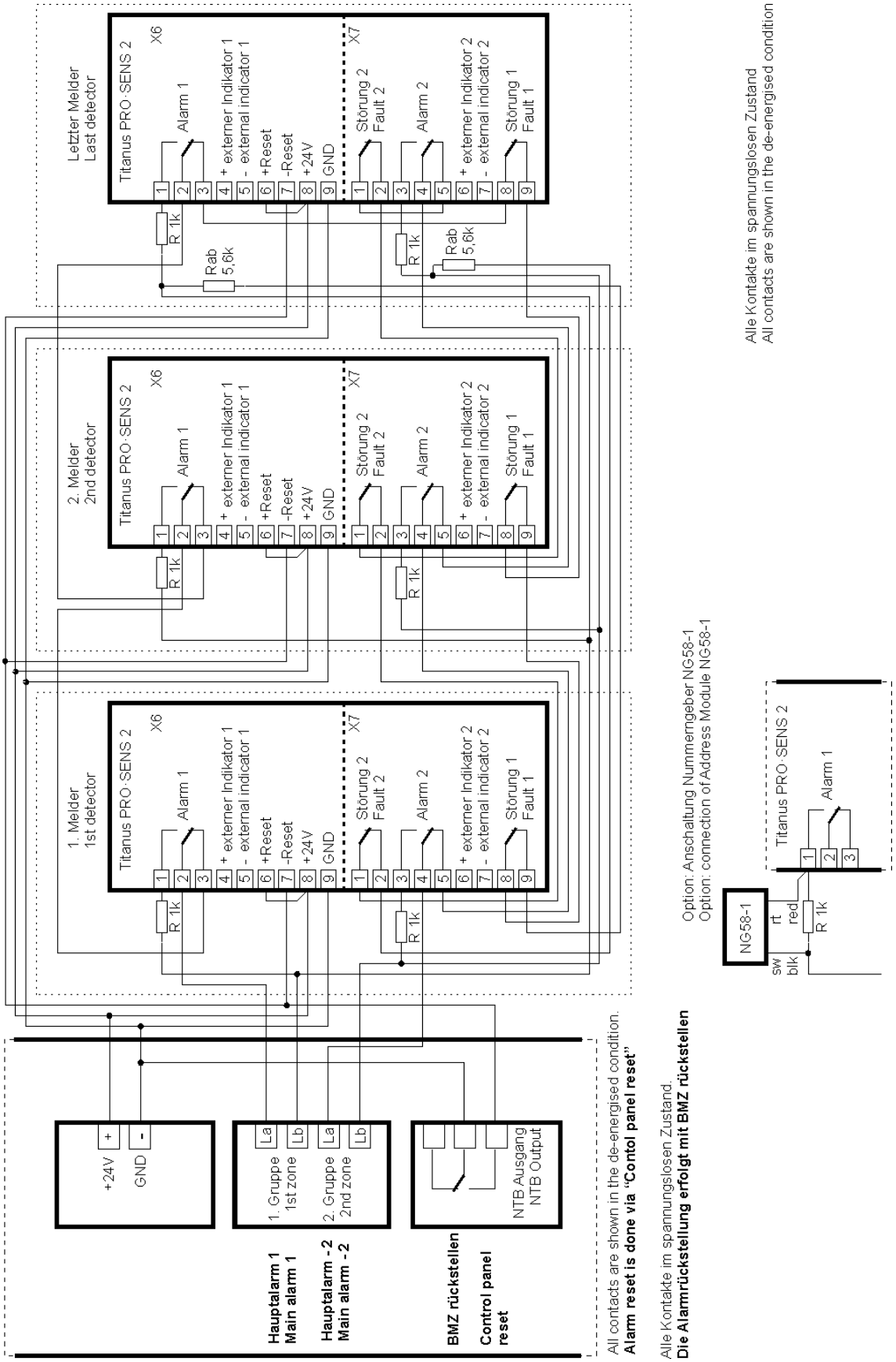
On pin connector JU2/3 (main printed circuit board), the jumper has to be set to position 1-2, which means that the fault relay is set to operate as NORMALLY OPEN contact.

2.13.1.2 Connection of an aspirating smoke detector – resetting by means of relay contact



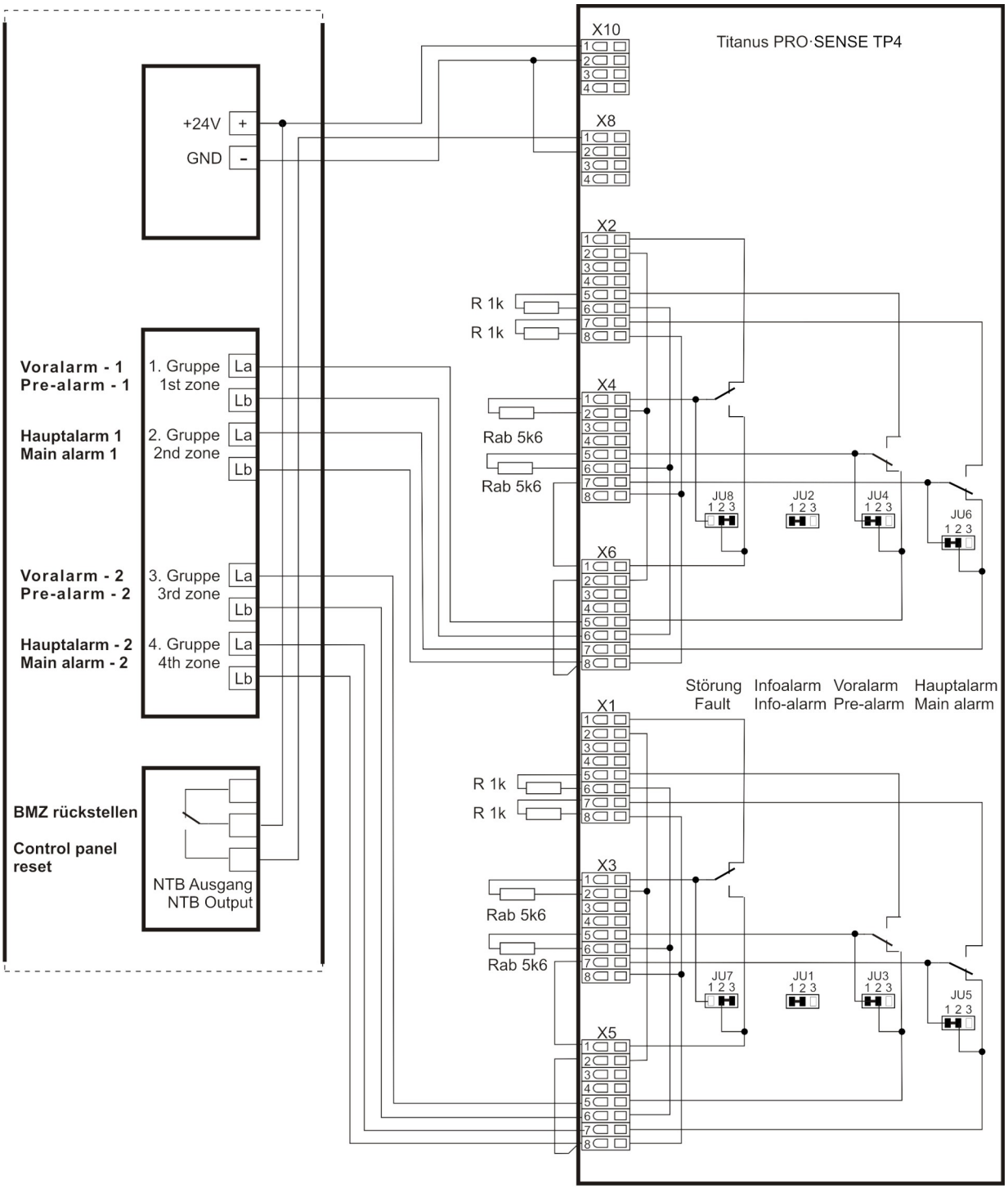
On pin connector JU2/3 (main printed circuit board), the jumper has to be set to position 1-2. In this way, the fault relay is set to operate as NORMALLY OPEN contact.

2.13.2 Aspirating smoke detector Titanus PRO·SENS – TP1/A with 2 channels



On pin connector JU2/3 (main printed circuit board), the jumper has to be set to position 1-2, which means that the fault relay is set to operate as NORMALLY OPEN contact.

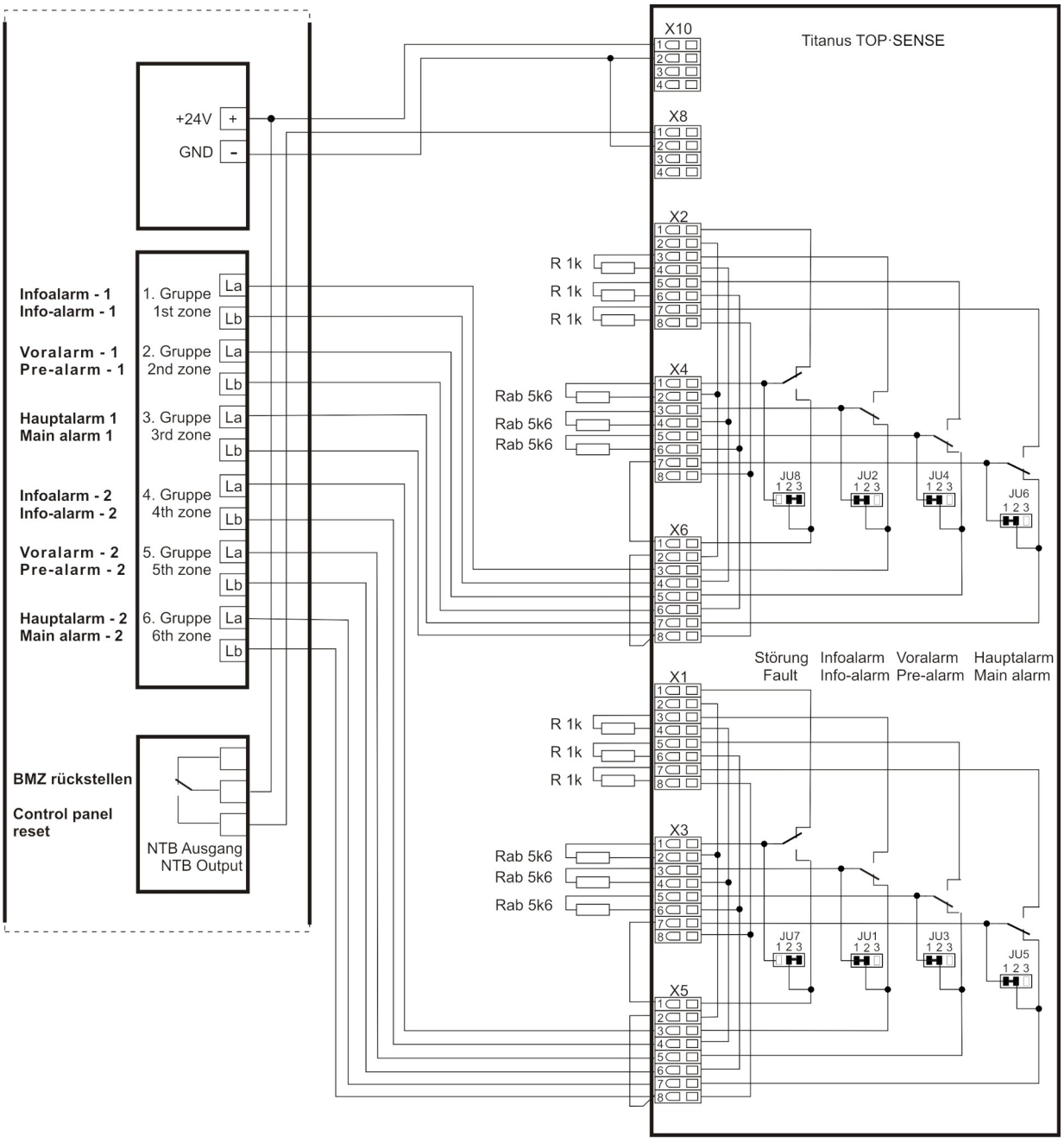
2.13.3 Aspirating smoke detector Titanus PRO SENSE – TP-4



All contacts are shown in the de-energised condition.
Alarm reset is done via "Contol panel reset"

Alle Kontakte im spannungslosen Zustand.
Die Alarmrückstellung erfolgt mit BMZ rückstellen

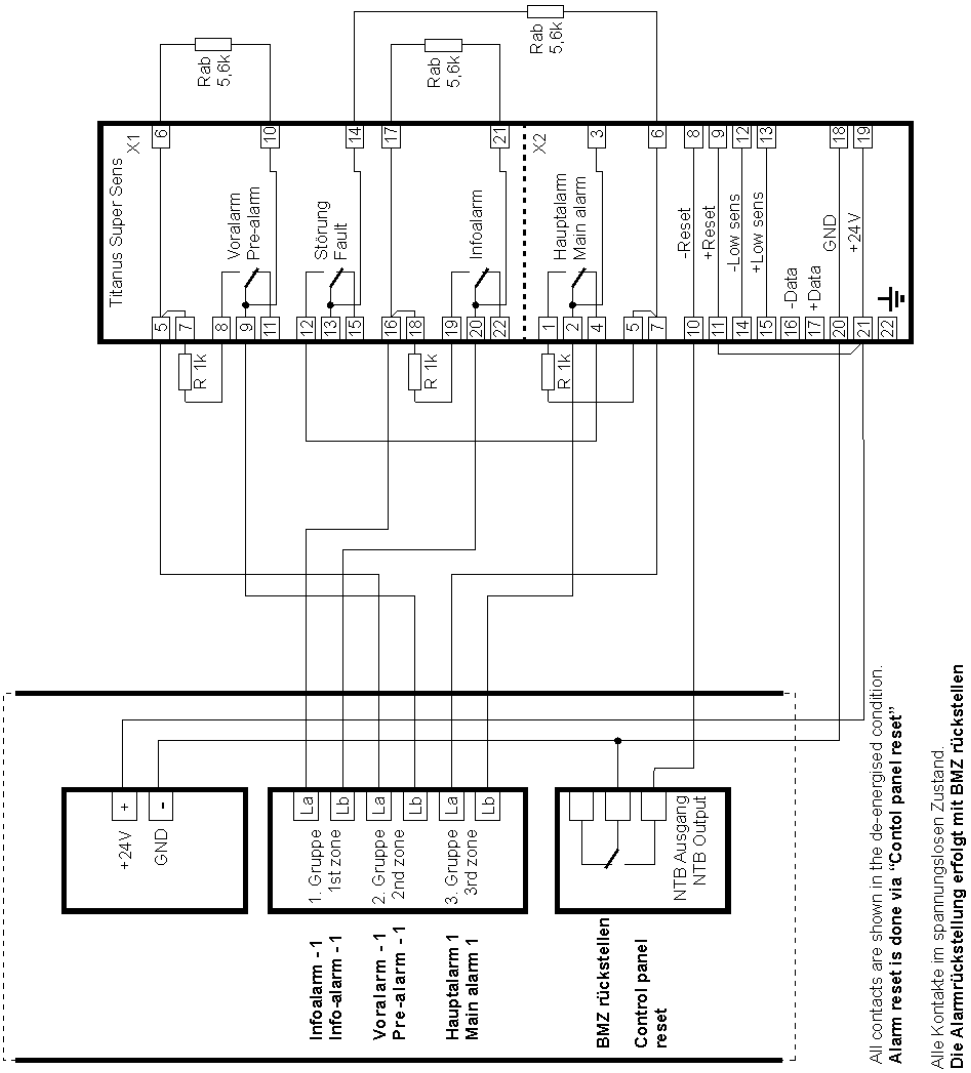
2.13.4 Aspirating smoke detector Titanus TOP SENSE – TT-1



All contacts are shown in the de-energised condition.
Alarm reset is done via "Contol panel reset"

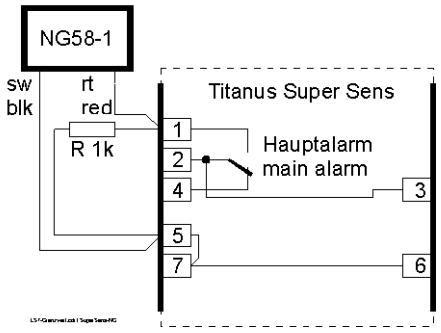
Alle Kontakte im spannungslosen Zustand.
Die Alarmrückstellung erfolgt mit BMZ rückstellen

2.13.5 Aspirating smoke detector Titanus Super Sens – T-SS

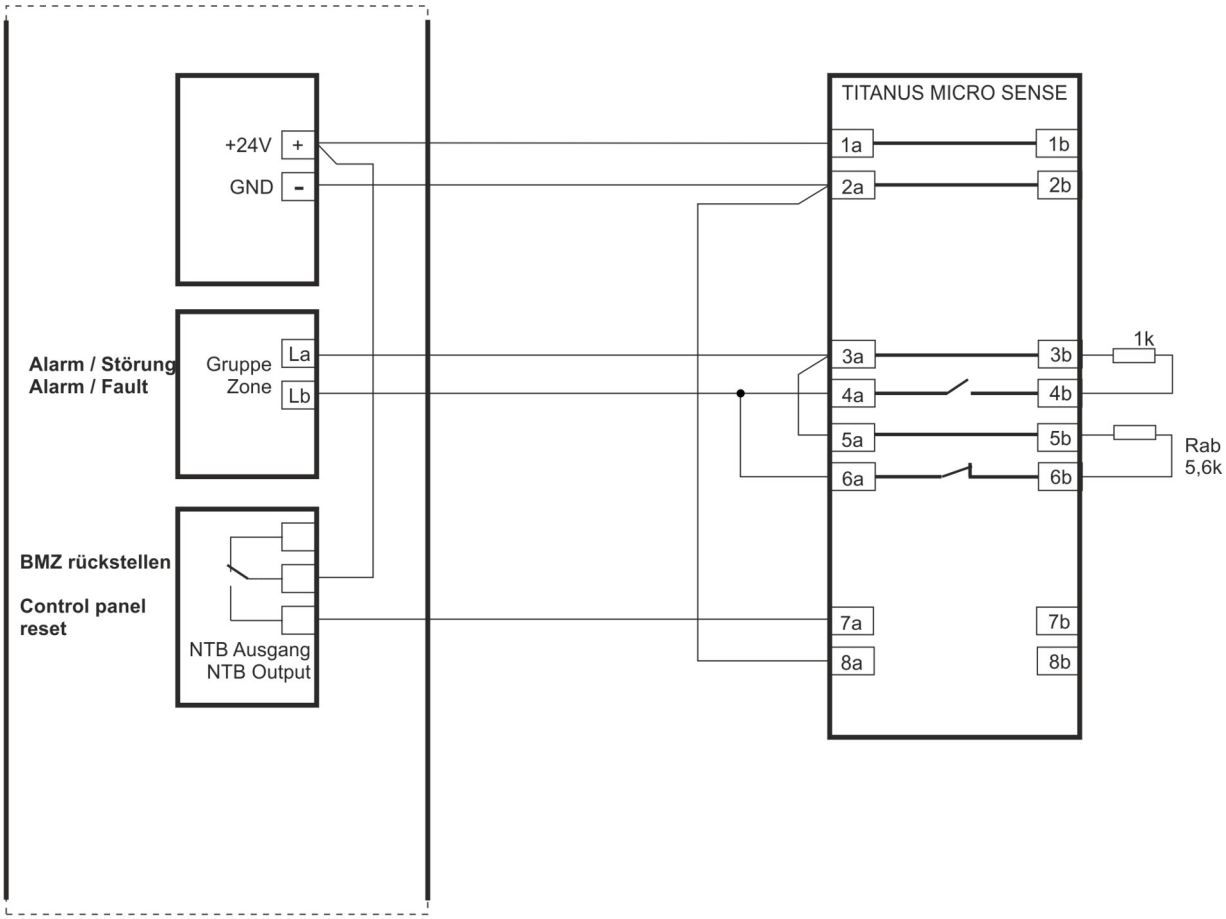


Connection of address module

Option: Anschaltung Nummerngeber NG58-1
option: connection address module NG58-1



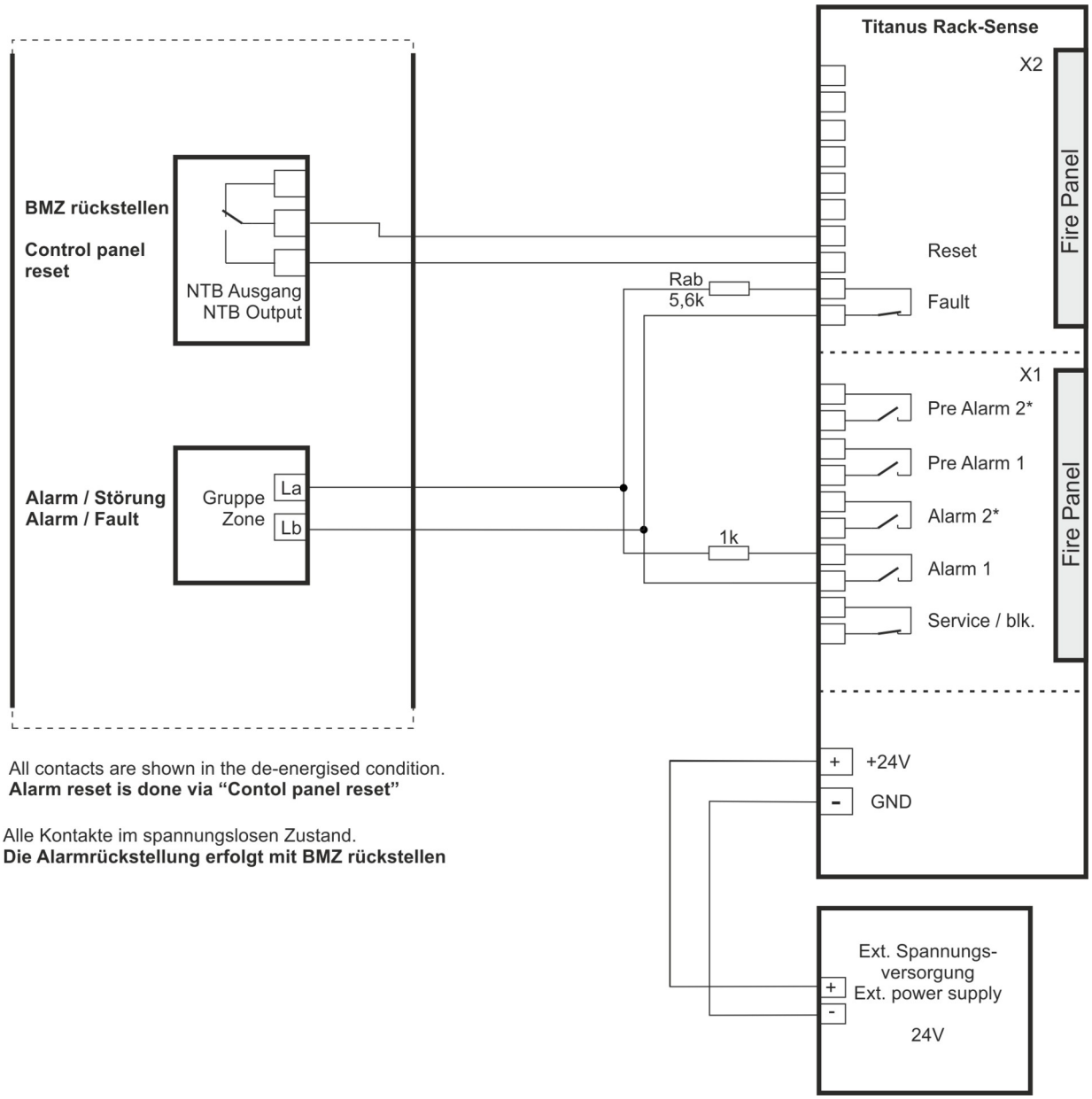
2.13.6 Aspirating smoke detector Titanus MICRO SENSE



All contacts are shown in the de-energised condition.
Alarm reset is done via "Contol panel reset"

Alle Kontakte im spannungslosen Zustand.
Die Alarmrückstellung erfolgt mit BMZ rückstellen

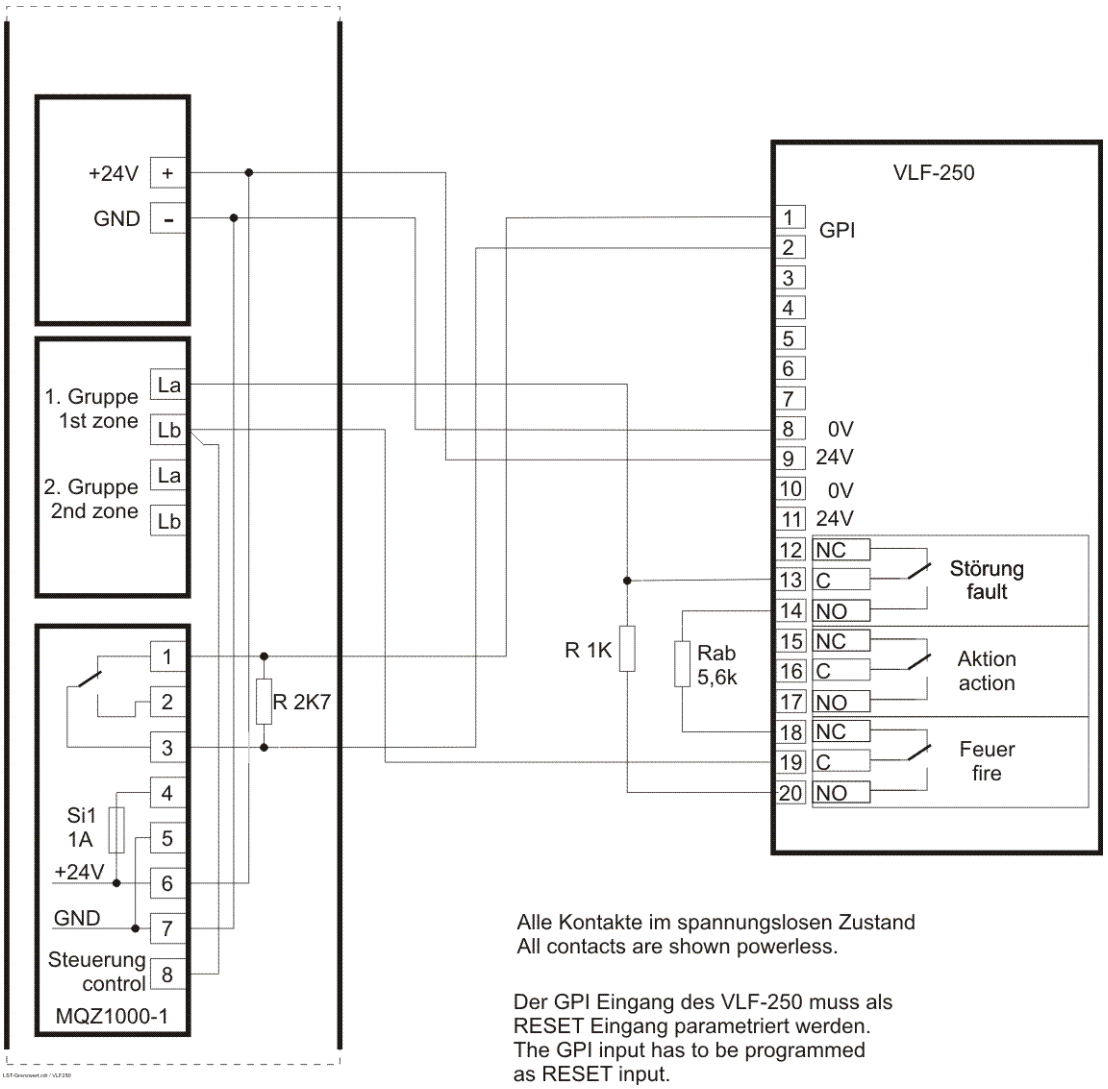
2.13.7 Aspirating smoke detector Titanus RACK SENSE



The reset input of the Rack-Sense must be actuated without applying a potential.

2.13.8 Aspirating smoke detector Vesda VLF-250 / VLF-500

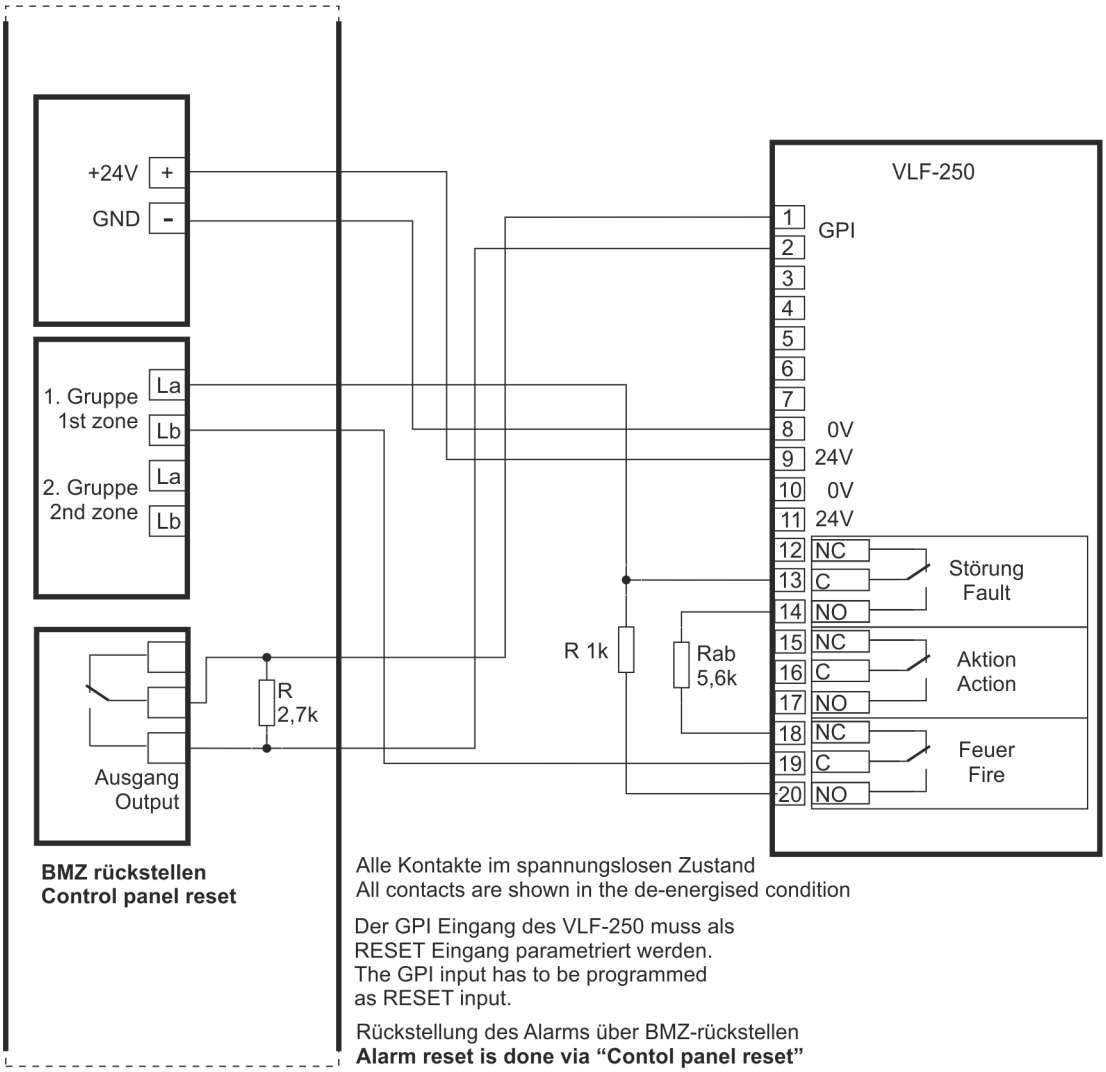
2.13.8.1 Connection with MQZ1000-1



You need a special software for the setup and commissioning of the Smoke Aspiration System Vesda VLF-250 / VLF-500.

The aspirating smoke detector Vesda VLF-500 has the same terminal configuration as the VLF-250.

2.13.8.2 Connection – resetting by means of relay contact

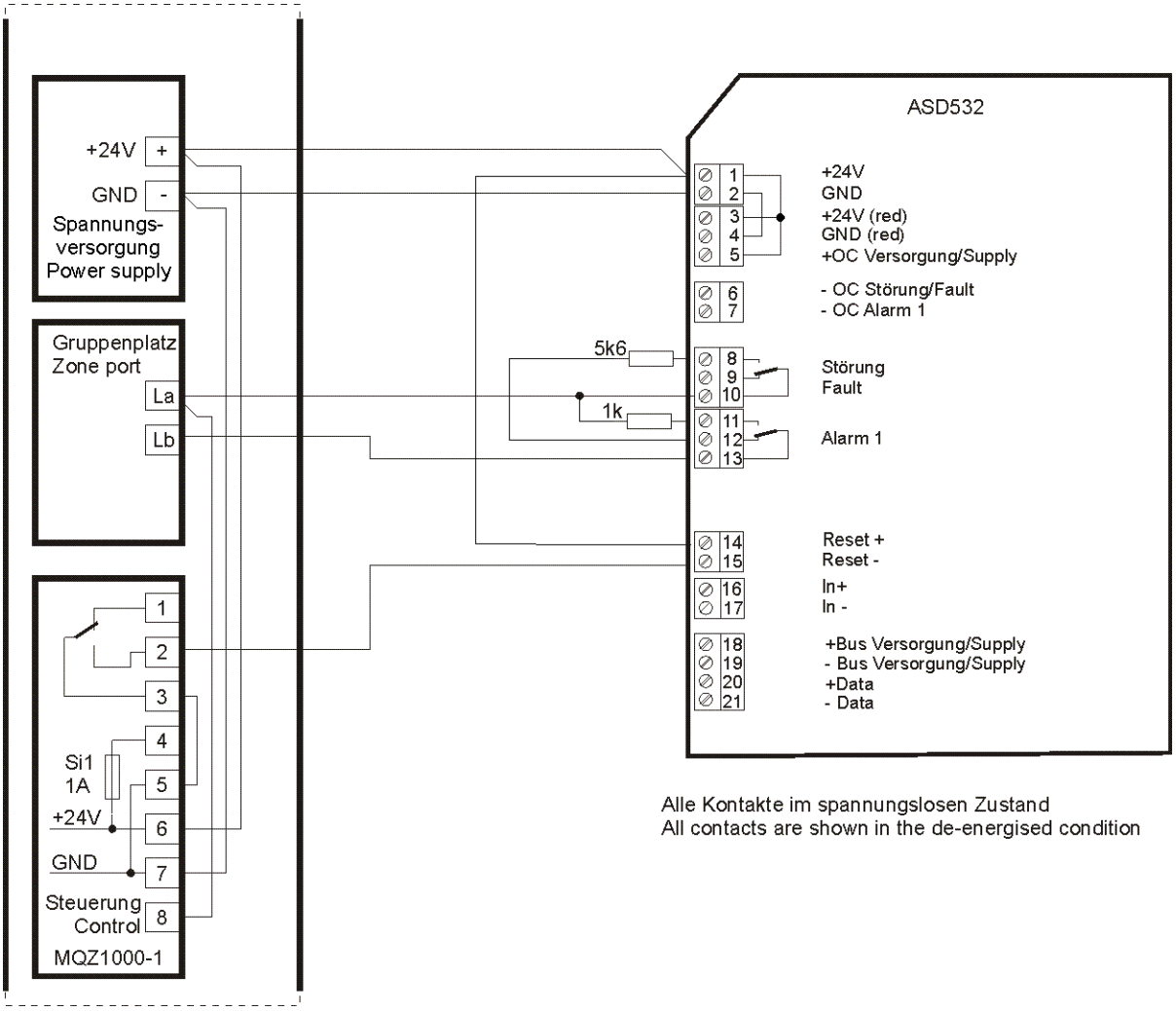


You need a special software for the setup and commissioning of the Smoke Aspiration System Vesda VLF-250 / VLF-500.

The Smoke Aspiration System Vesda VLF-500 has the same terminal configuration as the VLF-250.

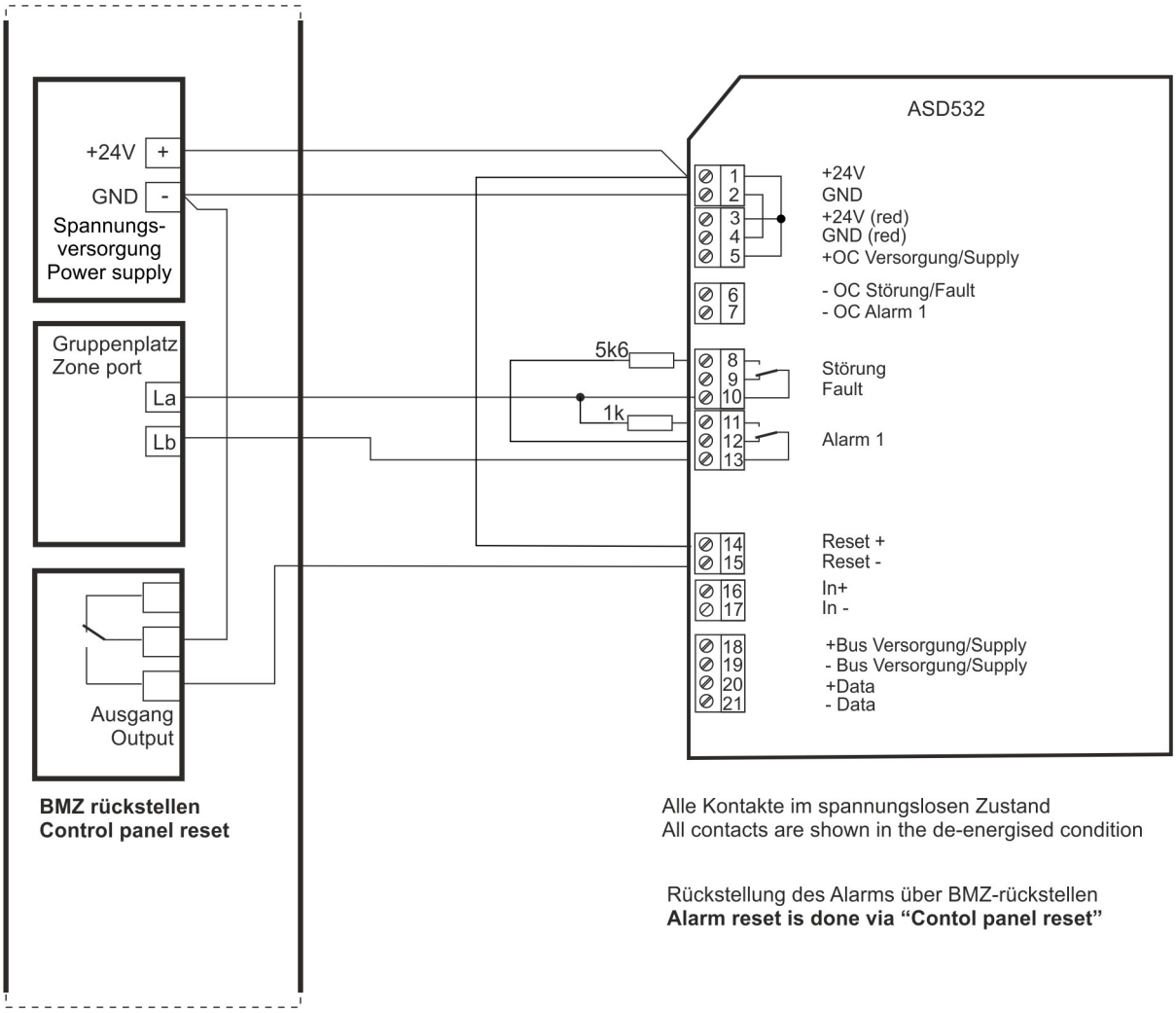
2.13.9 Aspirating smoke detector ASD532

2.13.9.1 Connection with MQZ1000-1



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

2.13.9.2 Connection – resetting by means of relay contact

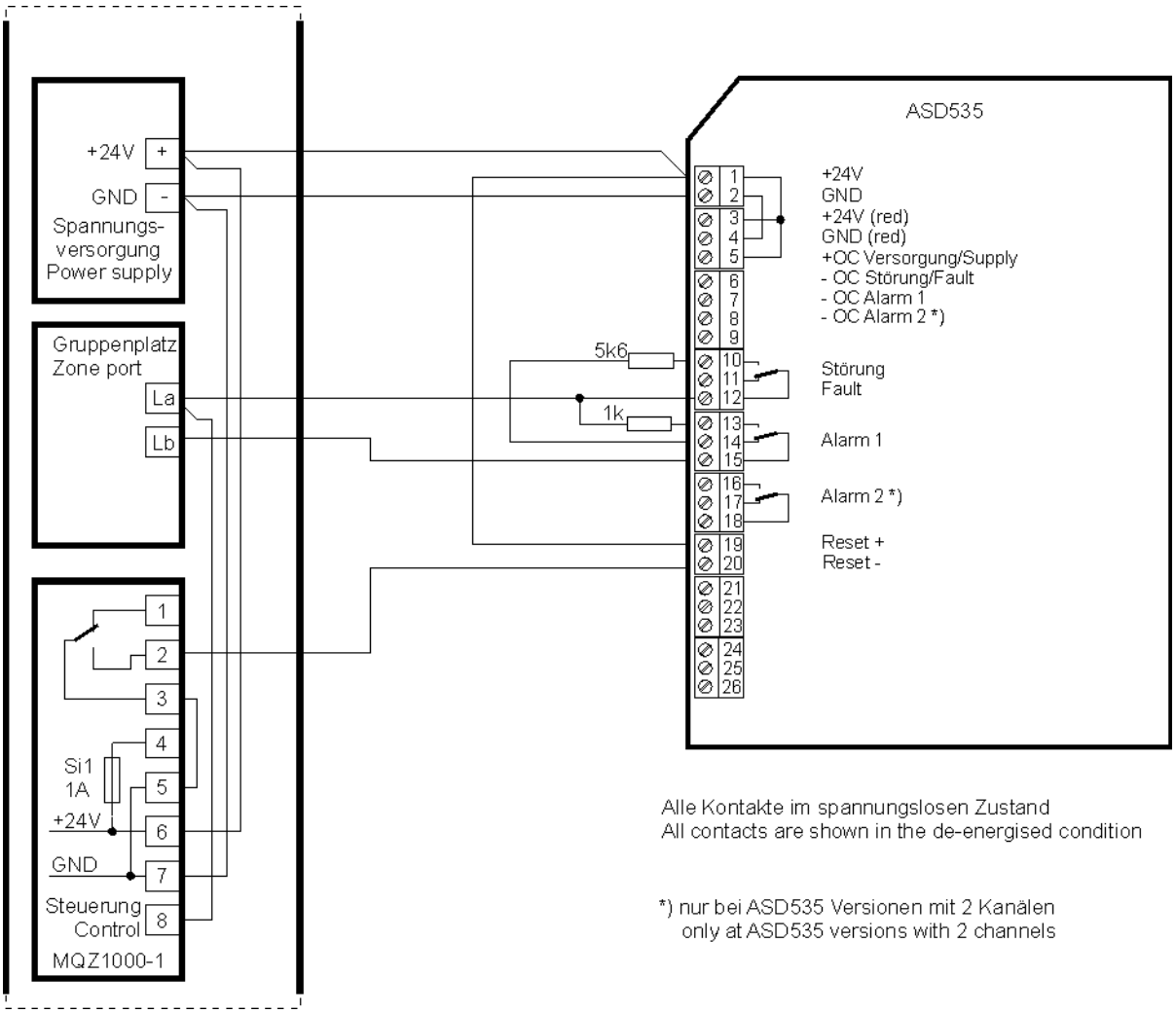


Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rückstellung des Alarms über BMZ-rückstellen
Alarm reset is done via “Contol panel reset”

2.13.10 Aspirating smoke detector ASD535 – 1 channel

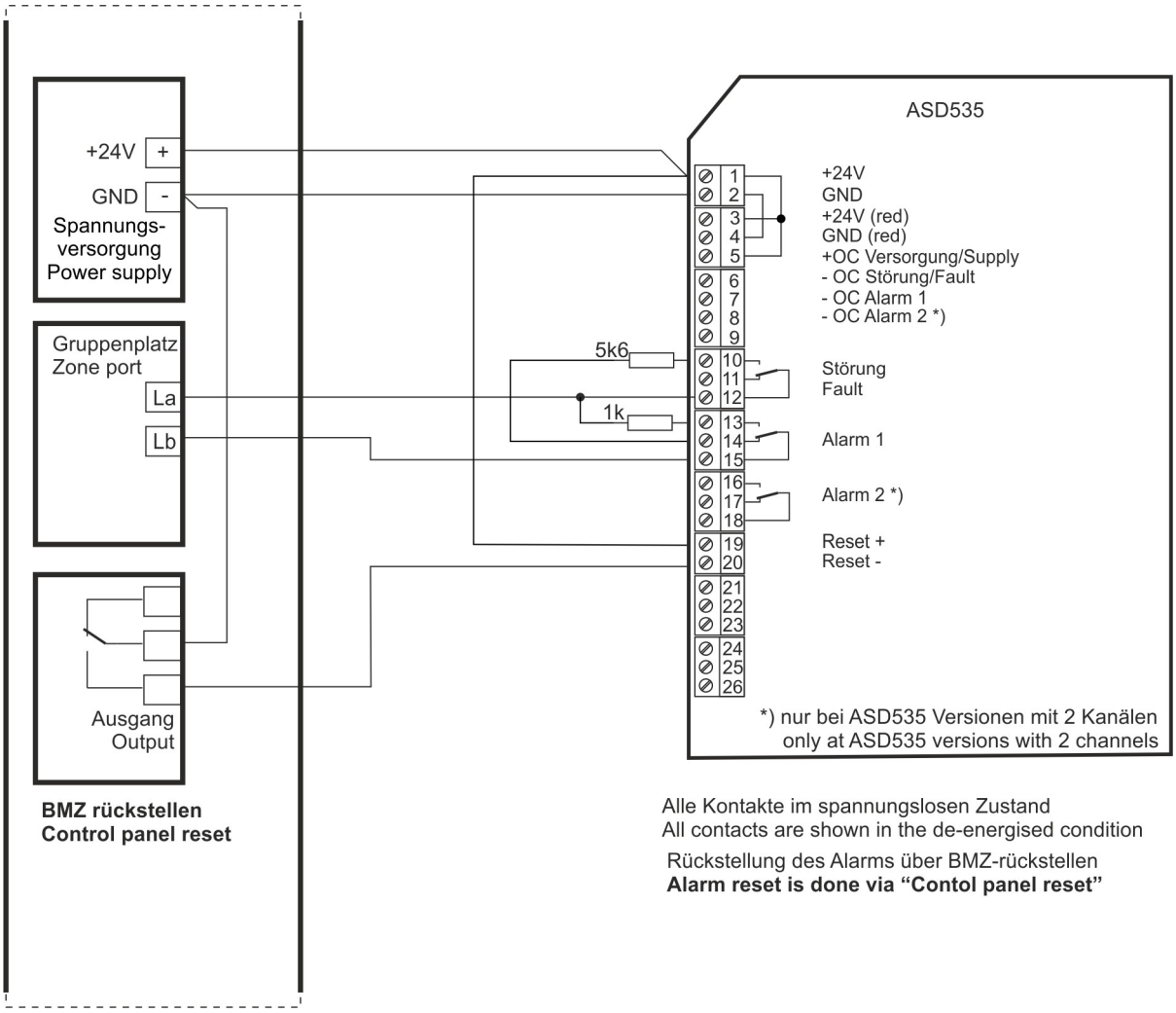
2.13.10.1 Connection with MQZ1000-1



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

*) nur bei ASD535 Versionen mit 2 Kanälen
only at ASD535 versions with 2 channels

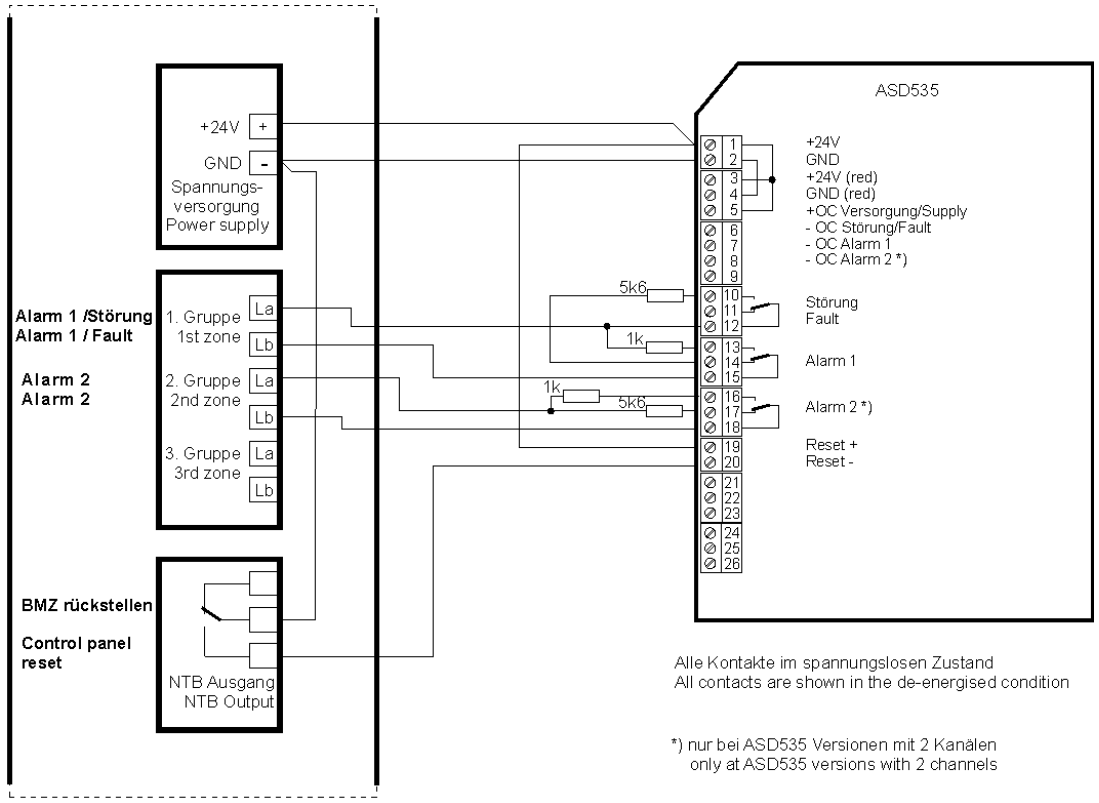
2.13.10.2 Connection – resetting by means of relay contact



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

Rückstellung des Alarms über BMZ-rückstellen
Alarm reset is done via "Contol panel reset"

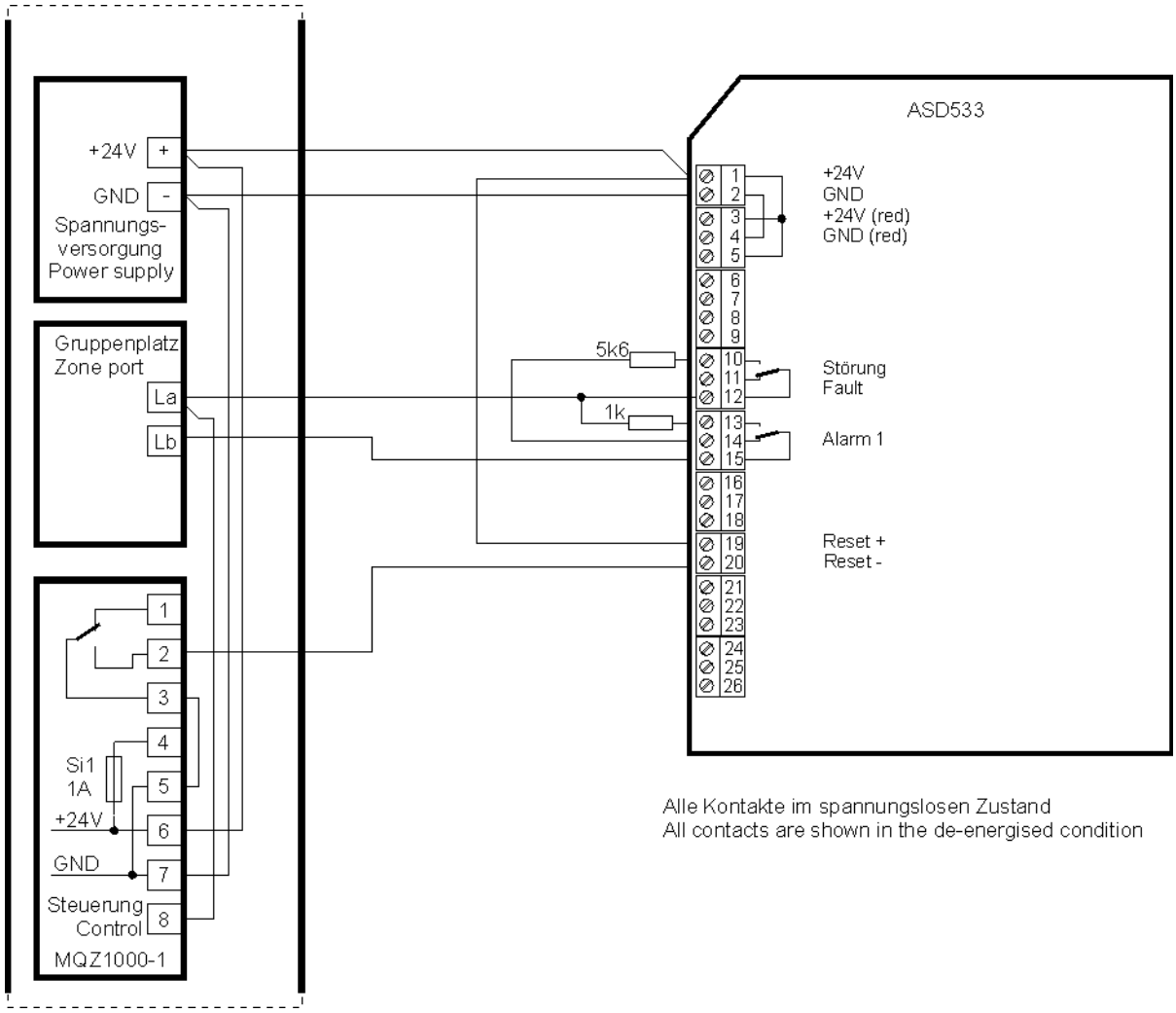
2.13.11 Aspirating smoke detector ASD535 – 2 channels



All contacts are shown in the de-energised condition.
Alarm reset is done via "Contol panel reset"

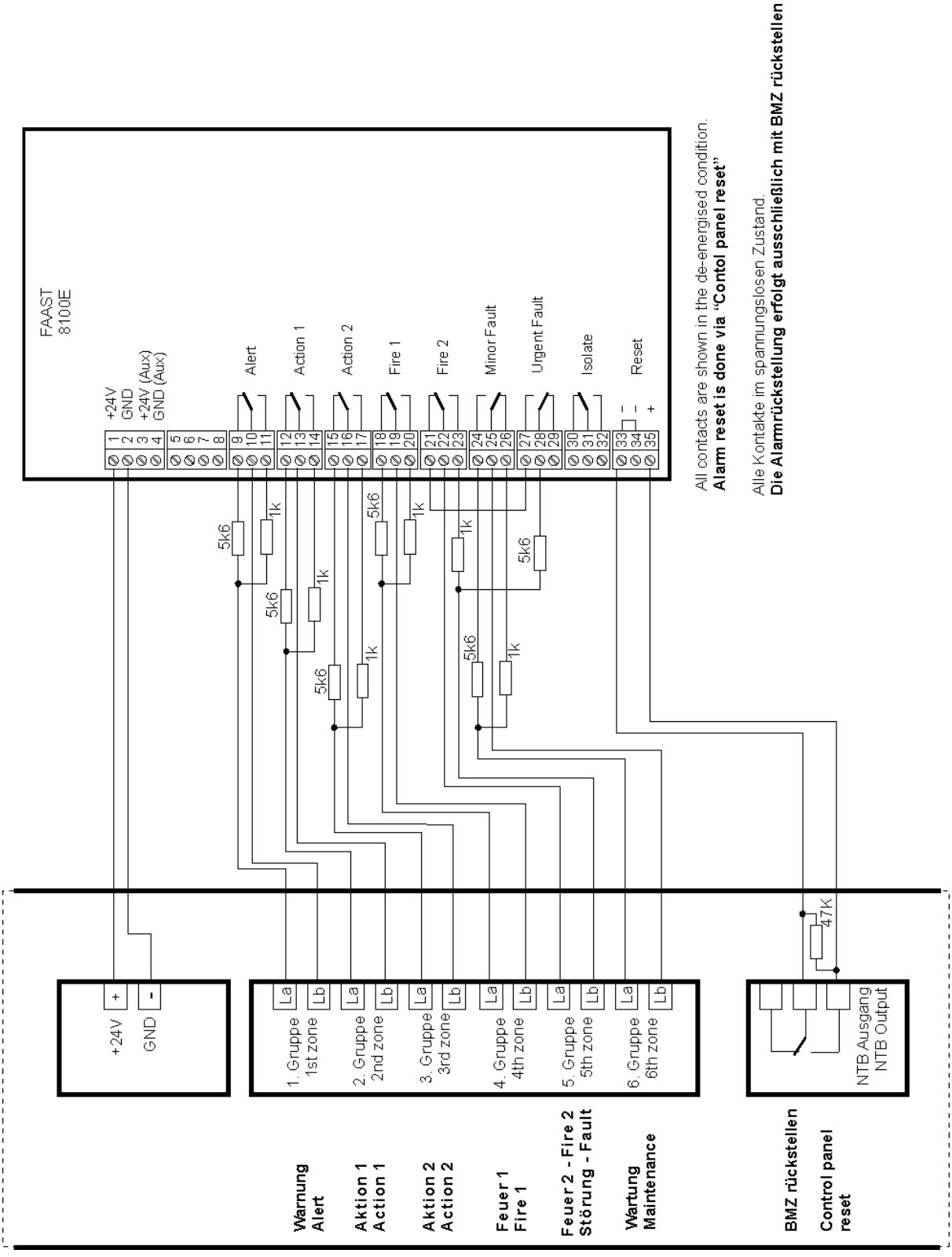
Alle Kontakte im spannungslosen Zustand.
Die Alarmrückstellung erfolgt ausschließlich mit BMZ rückstellen!

2.13.12 Aspirating smoke detector ASD533

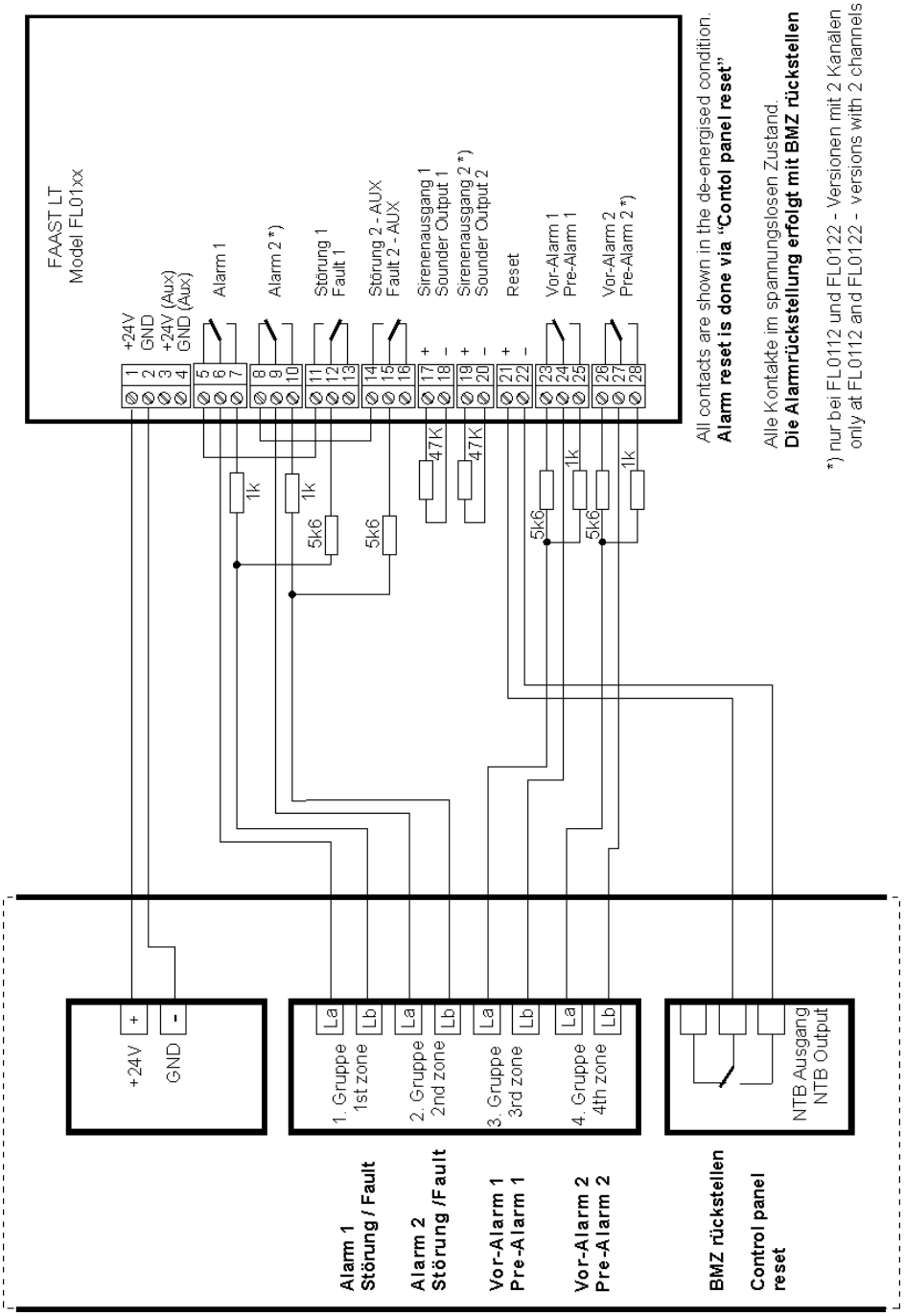


Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

2.13.13 Aspirating smoke detector FAAST 8100E



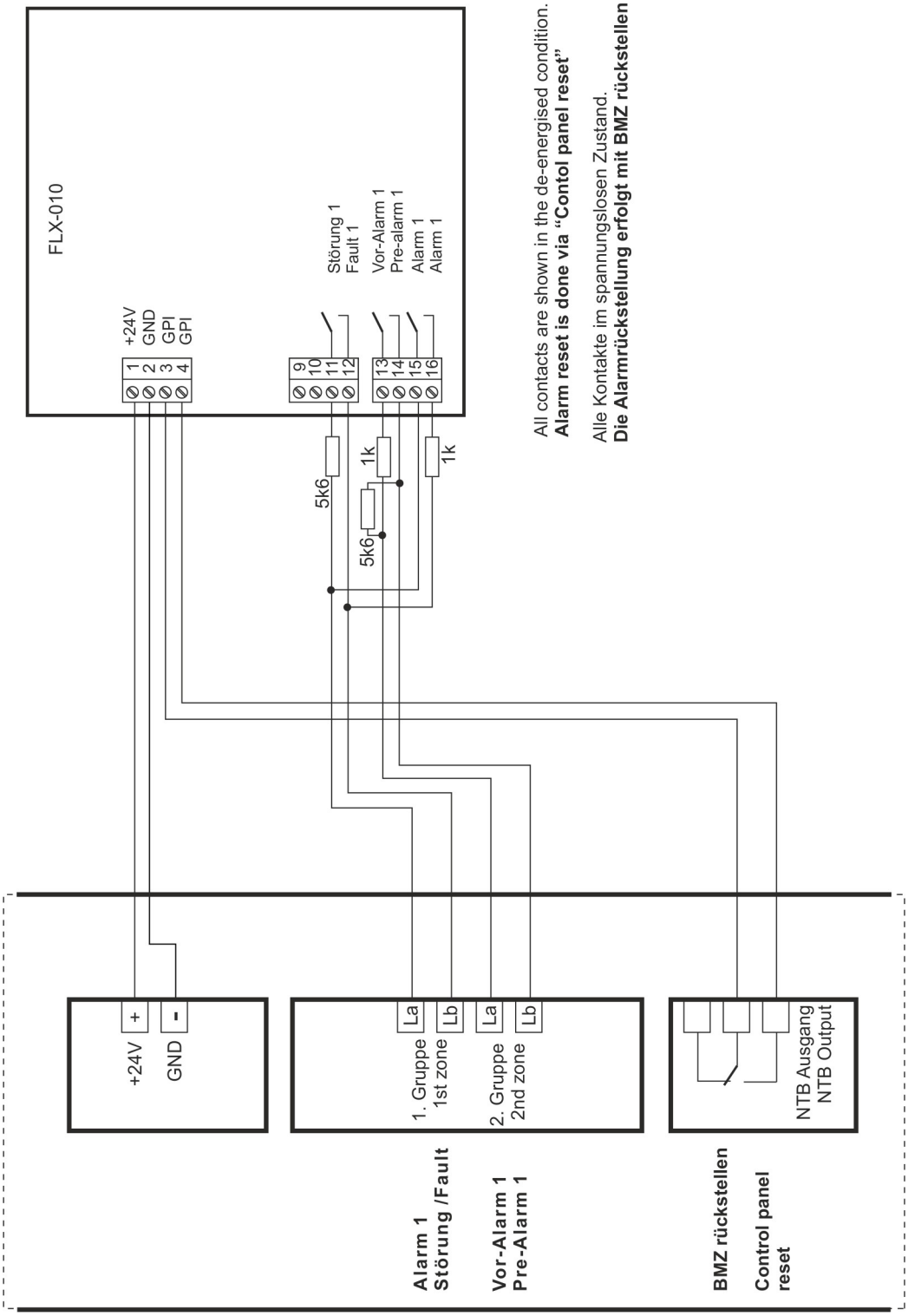
2.13.14 Aspirating smoke detector FAAST LT – Model FL01xx – with 2 channels



The **Optical Laser Smoke Detector F-SEN-SSE** (Art. No. 241124) serves as a replacement for the laser smoke sensor that is installed in an aspirating smoke detector Series FAAST LT. The detector is electrically and functionally identical with the Optical Laser Smoke Detector 72051EI, but for reasons of space it is integrated in a flatter housing. The Optical Laser Smoke Detector F-SEN-SSE is intended exclusively for installation in an aspirating smoke detector. An Optical Laser Smoke Detector F-SEN-SSE of an aspirating smoke detector can be replaced without difficulty with a detector of the same type.

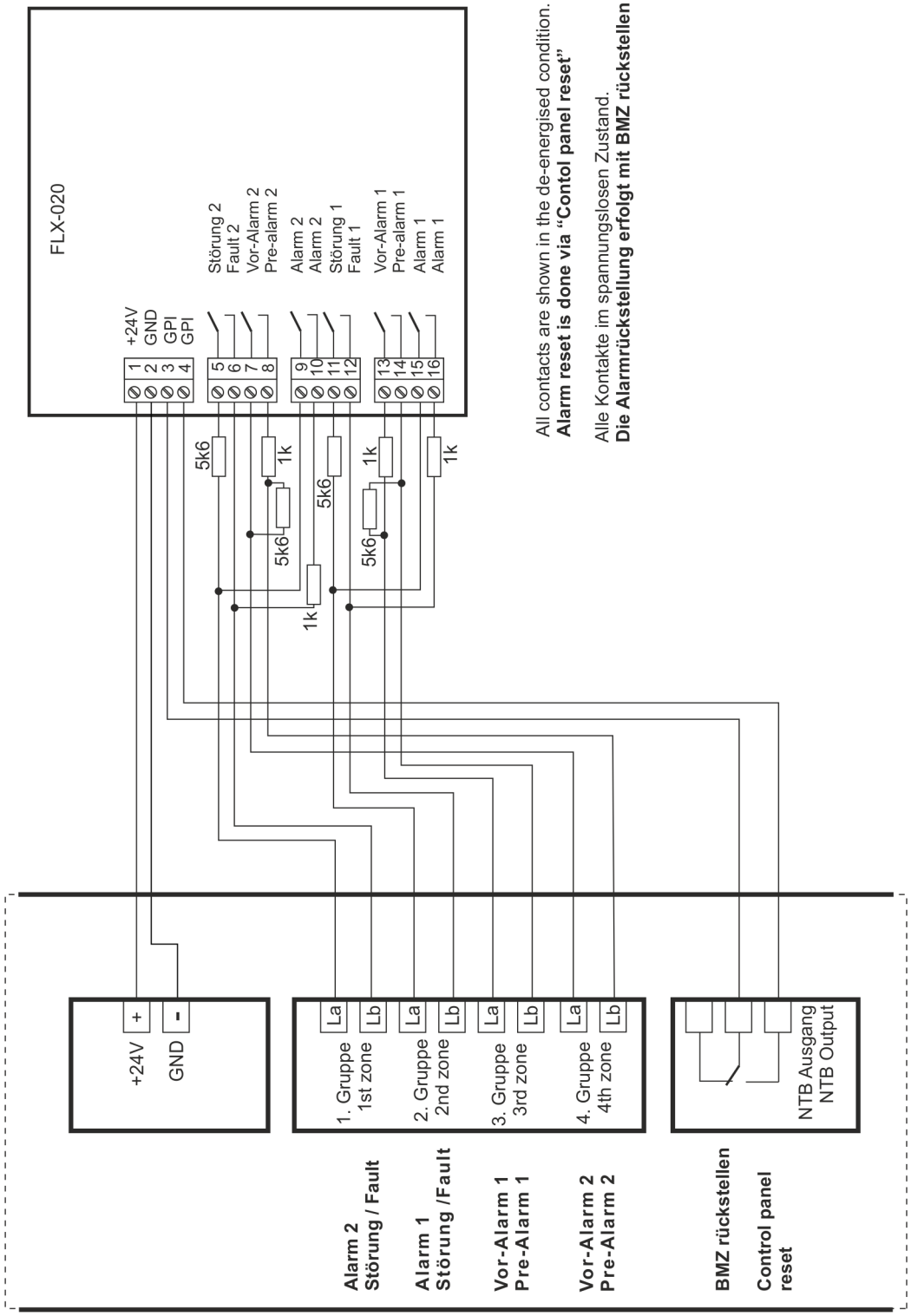
If an Optical Laser Smoke Detector 7251 of a FAAST LT is replaced with a detector F-SEN-SSE, the **firmware of the aspirating smoke detector must also be updated.** For this purpose, we will provide you with the manufacturer's instructions, if necessary.

2.13.15 Aspirating smoke detector FAAST FLEX – model FLX-010 – with 1 channel



According to the installation instructions, the conditions alarm, pre-alarm and fault only allow their property Latched or Unlatched to be set jointly.
If "Latched" has been set, every message must be deleted with a control panel reset.

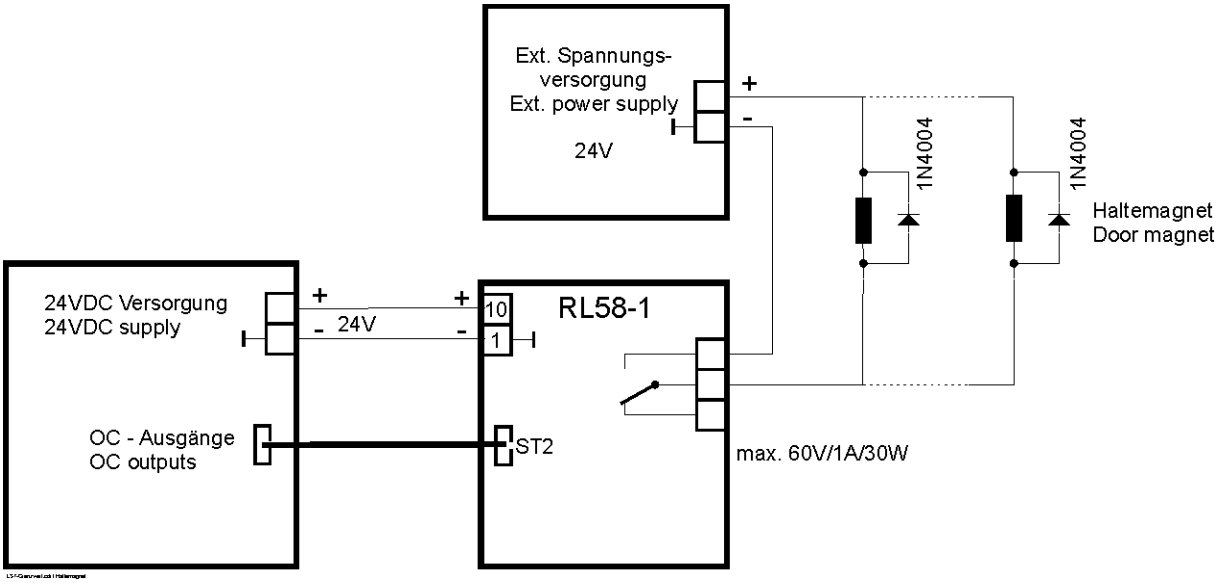
2.13.16 Aspirating smoke detector FAAST FLEX – model FLX-020 – with 2 channels



According to the installation instructions, the conditions alarm, pre-alarm and fault only allow their property Latched or Unlatched to be set jointly.
If "Latched" has been set, every message must be deleted with a control panel reset.

2.14 Connection of door magnets

When connecting door magnets, please make sure that the nominal current of the relay contact is not exceeded. Additionally, a separate 24VDC electric circuit and a clamping diode 1N4004 have to be used for the door magnet.

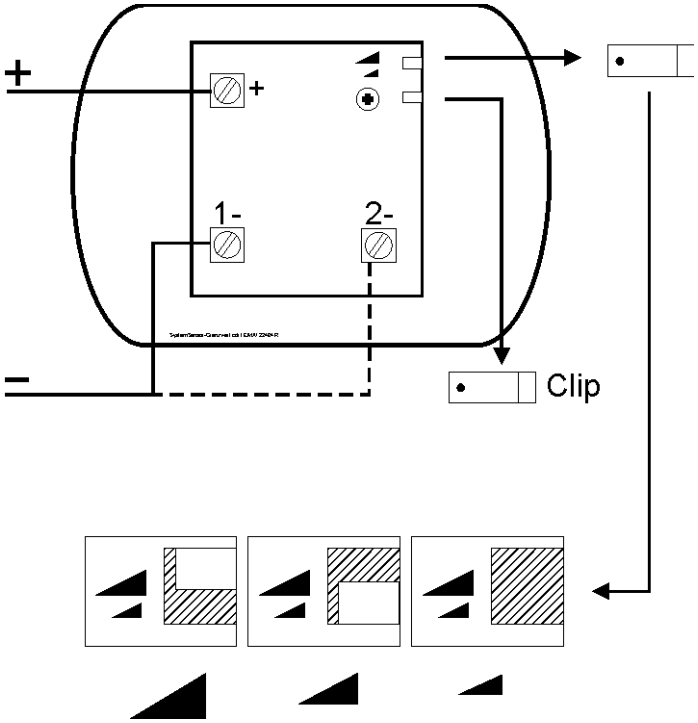


2.15 Connection of sounders and strobes

This section shows the connection of conventional sounders and strobes.

An end-of-line element has to be connected to the last alarming device, if a monitored siren output is used for the actuation.

2.15.1 Sounder EMA1224B4x



The connection and setting of the siren tone is explained in the following table.

ATTENTION: the old version and the new version differ just slightly in their type code.

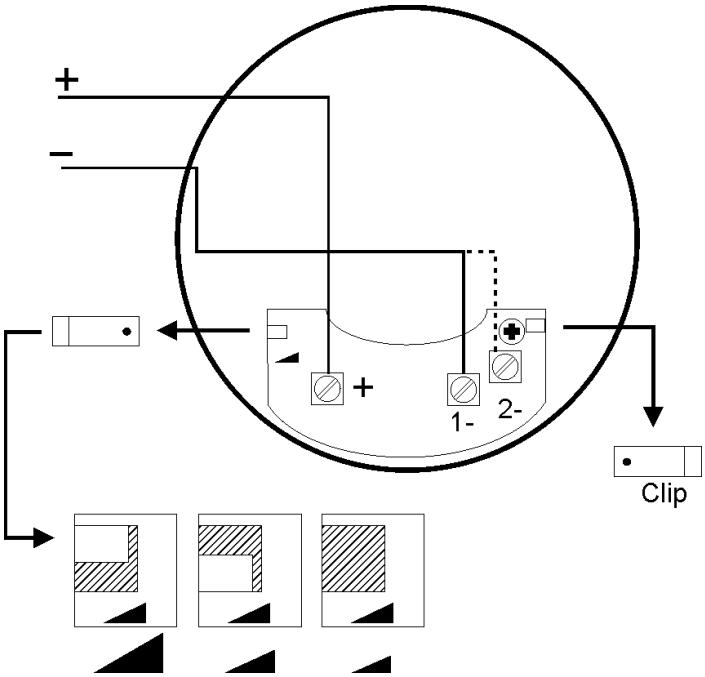
2.15.1.1 EMA1224B4R D / EMA1224B4W D (old version)

Connection Screw terminals				
+	**1-**	**2-**	**Clip**	**Tone**
✓	✓		✓	1200-500Hz DIN tone
✓		✓	✓	1200-500Hz DIN tone
✓	✓		removed	500-1200Hz Slow whoop tone
✓		✓	removed	800Hz continuous tone

2.15.1.2 EMA1224B4R-D / EMA1224B4W-D (new version)

Connection Screw terminals				
+	**1-**	**2-**	**Clip**	**Tone**
✓	✓		✓	1200-500Hz DIN tone
✓		✓	✓	800Hz continuous tone
✓	✓		removed	500-1200Hz Slow whoop tone
✓		✓	removed	1200-500Hz DIN tone

2.15.2 Sounder DBS1224B4x



The connection and setting of the siren tone is explained in the following table.

ATTENTION: the old version and the new version differ just slightly in their type code.

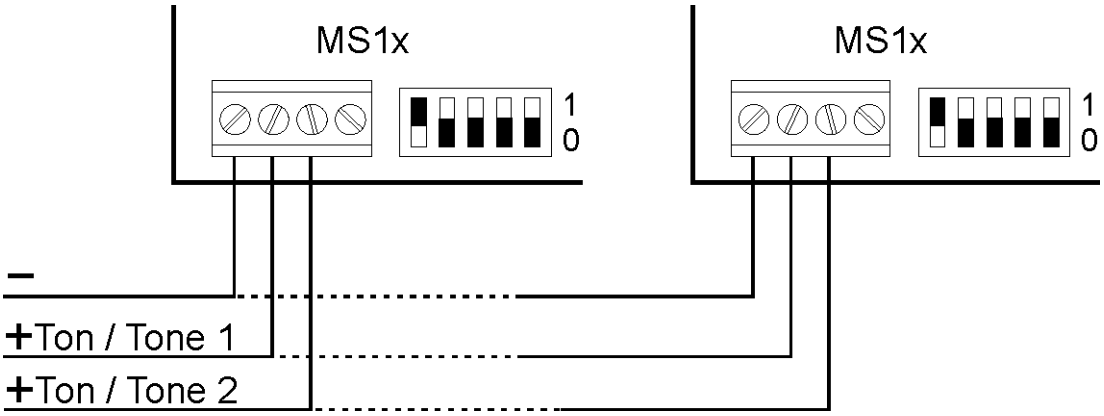
2.15.2.1 Sounder DBS1224B4W D (old version)

Connection Screw terminals				
+	1-	2-	Clip	Tone
✓	✓		✓	1200-500Hz DIN tone
✓		✓	✓	1200-500Hz DIN tone
✓	✓		removed	500-1200Hz Slow whoop tone
✓		✓	removed	800Hz continuous tone

2.15.2.2 Sounder DBS1224B4W-D (new version)

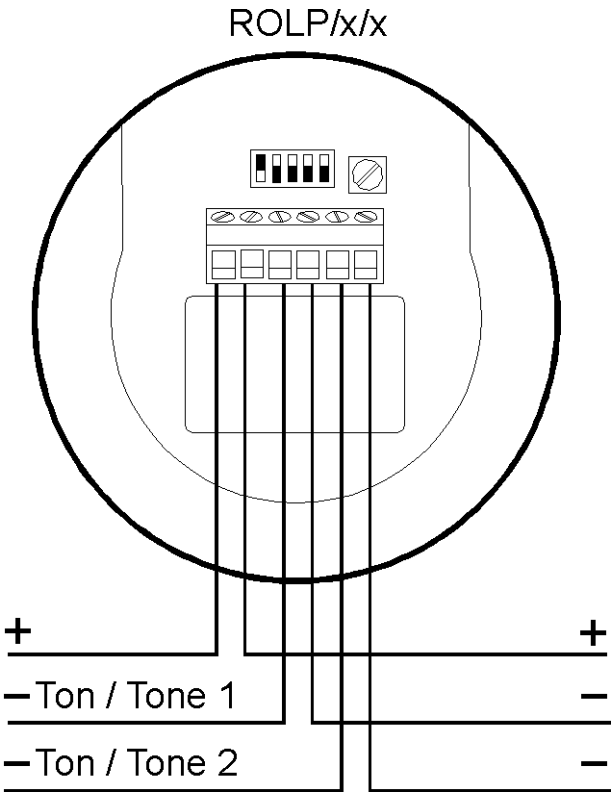
Connection Screw terminals				
+	1-	2-	Clip	Tone
✓	✓		✓	1200-500Hz DIN tone
✓		✓	✓	800Hz continuous tone
✓	✓		removed	500-1200Hz Slow whoop tone
✓		✓	removed	1200-500Hz DIN tone

2.15.3 Sounder MS1R



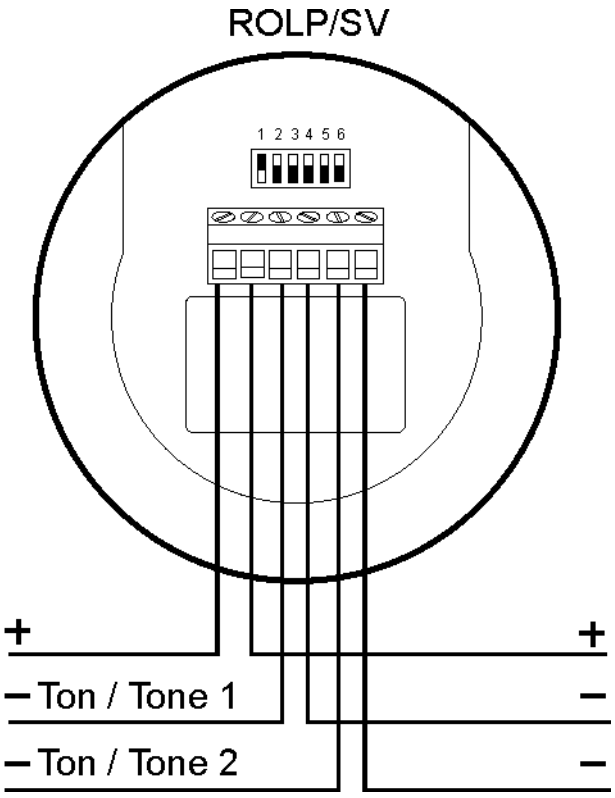
DIP switch						
1	**2**	**3**	**4**	**5**	**Tone 1**	**Tone 2**
1	0	0	0	0	1200-500Hz DIN tone	1000Hz continuous tone
0	1	0	0	0	500-1200Hz Slow whoop tone	1000Hz continuous tone

2.15.4 Sounder ROLP



DIP switch						
1	**2**	**3**	**4**	**5**	**Tone 1**	**Tone 2**
1	1	0	0	0	1200-500Hz DIN tone	970Hz – BS tone
1	1	0	0	1	500-1200Hz Slow whoop tone	970Hz – BS tone
1	0	0	1	0	970Hz – BS tone	970Hz – BS tone

2.15.5 Sounder ROLP/SV

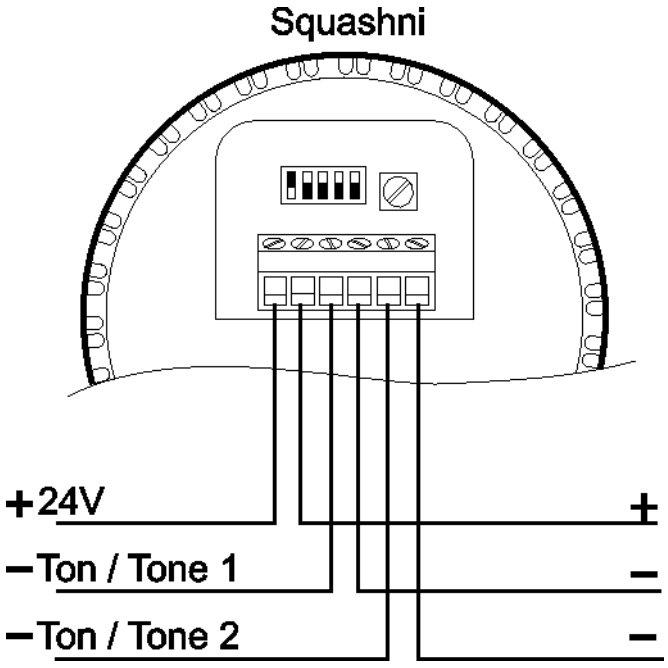


DIP switch 1 is used for setting the sound level: 0 = low; 1 = high. This corresponds to a difference of 20dB.

The DIP switches 2 through 6 allow you to set the tones. Tone 2 results from the switch position.

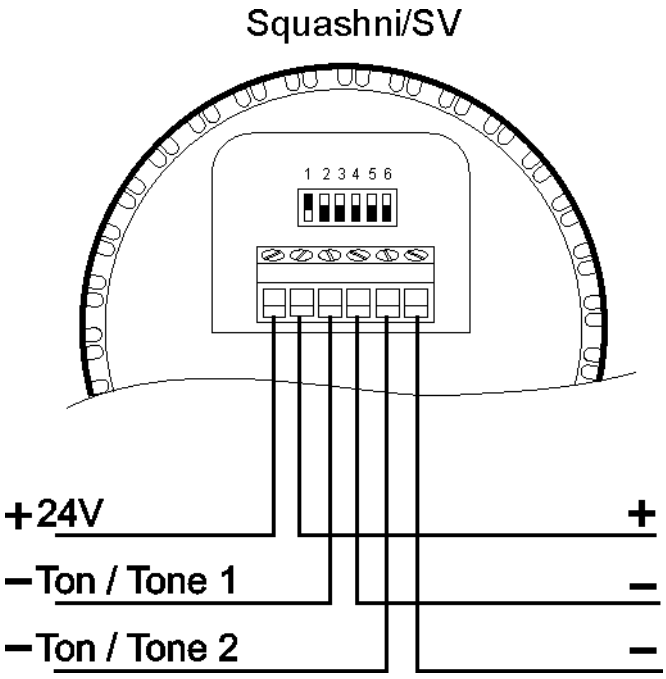
DIP switch						
2	**3**	**4**	**5**	**6**	**Tone 1**	**Tone 2**
1	1	0	0	0	1200-500Hz DIN tone	970Hz – BS tone
1	1	0	0	1	500-1200Hz Slow whoop tone	970Hz – BS tone
1	0	0	1	0	970Hz – BS tone	970Hz – BS tone

2.15.6 Sounder SQUASHNI



DIP switch						
1	**2**	**3**	**4**	**5**	**Tone 1**	**Tone 2**
1	1	0	0	0	1200-500Hz DIN tone	970Hz – BS tone
1	1	0	0	1	500-1200Hz Slow whoop tone	970Hz – BS tone
1	0	0	1	0	970Hz – BS tone	970Hz – BS tone

2.15.7 Sounder SQUASHNI/SV

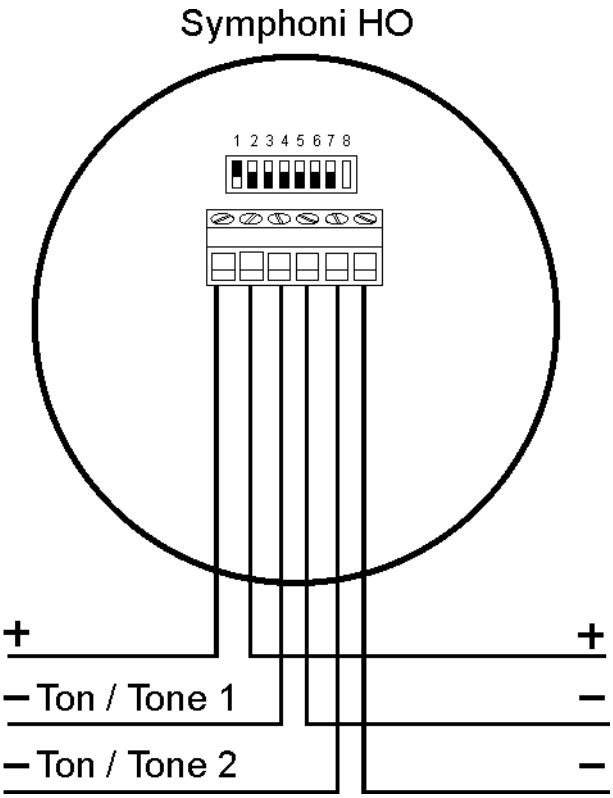


DIP switch 1 is used for setting the sound level: 0 = low; 1 = high.

The DIP switches 2 through 6 allow you to set the tones. Tone 2 results from the switch position.

DIP switch						
2	**3**	**4**	**5**	**6**	**Tone 1**	**Tone 2**
1	1	0	0	0	1200-500Hz DIN tone	970Hz – BS tone
1	1	0	0	1	500-1200Hz Slow whoop tone	970Hz – BS tone
1	0	0	1	0	970Hz – BS tone	970Hz – BS tone

2.15.8 Sounder SYMPHONI HO



By means of the DIP switches 1 through 5 the tones can be set. Tone 2 results from the switch position.

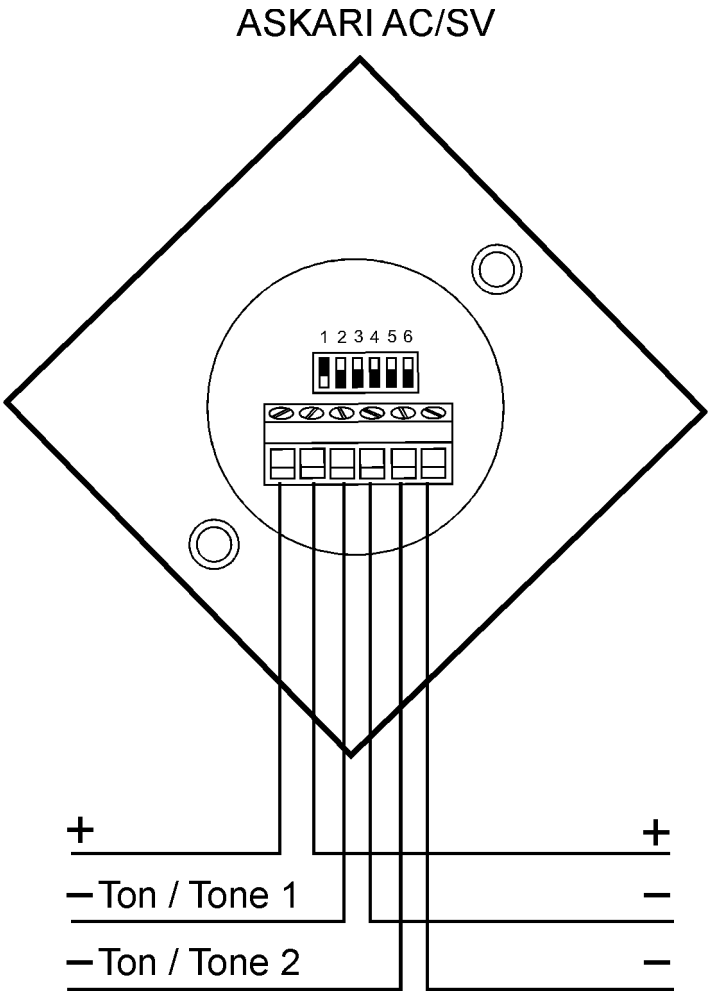
DIP switch						
1	**2**	**3**	**4**	**5**	**Tone 1**	**Tone 2**
1	1	0	0	0	1200-500Hz DIN tone	970Hz – BS tone
1	1	0	0	1	500-1200Hz Slow whoop tone	970Hz – BS tone
1	0	0	1	0	970Hz – BS tone	970Hz – BS tone

The DIP switches 6 and 7 are used for setting the sound level.

DIP SWITCH		
6	**7**	**Sound level**
1	1	Very high
1	0	High
0	1	Medium
0	0	Low

DIP switch 8 is not used.

2.15.9 Sounder ASKARI - Compact/AC/SV/R/S – Compact/AC/SV/W1/S

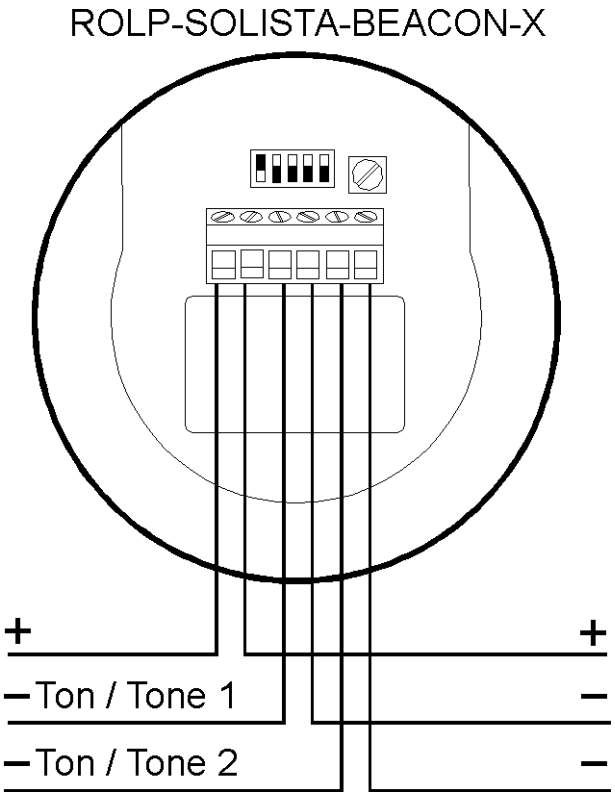


DIP switch 1 is used for setting the sound level: 0 = high; 1 = very high.

By means of the DIP switches 2 through 6 the tones can be set. Tone 2 results from the switch position.

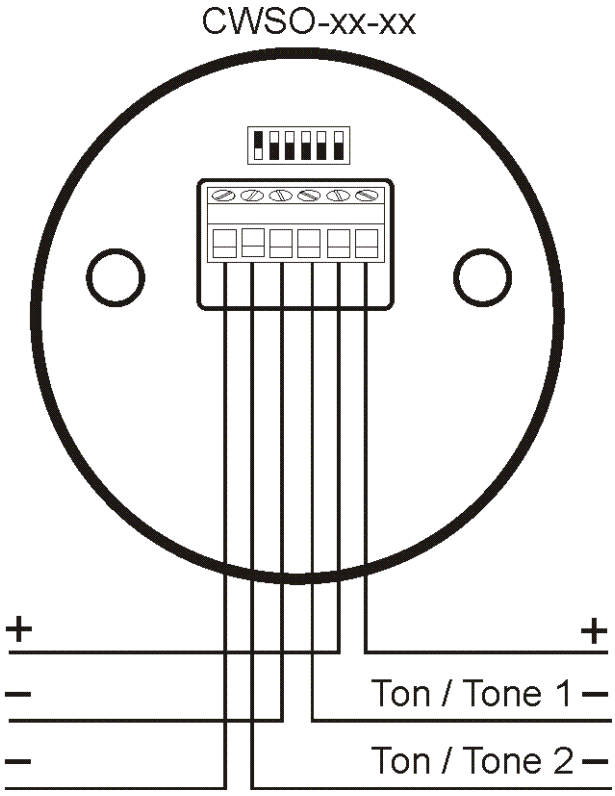
DIP switch						
2	**3**	**4**	**5**	**6**	**Tone 1**	**Tone 2**
1	1	0	0	0	1200-500Hz DIN tone	970Hz – BS tone
1	1	0	0	1	500-1200Hz Slow whoop tone	970Hz – BS tone
1	0	0	1	0	970Hz – BS tone	970Hz – BS tone

2.15.10 Sounder-Strobe ROLP-SOLISTA



DIP switch						
1	**2**	**3**	**4**	**5**	**Tone 1**	**Tone 2**
1	1	0	0	0	1200-500Hz DIN tone	970Hz – BS tone
1	1	0	0	1	500-1200Hz Slow whoop tone	970Hz – BS tone
1	0	0	1	0	970Hz – BS tone	970Hz – BS tone

2.15.11 Sounder CWSO-xx-xx

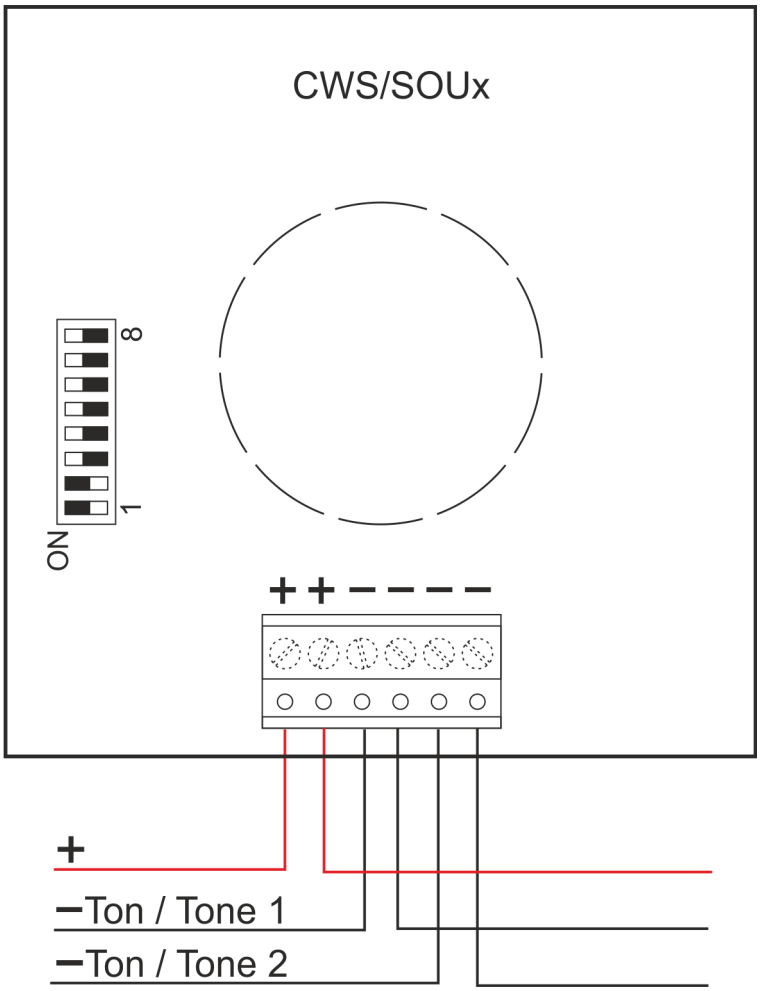


DIP switch 6 is used for setting the sound level: 0 = medium; 1 = high.

By means of the DIP switches 1 through 5 the tones can be set. Tone 2 results from the switch position.

DIP switch						
1	**2**	**3**	**4**	**5**	**Tone 1**	**Tone 2**
1	0	1	0	1	1200-500Hz DIN tone	DIN, PFEER
1	1	1	0	1	500-1200Hz Slow whoop tone	NEN2575
1	1	0	0	1	800Hz – BS tone	BS5839 Pt1

2.15.12 Sounder-Strobe CWS/SOUx



By means of the DIP switches 1 through 5 the tones can be set. Tone 2 results from the switch position.

DIP switch						
1	**2**	**3**	**4**	**5**	**Tone 1**	**Tone 2**
0	0	1	1	1	1200-500Hz DIN tone	800Hz
1	0	1	0	1	500-1200Hz Slow whoop	500-1200Hz Slow whoop
0	1	0	1	1	970Hz – BS tone	1000Hz – BS tone

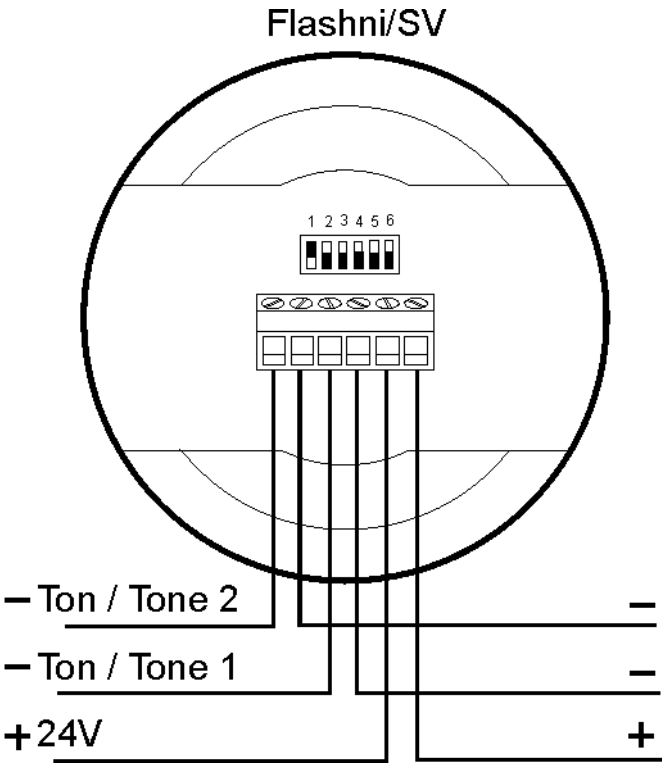
The DIP switches 6 and 7 are used for setting the sound level.

DIP SWITCH		
6	**7**	**Sound level**
1	1	Very high
0	1	High
1	0	Medium
0	0	Low

DIP switch 8 is not used.

2.15.13 Sounder-Strobe FLASHNI-SV

The end-of-line resistor Rab has to be connected to the last sounder/strobe, provided that the sounder/strobe is actuated via a monitored output.

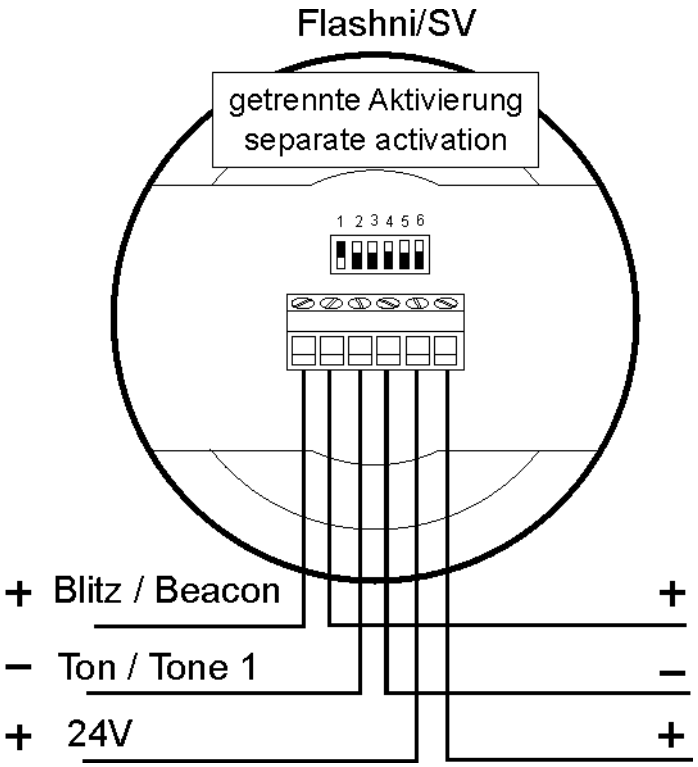


DIP switch 1 is used for setting the sound level: 0 = low; 1 = high.

The DIP switches 2 through 6 allow you to set the tones. Tone 2 results from the switch position.

DIP switch						
2	**3**	**4**	**5**	**6**	**Tone 1**	**Tone 2**
1	1	0	0	0	1200-500Hz DIN tone	970Hz – BS tone
1	1	0	0	1	500-1200Hz Slow whoop tone	970Hz – BS tone
1	0	0	1	0	970Hz – BS tone	970Hz – BS tone

2.15.14 Sounder-Strobe FLASHNI-SV with separate actuation

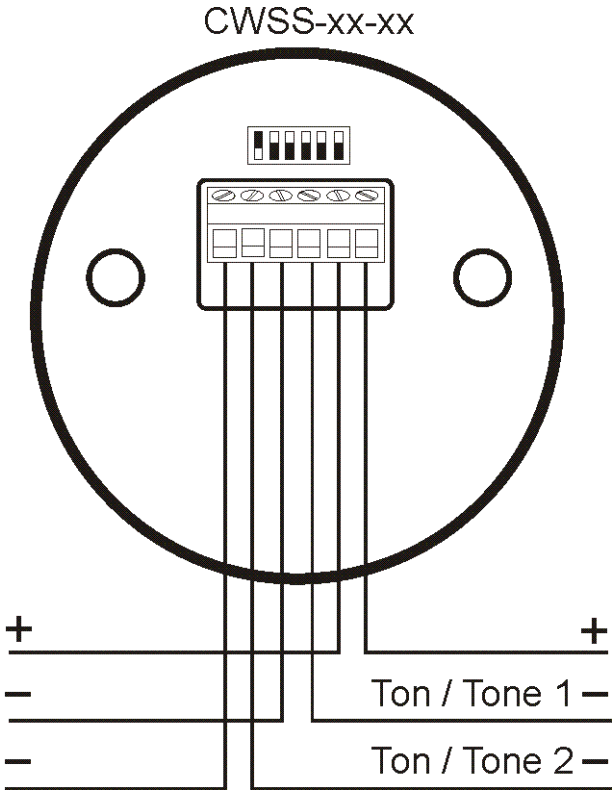


DIP switch 1 is used for setting the sound level: 0 = low; 1 = high.

The DIP switches 2 through 6 allow you to set the tone.

DIP switch					
2	**3**	**4**	**5**	**6**	**Tone 1**
1	1	0	0	0	1200-500Hz DIN tone
1	1	0	0	1	500-1200Hz Slow whoop tone
1	0	0	1	0	970Hz – BS tone

2.15.15 Sounder-Strobe CWSS-xx-xx

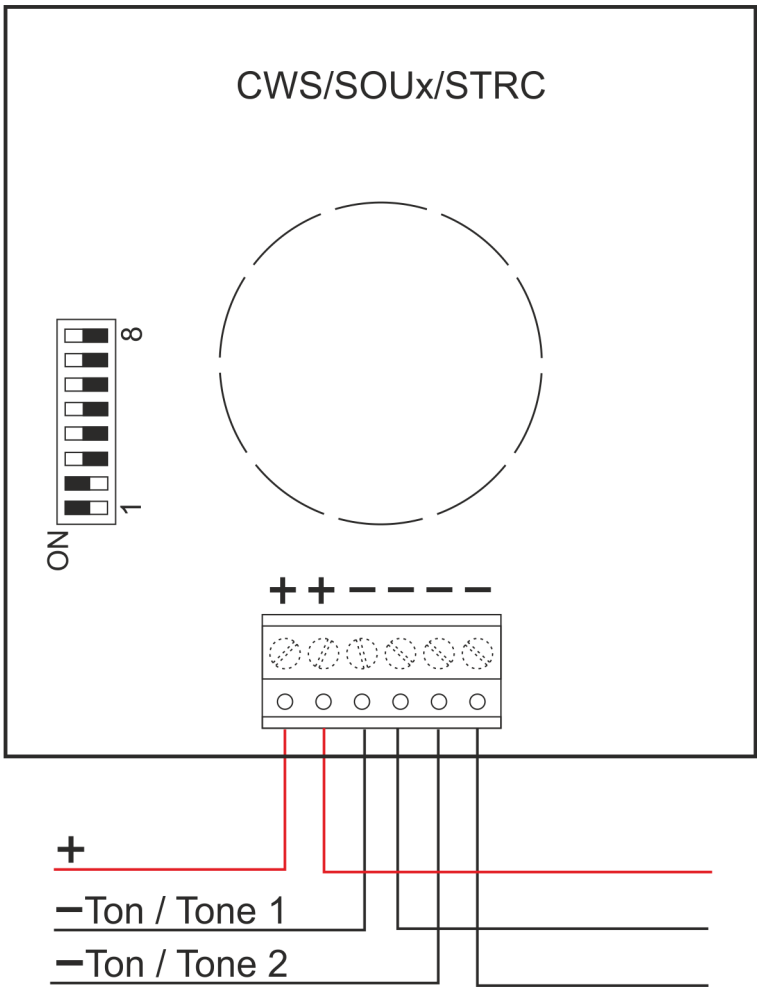


DIP switch 6 is used for setting the sound level: 0 = medium; 1 = high.

By means of the DIP switches 1 through 5 the tones can be set. Tone 2 results from the switch position.

DIP switch						
1	**2**	**3**	**4**	**5**	**Tone 1**	**Tone 2**
1	0	1	0	1	1200-500Hz DIN tone	DIN, PFEER
1	1	1	0	1	500-1200Hz Slow whoop tone	NEN2575
1	1	0	0	1	800Hz – BS tone	BS5839 Pt1

2.15.16 Sounder-Strobe CWS/SOUx/STRC



By means of the DIP switches 1 through 5 the tones can be set. Tone 2 results from the switch position.

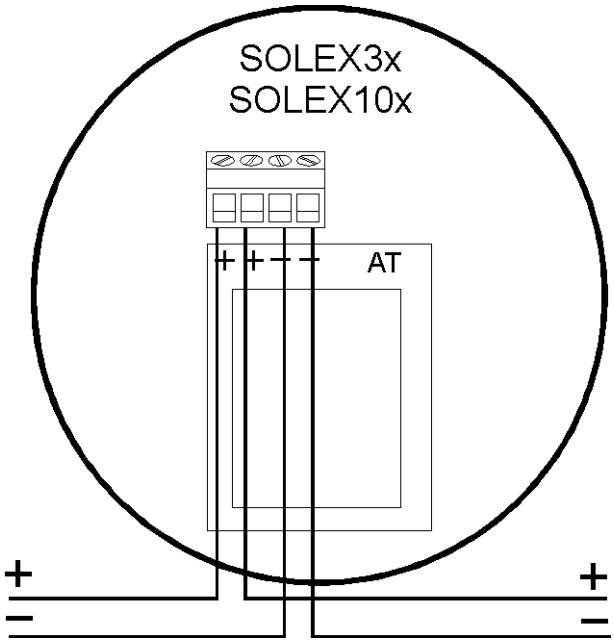
DIP switch						
1	**2**	**3**	**4**	**5**	**Tone 1**	**Tone 2**
0	0	1	1	1	1200-500Hz DIN tone	800Hz
1	0	1	0	1	500-1200Hz Slow whoop tone	500-1200Hz Slow whoop tone
0	1	0	1	1	970Hz – BS tone	1000Hz – BS tone

The DIP switches 6 and 7 are used for setting the sound level.

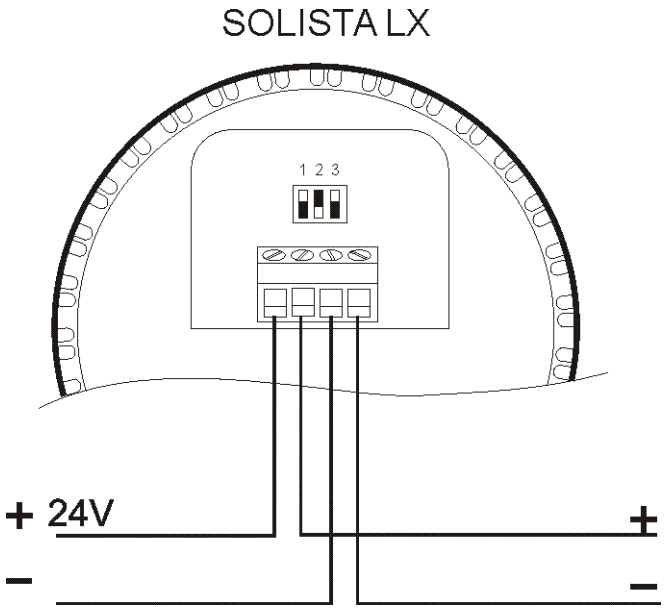
DIP SWITCH		
6	**7**	**Sound level**
1	1	Very high
0	1	High
1	0	Medium
0	0	Low

DIP switch 8 is not used.

2.15.17 Strobe SOLEX



2.15.18 Strobe SOLISTA LX



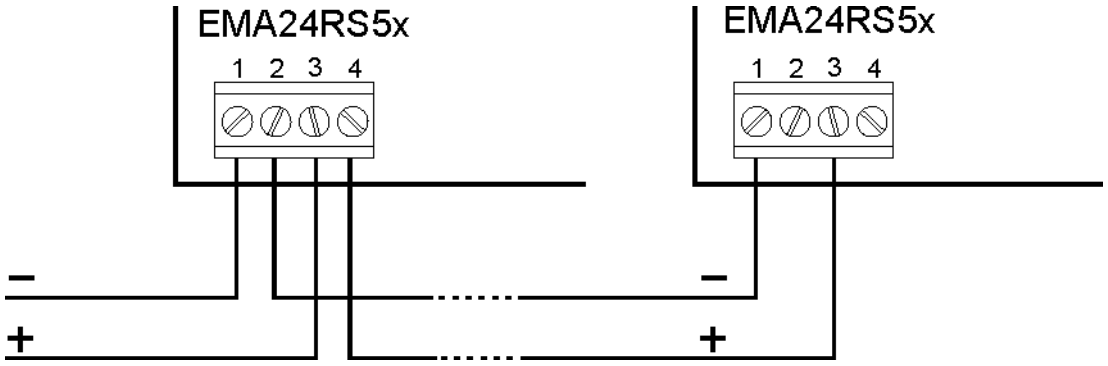
DIP switch 1 is used for setting the flash frequency: 0 = 0.5Hz; 1 = 1Hz.

DIP switch 2 is used for setting the power level: 0 = low; 1 = high.

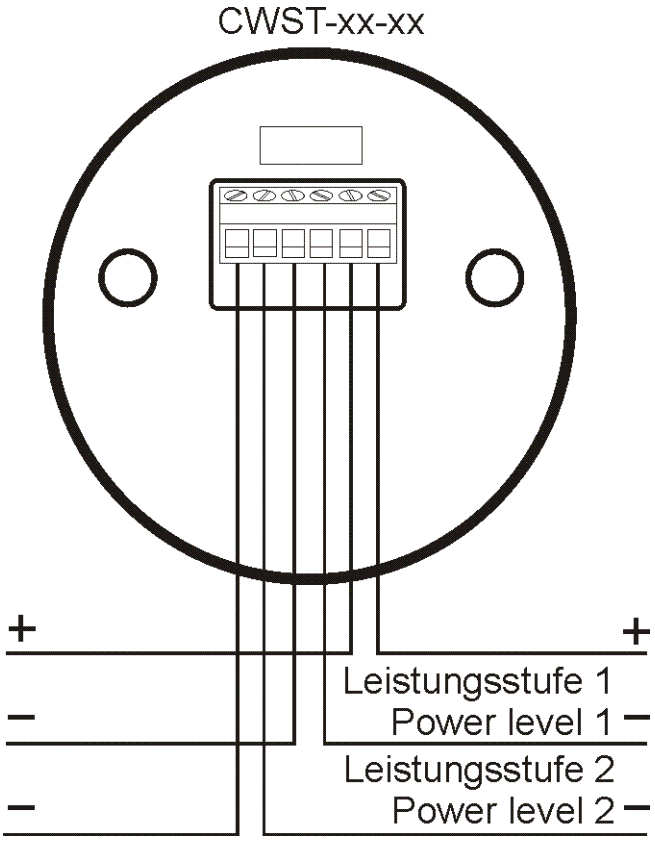
DIP switch 3 is not used.

2.15.19 Strobe EMA24RS5x

The position of the potentiometer for the flash frequency must not be changed.



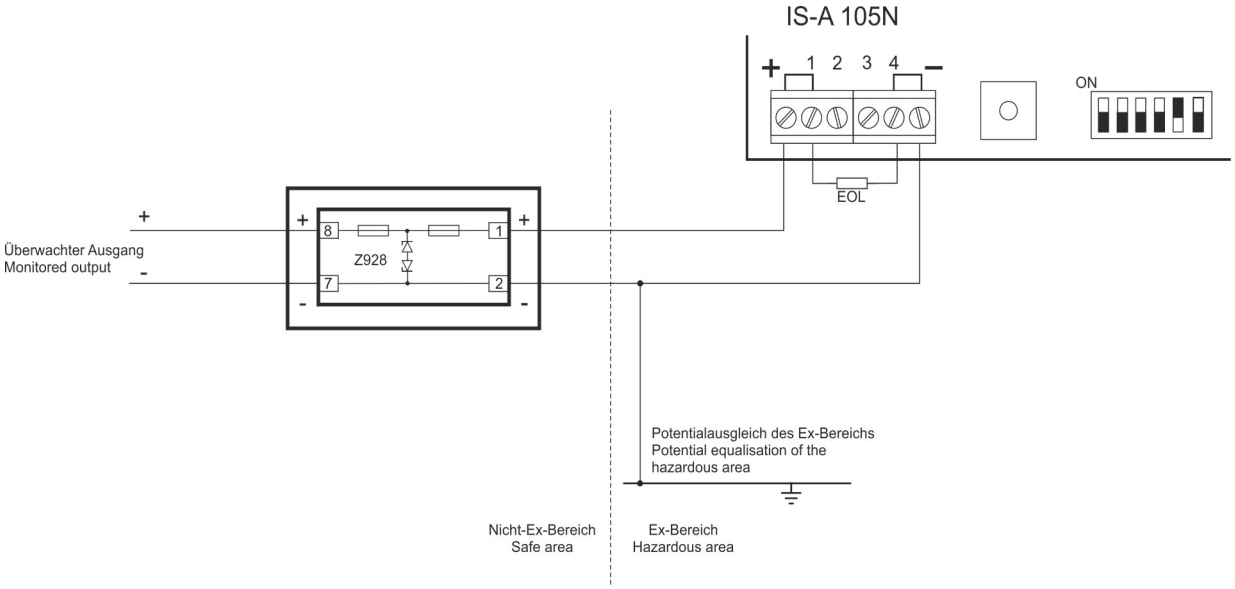
2.15.20 Strobe CWST-xx-xx



2.16 Connecting signalling devices in hazardous areas

2.16.1 IS-A105N – sounder

2.16.1.1 Connection of the Sounder IS-A105N for use of 1 tone



The element designated "EOL" has to be adapted to fit the monitored output.

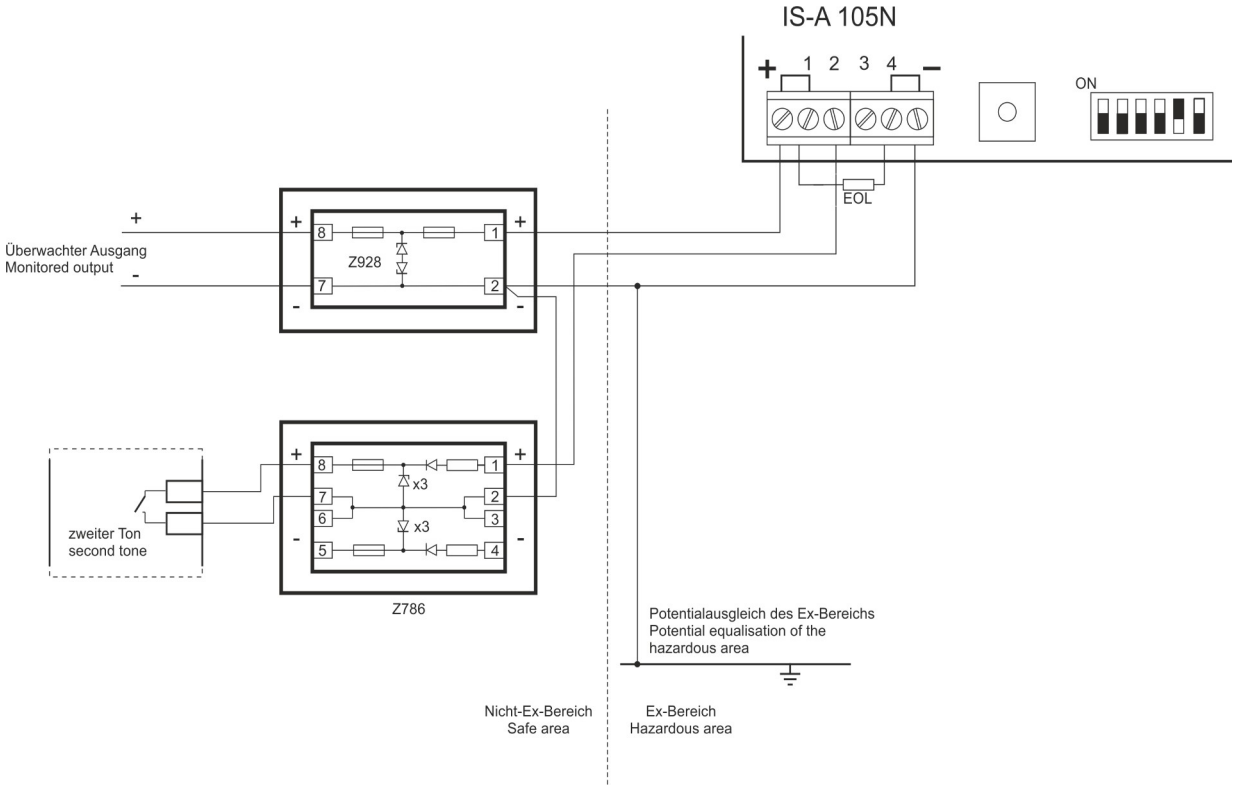
This sounder can be operated via the following outputs: SZ58-3, alarming device 1 output of the ZTB601-1 or monitored alarming device output of the BC216. Due to the potential equalisation near the barrier, an earth fault is indicated. In this case the earth fault detection of the fire detection control panel may be deactivated.

The tone of the sounder is set by means of switches. Here is an excerpt from the list of possible combinations:

DIP								
1	**2**	**3**	**4**	**5**	**6**	**Tone 1**	**Tone 2**	**Tone 3**
0	0	0	1	0	0	DIN tone and PFEER	Continuous tone 800 Hz	Alternating tone 800 / 1000 Hz

The sounder allows activation of up to three different tones. This is done by applying the supply to different terminals.
Tone 1 = terminal 1 and terminal 4
Tone 2 = terminal 2 and terminal 4
Tone 3 = terminal 3 and terminal 4

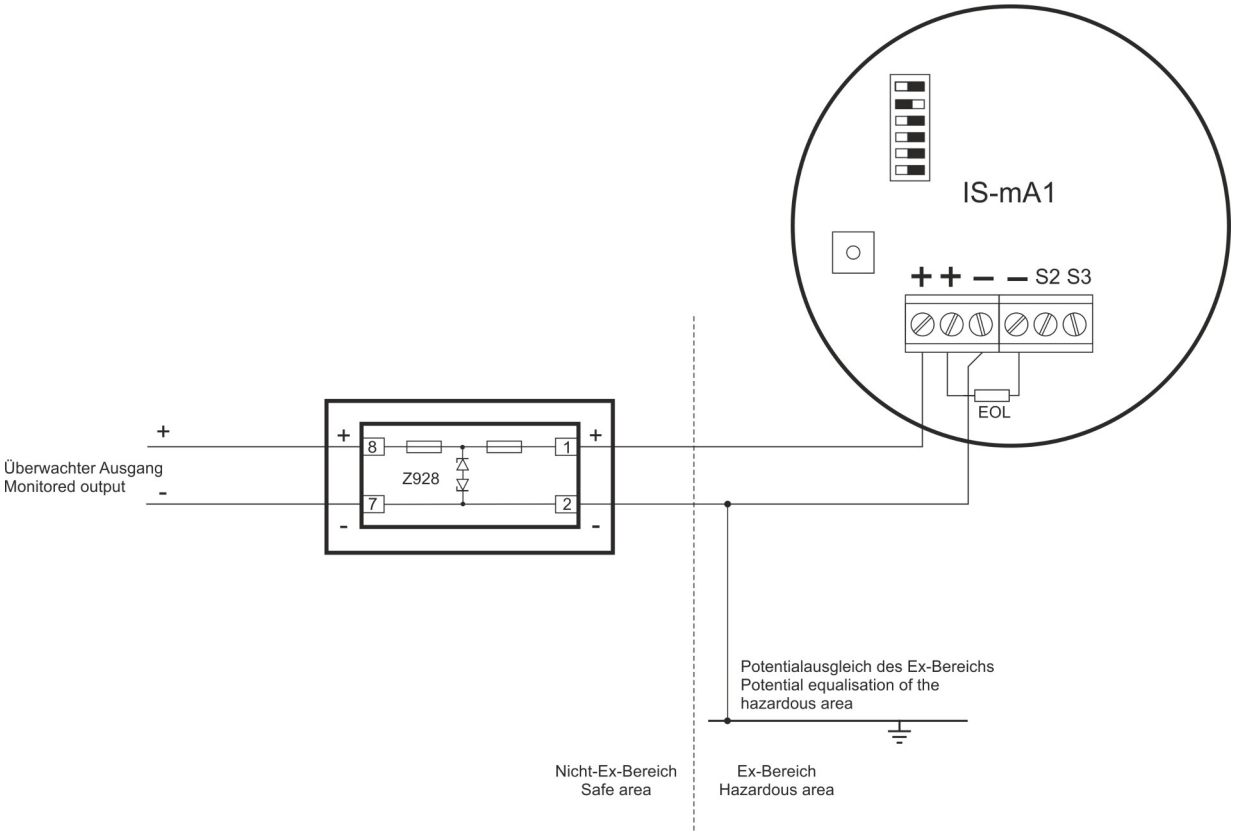
2.16.1.2 Connection of the Sounder IS-A105N for use of 2 tones



This sounder can be operated via the following outputs: SZ58-3, alarming device 1 output of the ZTB601-1 or monitored alarming device output of the BC216. Due to the potential equalisation near the barrier, an earth fault is indicated. In this case the earth fault detection of the fire detection control panel may be deactivated.

2.16.2 IS-mA1 – sounder

2.16.2.1 Connection of the Sounder IS-mA1 for use of 1 tone



The element designated "EOL" has to be adapted to fit the monitored output.

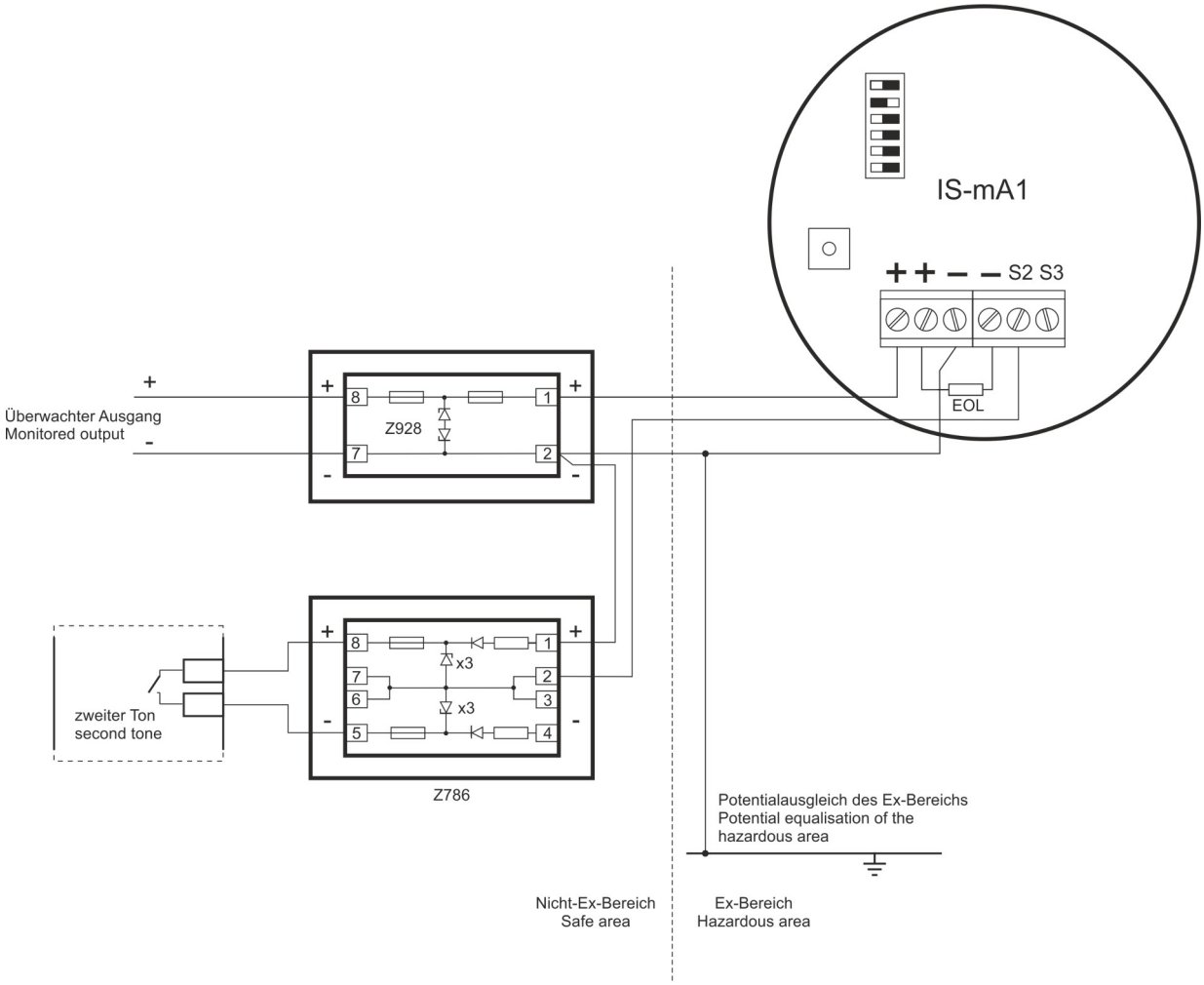
This sounder can be operated via the following outputs: SZ58-3, alarming device 1 output of the ZTB601-1 or monitored alarming device output of the BC216. Due to the potential equalisation near the barrier, an earth fault is indicated. In this case the earth fault detection of the fire detection control panel may be deactivated.

The tone of the sounder is set by means of switches. Here is an excerpt from the list of possible combinations:

DIP							
1	**2**	**3**	**4**	**5**	**Tone 1**	**Tone 2**	**Tone 3**
0	0	0	0	0	Continuous tone (340 Hz)	Alternating tone 800 / 1000 Hz	continuous tone
0	0	0	1	0	DIN tone and PFEER	Continuous tone 800 Hz	Alternating tone 800 / 1000 Hz

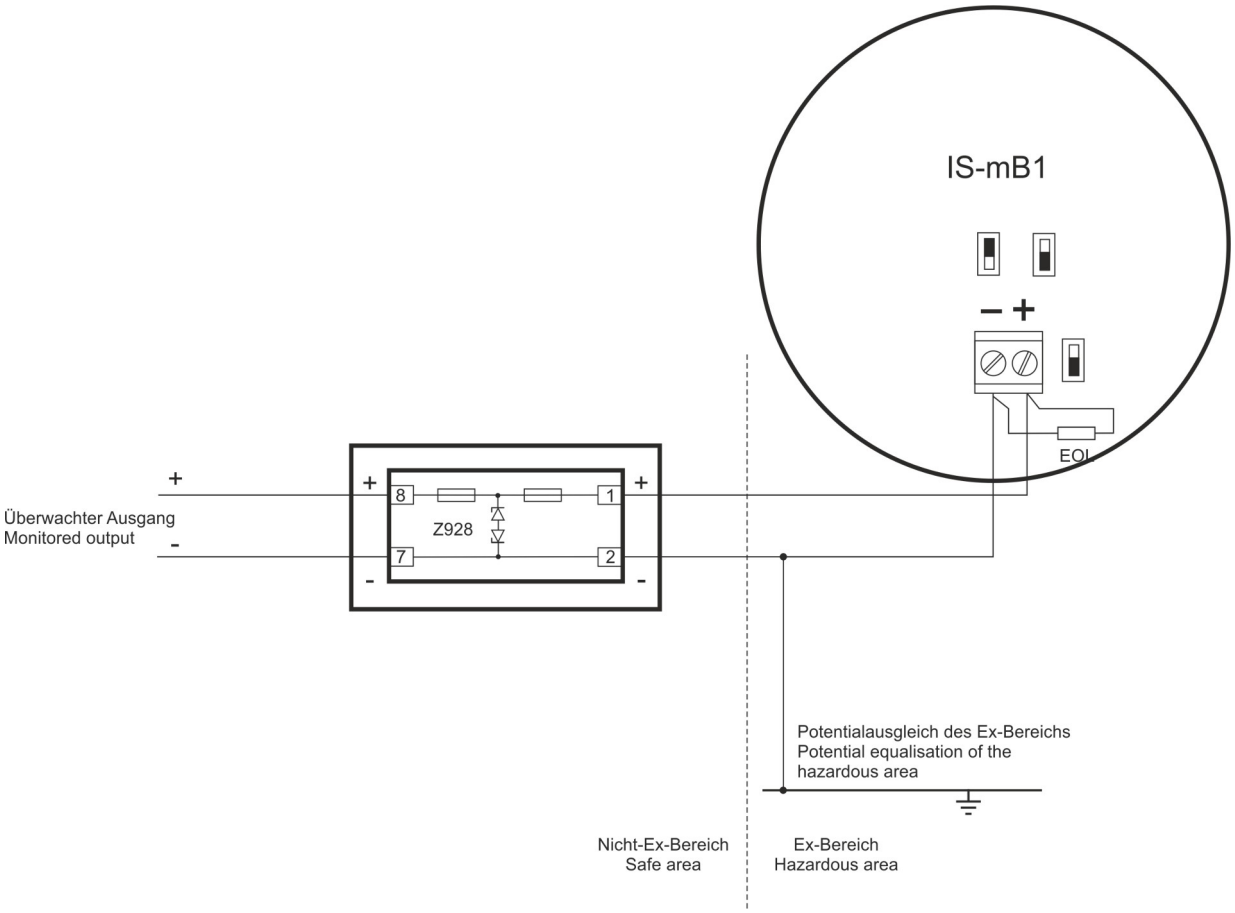
The sounder allows activation of up to three different tones. This is done by applying the supply to different terminals.
Tone 1 = + and -
Tone 2 = + and S2
Tone 3 = + and S3

2.16.2.2 Connection of the Sounder IS-mA1 for use of 2 tones



This sounder can be operated via the following outputs: SZ58-3, alarming device 1 output of the ZTB601-1 or monitored alarming device output of the BC216. Due to the potential equalisation near the barrier, an earth fault is indicated. In this case the earth fault detection of the fire detection control panel may be deactivated.

2.16.3 IS-mB1 – blinking light

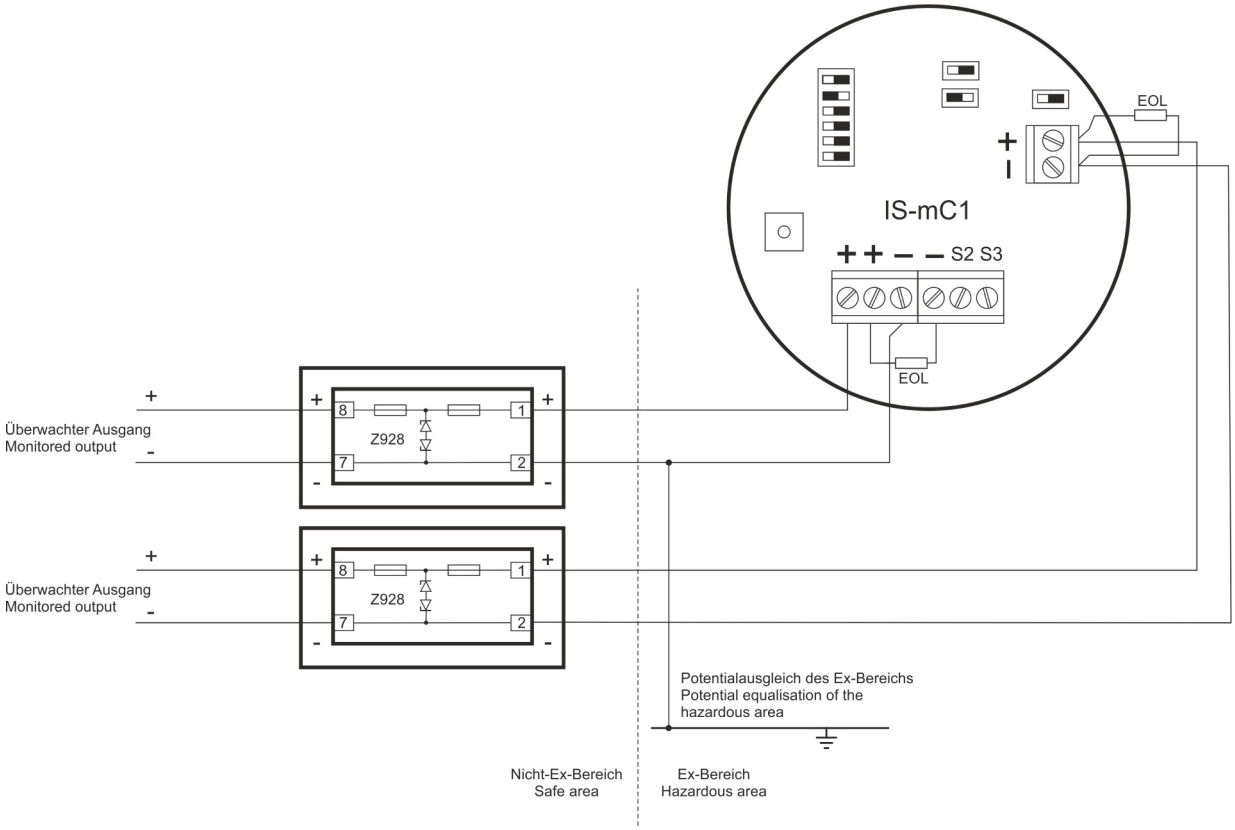


The element designated "EOL" has to be adapted to fit the monitored output.

This blinking light can be operated via the following outputs: SZ58-3, alarming device 1 output of the ZTB601-1 or monitored alarming device output of the BC216. Due to the potential equalisation near the barrier, an earth fault is indicated. In this case the earth fault detection of the fire detection control panel may be deactivated.

2.16.4 IS-mC1 – sounder and blinking light

2.16.4.1 Connection of the Sounder IS-mC1 for use of 1 tone



The element designated "EOL" has to be adapted to fit the monitored output.

This sounder can be operated via the following outputs: SZ58-3, alarming device 1 output of the ZTB601-1 or monitored alarming device output of the BC216. Due to the potential equalisation near the barrier, an earth fault is indicated. In this case the earth fault detection of the fire detection control panel may be deactivated.

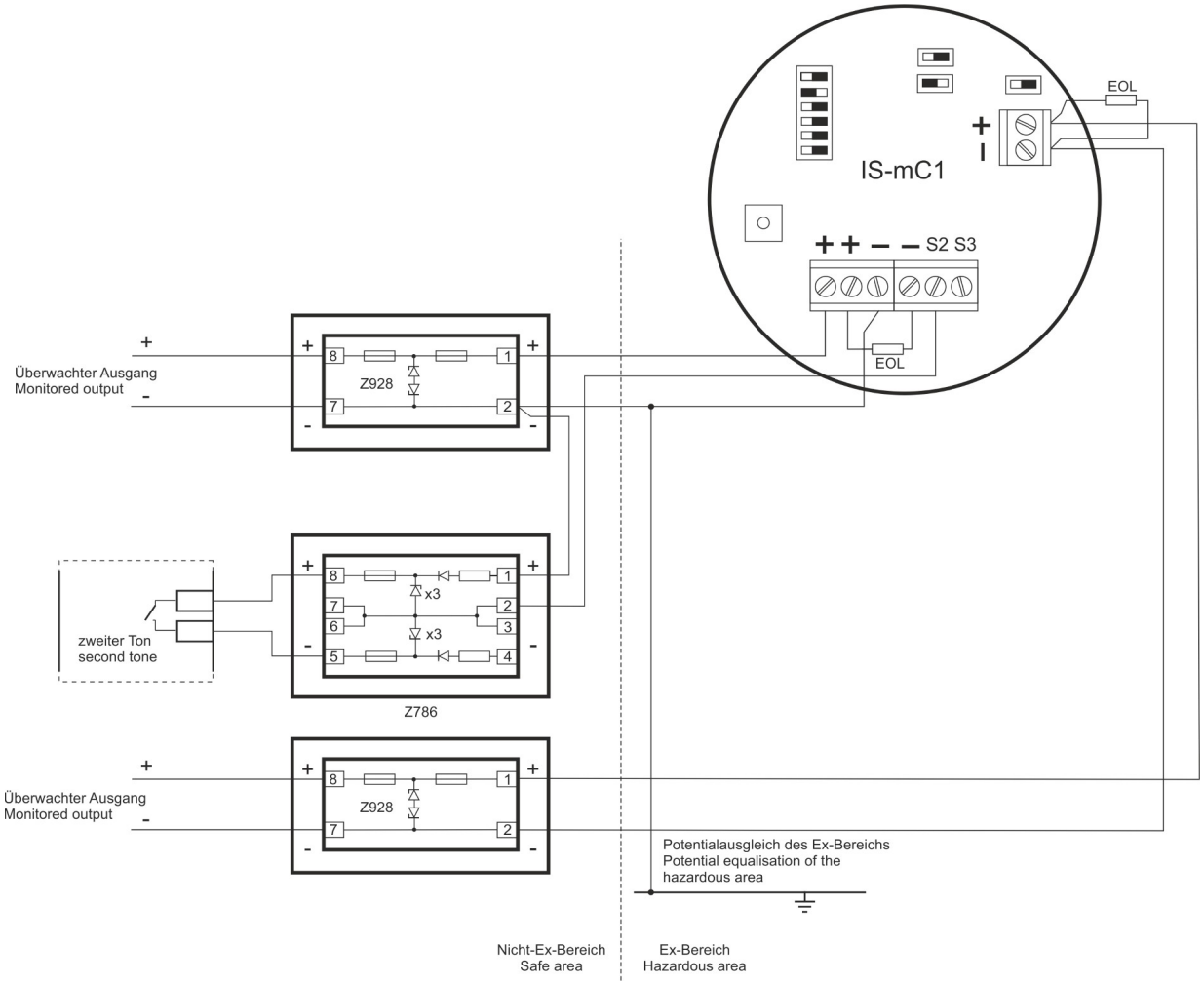
The tone of the sounder is set by means of switches. Here is an excerpt from the list of possible combinations:

DIP							
1	**2**	**3**	**4**	**5**	**Tone 1**	**Tone 2**	**Tone 3**
0	0	0	0	0	Continuous tone (340 Hz)	Alternating tone 800 / 1000 Hz	continuous tone
0	0	0	1	0	DIN tone and PFEER	Continuous tone 800 Hz	Alternating tone 800 / 1000 Hz

As drawn here in the example, the optical part of this alarming device can be activated separately from the acoustic alarming.

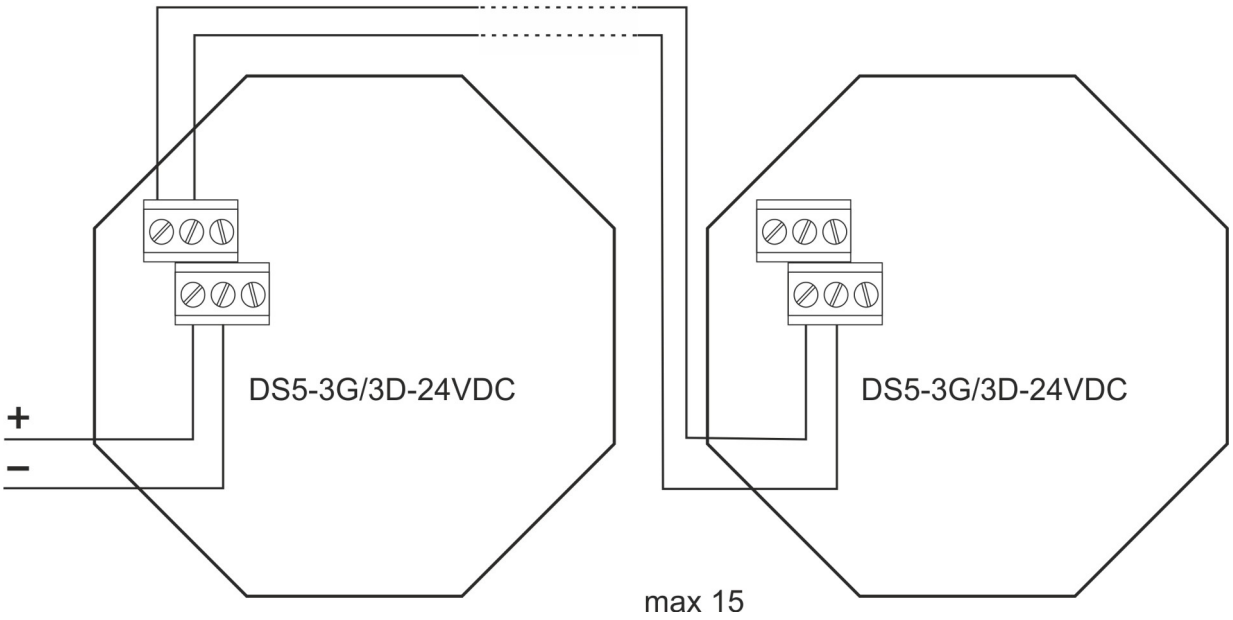
The sounder allows activation of up to three different tones. This is done by applying the supply to different terminals.
Tone 1 = + and -
Tone 2 = + and S2
Tone 3 = + and S3

2.16.4.2 Connection of the Sounder IS-mC1 for use of 2 tones



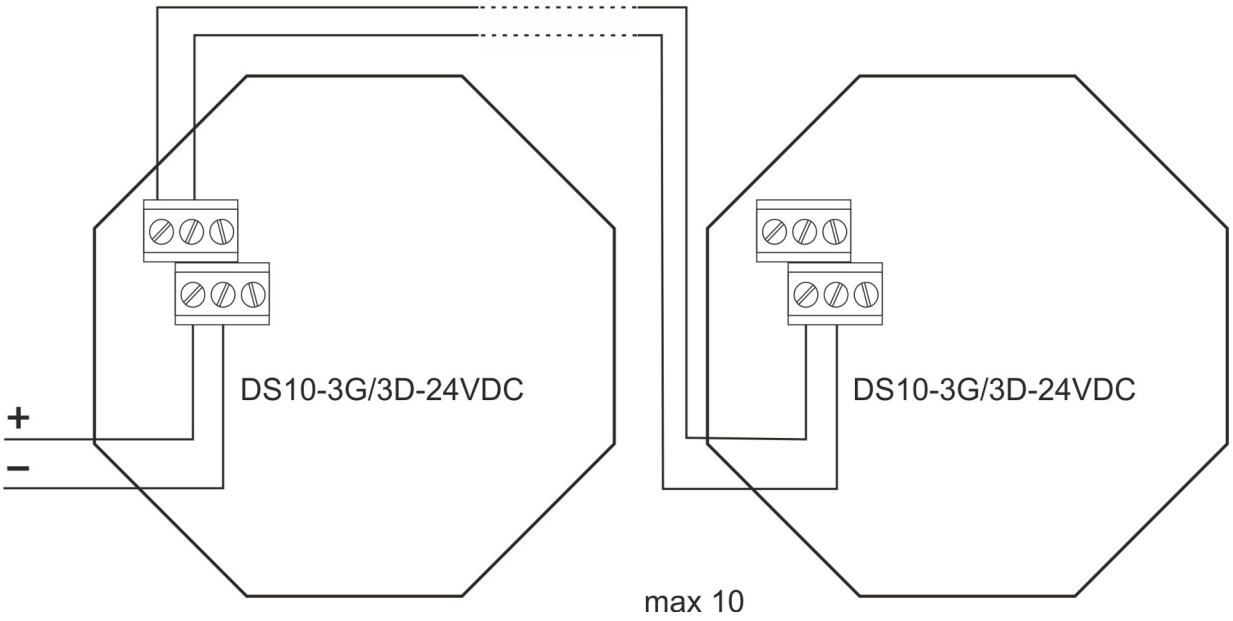
This sounder can be operated via the following outputs: SZ58-3, alarming device 1 output of the ZTB601-1 or monitored alarming device output of the BC216. Due to the potential equalisation near the barrier, an earth fault is indicated. In this case the earth fault detection of the fire detection control panel may be deactivated.

2.16.5 DS5-3G/3D-24VDC



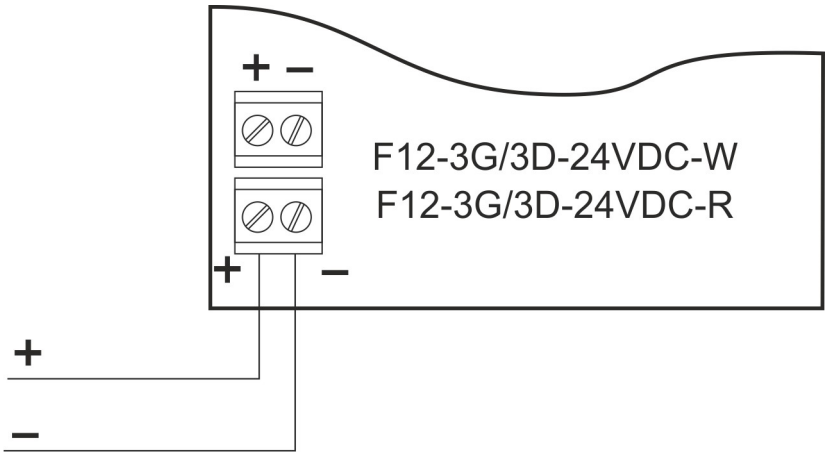
Please note the instructions in the manufacturer's documentation that accompanies the product.

2.16.6 DS10-3G/3D-24VDC



Please note the instructions in the manufacturer's documentation that accompanies the product.

2.16.7 F12-3G/3D-24VDC-W – F12-3G/3D-24VDC-R



Please note the instructions in the manufacturer's documentation that accompanies the product.

2.17 Coding of Address Module NG58-1

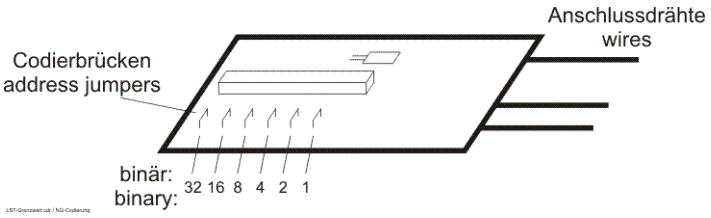
Together with the Fire Detection Control Panels Series BC216 (with a Conventional Detector Interface GIF8-1), BC016 and BC600 (with a Conventional Detector Interface GIF608-1), the Address Module NG58-1 allows the exact identification of a detector in alarm condition. The number of the detector in alarm condition will be displayed on the fire detection control panel. The number to be displayed must be preset (coded) on the address module within the range 0 to 63.

On the Fire Detection Control Panels Series BC016 and Series BC216, the evaluation of the address module must be set to **binary** in the parameter setup (menu **Global settings**). In the case of the BC600 it is not necessary to parameterise the type of evaluation. The Fire Detection Control Panel Series BC06 does not support address modules.

The number is preset by cutting the corresponding address jumpers. According to their order, the six jumpers have the following values:
binary coding: 1, 2, 4, 8, 16 and 32

Example: number 25
binary coding: 25 = 16 + 8 + 1 --> Jumpers with the value 16, 8 and 1 must be cut.

Example: number 12
binary coding: 12 = 8 + 4 --> Jumpers with the value 8 and 4 must be cut.



3 ADM technology

3.1 General

This chapter applies to fire detection control panels with a loop interface which is suitable for the connection of Series FI700 and FI750 detectors. This document only describes the technical possibilities of connecting dialog devices, on the basis of electrical engineering and information processing. Standards or other regulations, that have to be observed to guarantee the fire protecting capability of the system, have not been taken into account. These regulations vary in different countries and can therefore not be considered in this document.

We would like to put special attention on the fact that, especially in the field of security systems, technical possibilities are often drastically limited by country-specific regulations. Please do get familiar with those regulations before you start planning, installing and mounting devices. In case of doubt please contact the relevant local authority. Of course we are also at your disposal for any further information.

Legal notice about the loop modules (input/output devices)
The respective inputs or outputs do not have the monitoring function defined by VdS 2543 : 2021-03. Therefore, all devices that can be connected and which are to be used as Type 1 devices must be mounted in the immediate proximity to the input/output device.

3.1.1 Hints for project planning

A loop with the Labor Strauss/700 protocol allows you to connect up to 240 elements Series FI700 and FI750. All detectors and modules on a loop are connected on a two-wire line.

The installation may **only** be done in the form of a loop. You will find an example on page 322 in Chapter 3.14: "Example for the wiring of detector circuits". A loop must **not be connected to another loop**, as an open circuit (broken wire) would not be detected in this case.

We strongly recommend the use of the loop calculator tool (FireSysCALC_xxxx.ods), which can be downloaded from the LST website after registration. This is even more important when you have many loop elements, loop-powered elements or a long distance between the elements and the control panel.

All Series FI700 and FI750 elements have an integrated isolator on the input and output side. This isolator interrupts the loop line in the case of a short circuit and thus ensures proper function of the remaining elements.

Fire Detection Control Panels Series BC216 allow simultaneous activation of up to 8 detector/module LEDs per loop. This has to be taken into account when remote indicators and sounders which are actuated via parallel outputs are used.
In the case of Fire Detection Control Panels Series BC600, this limitation can be cancelled by setting the remote indicator output to the property "individual" or "intelligent" (PARSOFT window **Element parameters – General**).

3.2 Cable requirements

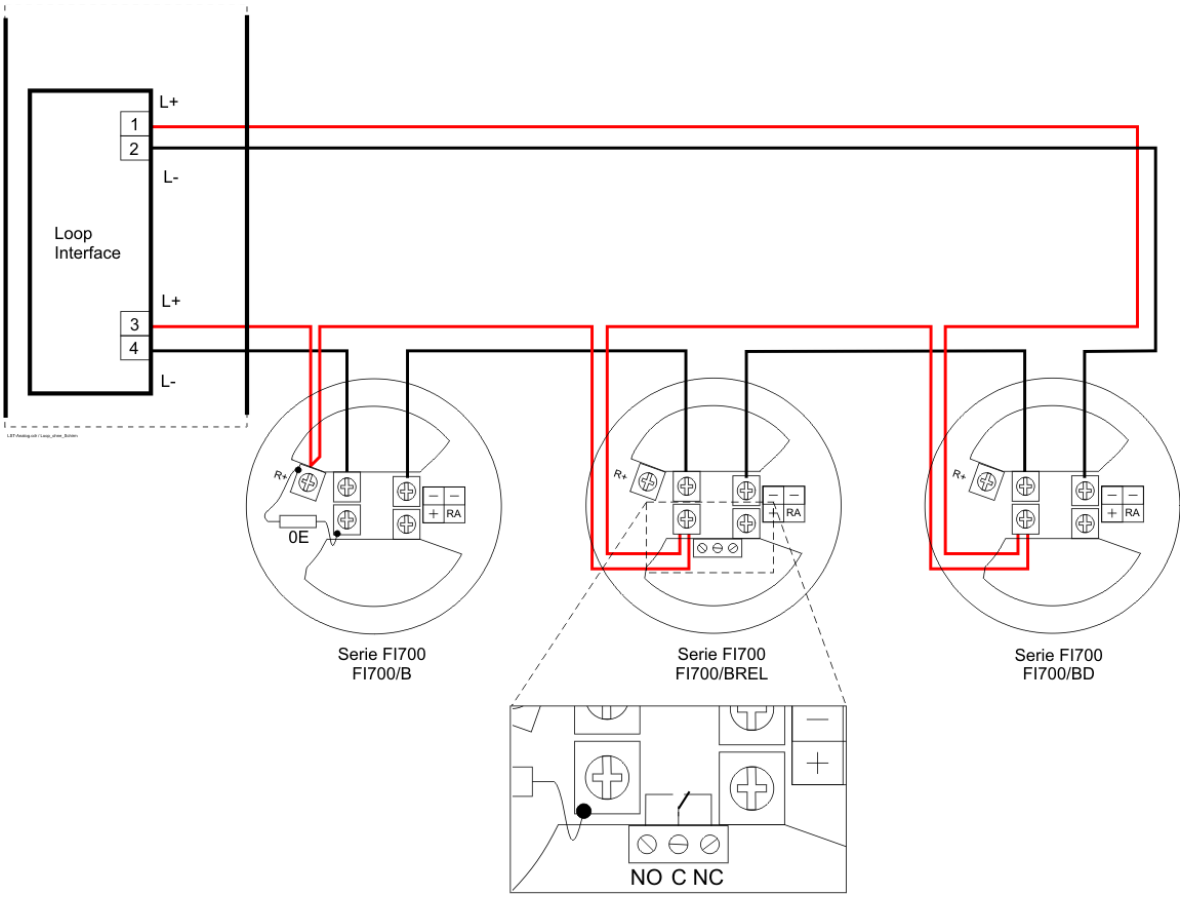
The line resistance of the detection loop must not exceed 50 Ohm per wire. This corresponds to a loop length of approx. 1400m, using a 0.5mm² wire.

The capacitance of the whole loop line must not exceed 400nF.

Loop lines of several loop interfaces **must not** share a common cable. **Shielded cables are not necessary and therefore not recommended**.

3.2.1 Unshielded cable

For the wiring an unshielded cable is recommended. The drawing below shows you how to connect the cable to the detectors and to the control panel.



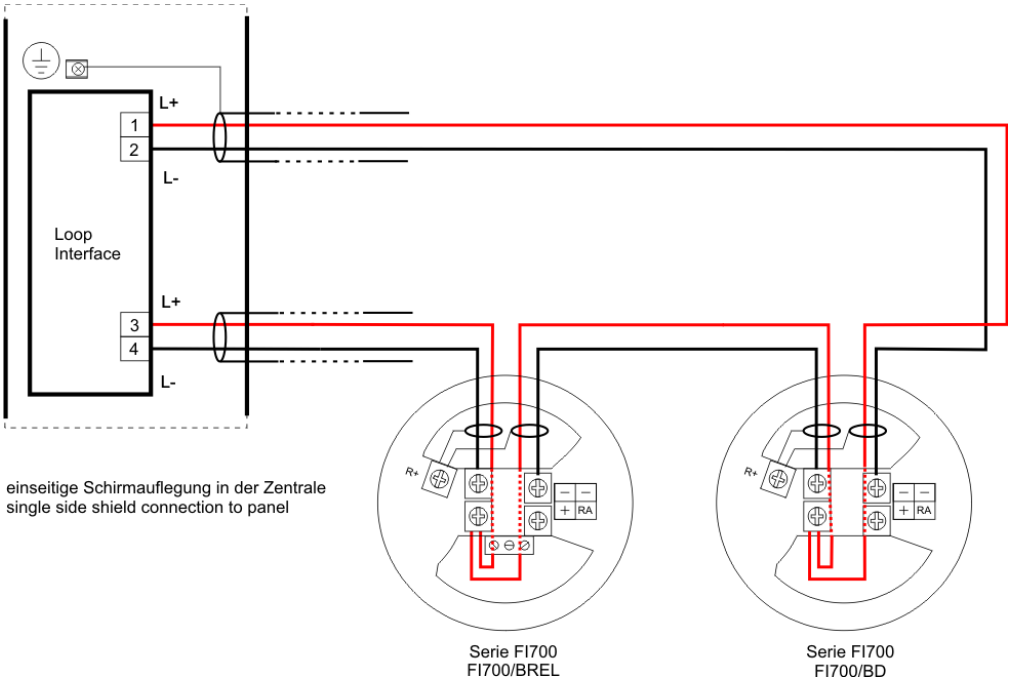
3.2.2 Shielded cable

When using a shielded cable, you have to pay attention to the following important notes:

- The shield must be connected to the fire detection control panel **only at one end** of the loop.
- The shield has to be securely connected through in each detector base or module. The shield must not be interrupted in any way.
- If no shield terminal is available, the secure through-connection of the shield must be ensured by means of an auxiliary terminal.

When shielded cables are installed, the use of the detector base FI700/BD is recommended. The shield must not, under any circumstances, get in contact with any other wire or metal part.

Note the different connection of the loop to the detector base FI700/BD in comparison with the standard base FI700/B.



The terminal "R+" of the detector base FI700/BD is used for connecting the shield.

3.3 Address programming of loop elements

Loop elements can be programmed in two ways:

1. via the AUTO-addressing function of the fire detection control panel in conjunction with PARSOFT
2. with an external programming unit (FI700/PU or FI750/PU)

3.3.1 AUTO-addressing of elements

The element address of the Series FI700 and FI750 devices can be automatically assigned. The AUTO-addressing can be started via the fire detection control panel or via PARSOFT.
There are two possibilities:

1. Automatic creation of the parameter data, menu item [AUTO-setup] in PARSOFT or [Delete settings and initialize devices] at the fire detection panel. This function deletes the existing configuration of the fire detection control panel and automatically assigns addresses to the loop elements anew, according to the installed componentries and loop elements.
2. Automatic update of the parameter data, menu item [Initialize new devices]. This function detects new elements on the loop, transfers them into the control panel configuration and automatically assigns the element address.

Addressing a fully equipped loop (240 addresses) will take approximately 12 minutes. This results from an addressing time of about 3 seconds per element.

The cable length between two loop elements must not exceed 250 metres.
The wiring is only allowed in the form of a ring. An example can be found on page 322 in Chapter 3.14: "Example for the wiring of detector circuits".
No further loops may be connected to a loop line. All branch lines and the elements on this branch shall be removed.

3.3.1.1 AUTO-setup – automatic addressing of all loop elements

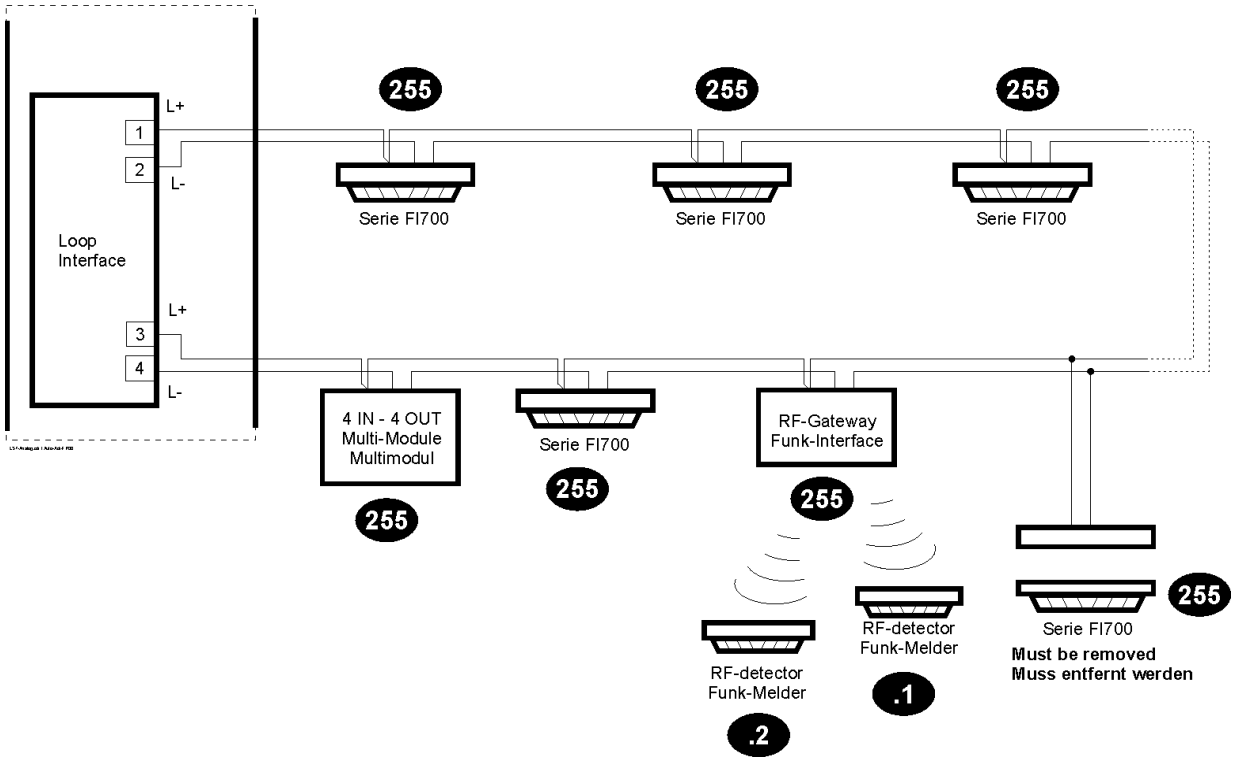
The AUTO-setup deletes the configuration of the fire detection control panel, scans the installed components (loop interface, conventional detector interface, fire brigade interface, …) and deletes the addresses of the existing Series FI700 loop elements. In the next step a new address is assigned to each loop element. This is done by polling the loop elements via terminals 1 and 2 of the loop interface.

The AUTO-setup is started via **PARSOFT** by selecting the following menu item:
[Communication] - [AUTO-setup]

Starting the AUTO-setup at the **fire detection control panel** (authorisation level 3) is done by selecting:

```
[Parameter settings]
[AUTO-setup]
[Delete settings and initialize devices]
```

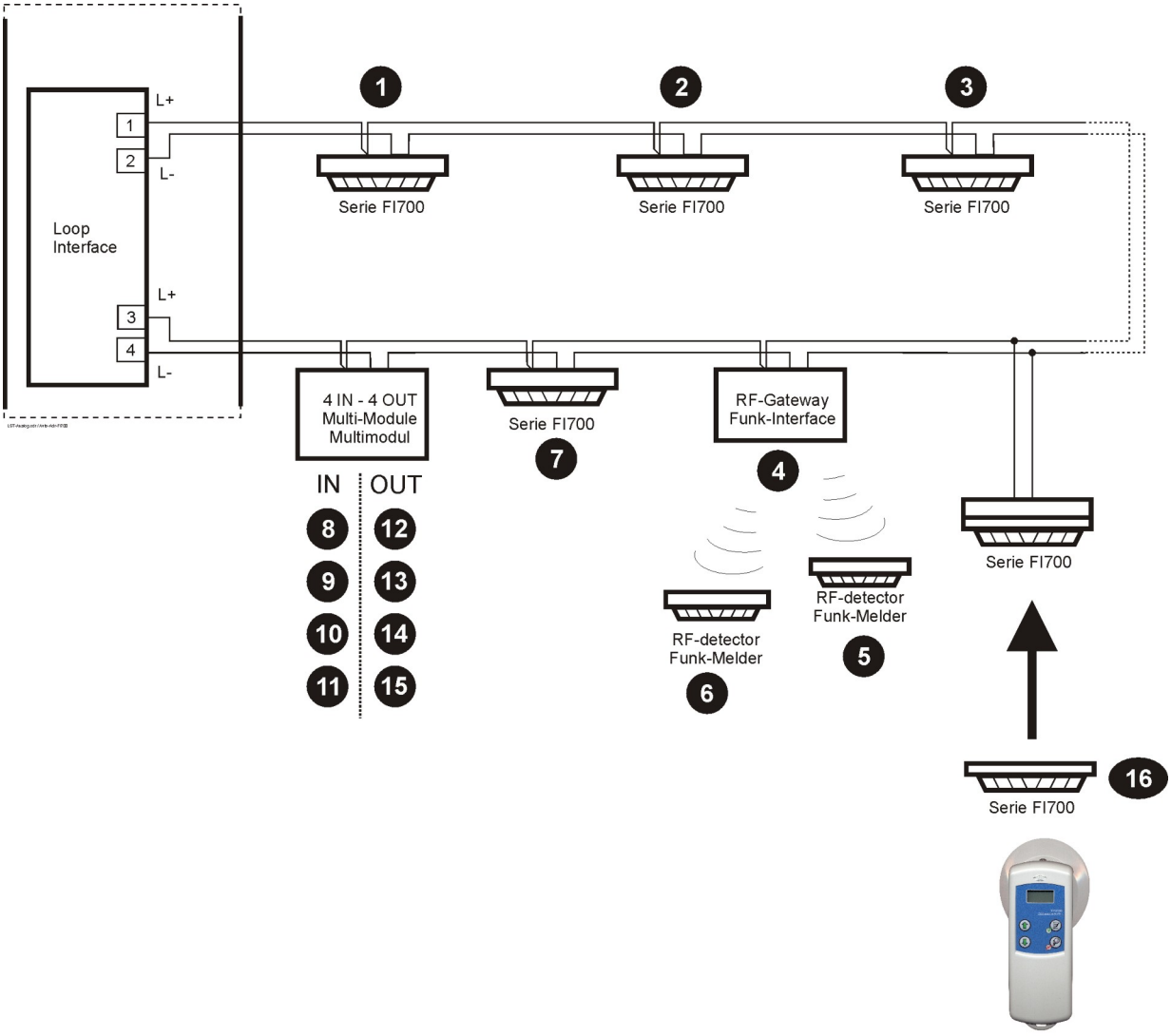
The next picture shows the address condition after the start of the AUTO-setup. The element addresses have been set to 255 (factory default value).



As described above, the connection of branch lines during the automatic address assignment is not allowed. Should a branch be present, the elements on the branch line have to be removed **BEFORE** starting the AUTO-addressing procedure. The addresses of these elements have to be programmed manually. If the branch line is not removed from the loop **BEFORE** starting the addressing procedure, the addressing of the loop elements will be incorrect.

If an RF Gateway (FI7x0/RF/W2W) is present on the loop, the addresses of the already configured wireless elements are also automatically assigned. A later expansion of the RF system (further wireless detectors) is not possible, as there may be an overlap of addresses after the insertion of wireless detectors. The automatic assignment of addresses also applies to multi-modules. A unique address will be allocated to each input and output.

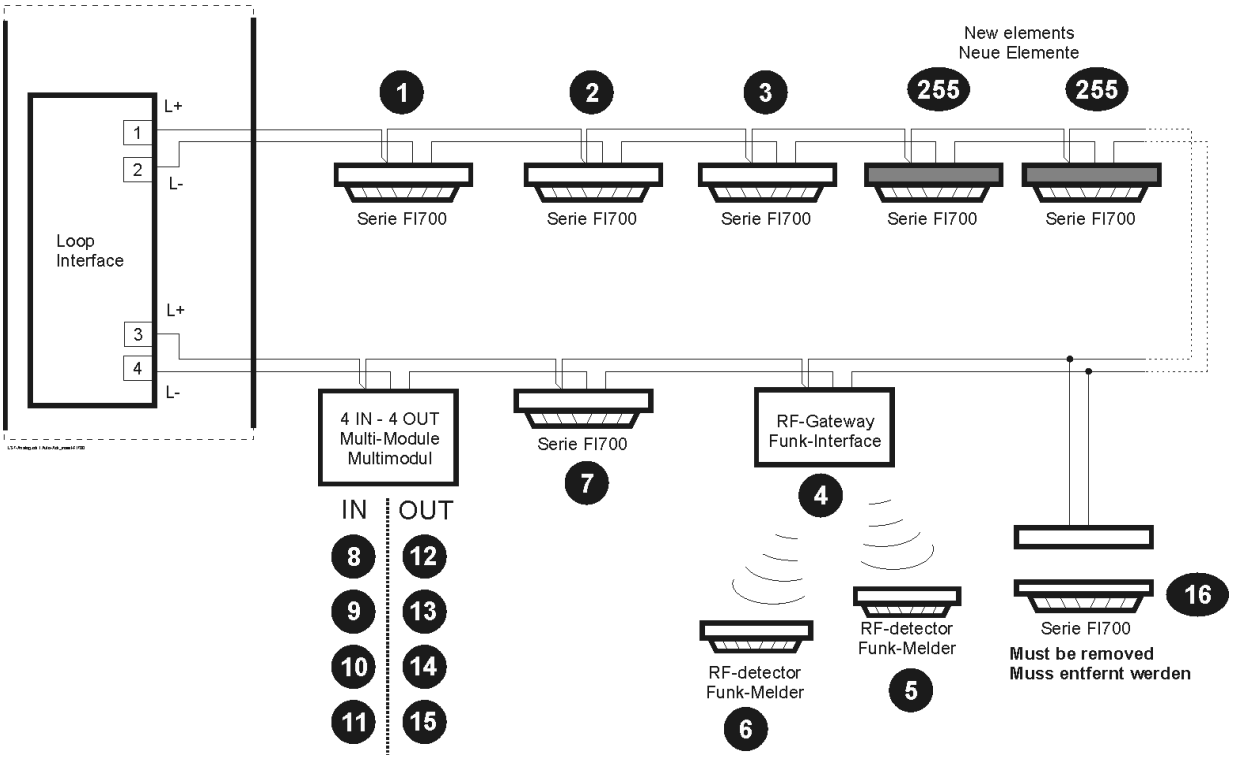
After the initialisation of the element addresses (to 255), the addresses are reassigned based on the element's loop position. After the AUTO-setup, automatically addressed elements are displayed as AUTO-setup elements in PARSOFT and also on the fire detection control panel. If no address has been assigned to one or more elements, the error message "`Detector with addr. 0 installed`" is displayed for each of these elements after a restart of the fire detection control panel. This message is also displayed for a not addressed module. Such a message is an indicator of a faulty wiring of the loop.



The addresses are assigned in ascending order. It should be noted that elements which are located on a branch line must be addressed manually. In the above example address 16 is assigned.

3.3.1.2 [Initialize new devices] – AUTO-addressing of new elements

The below diagram shows an example of an existing loop, where two new elements are to be inserted. The new elements have the address 255 (factory default value).



The address assignment can be started directly via the fire detection panel or via PARSOFT. Please note that elements on a branch have to be removed **BEFORE** starting the addressing procedure.

The Initialization of new devices is started via **PARSOFT** by selecting the following menu item: [Communication] - [Initialize new devices]

Starting the AUTO-setup at the **control panel** (authorisation level 3) is done by selecting:

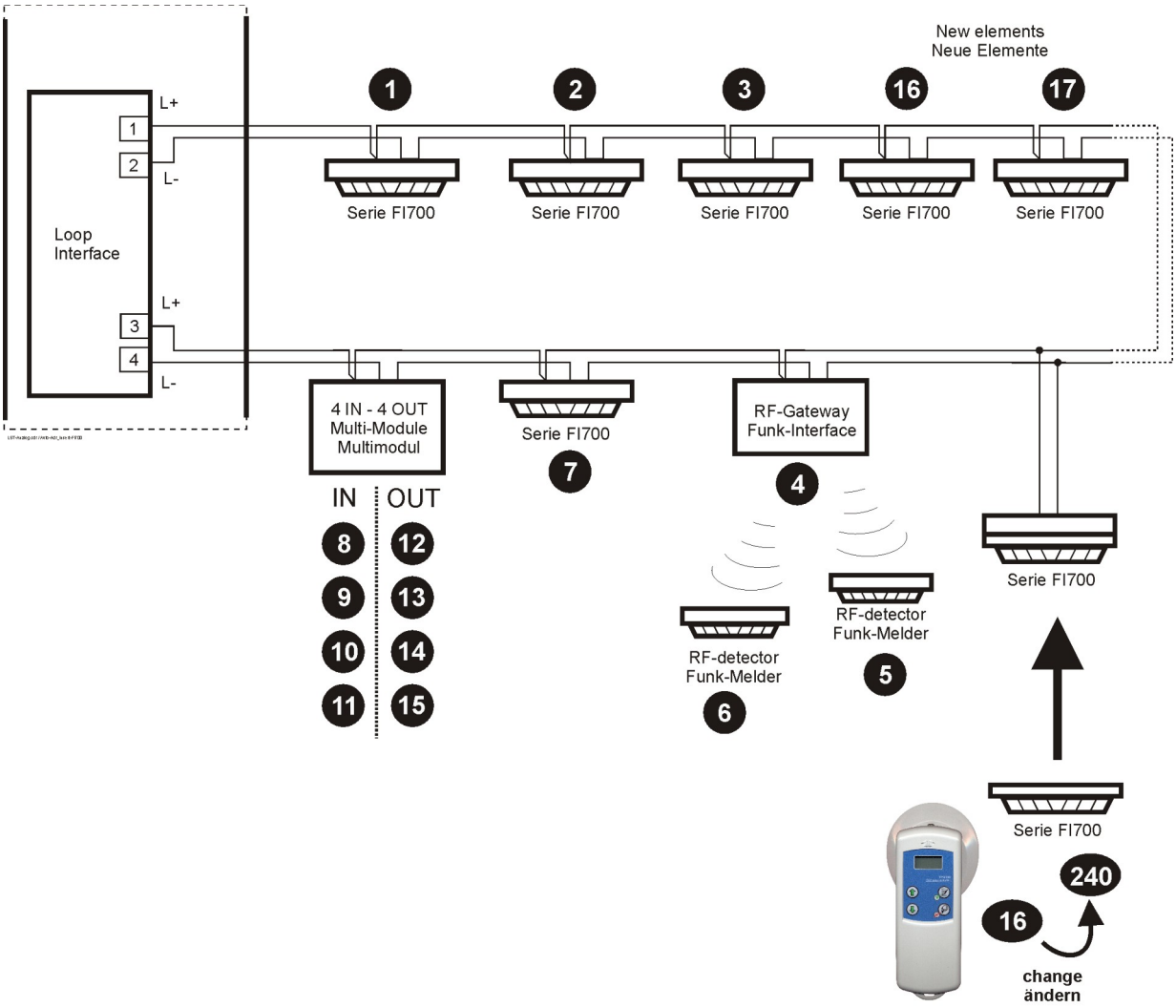
```
[Parameter settings]
[AUTO-setup]
[Initialize new devices]
```

The fire detection control panel looks for the first free loop address for AUTO-addressing (this is the address following the highest used loop address). Subsequently, the panel searches for devices with address 255 – a new element. If a new element is detected, the first free address will be assigned to it. This process is repeated until all elements are addressed or address 240 is reached. If a loop element with address 240 is already present, NO automatic address assignment is carried out – even if lower addresses are still unused.

Referring to the previously cited example, this process results in the automatic allocation of the addresses 16 and 17 for the two new elements. However, when the detector on the branch is inserted, there is a double address. Thus, the element on the branch line must be reprogrammed. In the above example, the address 16 is changed to 240. This modification must also be updated in the parameter setup of the fire detection control.

Start the assignment of addresses for branch devices with 240. Continue with 239, 238, … for further elements on branches. Therefore, when adding new devices to the loop you do not have to modify the panel setup after AUTO-addressing, as the addresses of the branch devices do not have to be changed.

The drawing below shows the finally addressed loop elements.



We have to emphasise again that elements on branch lines **MUST NOT** be connected to the loop during the AUTO-setup process. The addressing of these elements has to be done manually – see next chapter. Also note that the expansion of an RF interface with further wireless elements is restricted in terms of possible address overlaps.

3.3.2 Manual addressing of elements

3.3.2.1 Programming Units FI700/PU and FI750/PU

The Programming Units FI700/PU and FI750/PU are complementary devices for all Series FI700 and FI750 loop elements (detectors, modules and sounders). The main purpose of these programming units is the manual programming of the loop device addresses.
In addition, the Programming Units FI700/PU and FI750/PU also allow you to read out device information such as address, date of manufacture and sensitivity values. In combination with optical smoke detectors and optical-thermal detectors, the degree of contamination of the optical measuring chamber can also be read out.

By means of the Programming Unit FI700/PU, Series FI750 elements can only be managed since PU version 2.5.

The Programming Unit FI700/PU is equipped with a Detector Base FI700/B and allows direct connection of automatic fire detectors Series FI700. The Programming Unit FI750/PU is equipped with an integrated Detector Base FI750/B and allows direct connection of automatic detectors Series FI750. Via an adapter (detector base with connection cable), the respective other detector series can also be connected and programmed.

For the operation of the FI700/PU or FI750/PU, a 9V battery is required.

3.3.2.2 Switching on the Programming Unit FI700/PU or FI750/PU

After inserting the battery, the programming unit is automatically switched on. After a minute of inactivity, the device switches itself off and goes into a sleep mode and the display becomes dark. This sleep mode can be terminated by pressing any button.

3.3.2.3 Switching off the Programming Unit FI700/PU or FI750/PU

After one minute of inactivity, the programming unit switches itself off automatically.

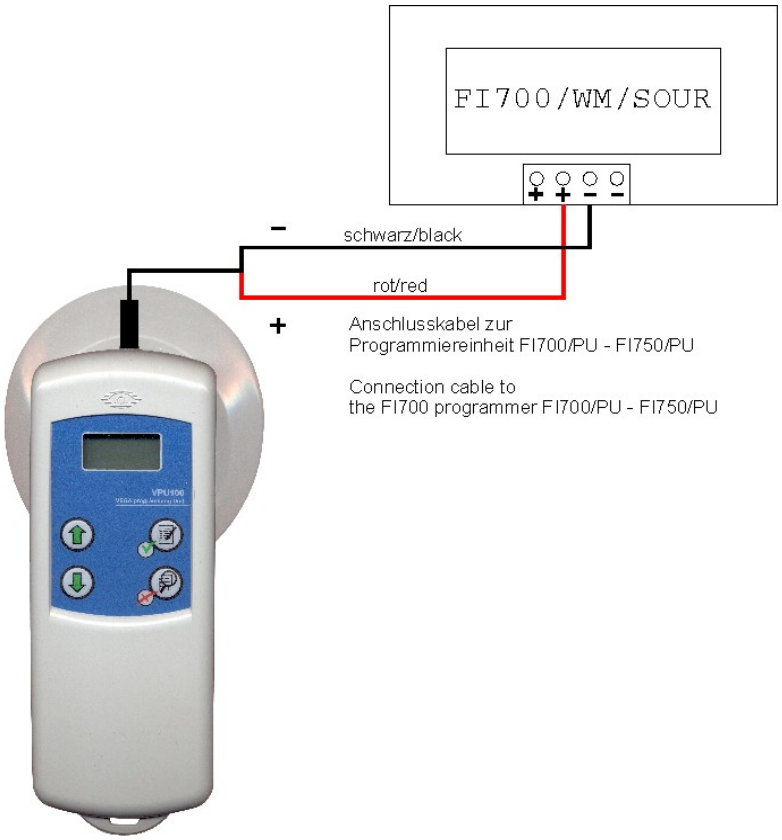
3.3.2.4 Connection of loop elements to the Programming Unit FI700/PU or FI750/PU

The programming unit may only be connected to **one** element at a time. Any electrical connections to other loop elements must be removed. Furthermore, the polarity of the connection cable has to be noted. Red is the plus (+) cable and black the minus (-) cable.

Automatic detectors
The detector has to be placed in the detector base of the programming unit that fits this detector series.

Modules / remote indicators / manual call points / sounders
A ready-made cable with a 4-pin connector is delivered with the programming unit. The cable is connected to the loop element that is to be addressed via the plug connector. The phone jack on the other side of the cable is inserted into the programming unit. The electrical connection between the programming unit and the element is established in this way.

The picture below shows the connection between the Programming Unit FI700/PU or FI750/PU and a loop sounder FI700/WM/SOUR. For addressing the Remote Indicator FI700/PA, the cable has to be connected to the screw terminals of the indicator.



The 4-pin connector of the ready-made cable has to be connected in such a way, that the two central terminals are connected in proper polarity to the loop element.

3.3.2.5 Setting the address

After power-on of the Programming Unit FI700/PU or FI750/PU, the text "Address" is displayed on the LCD. This indicates that the programming unit is in the addressing mode. In addition, the last selected address is displayed in the second line.

Pressing the keys or will change the address. It can be set between 1 and 240. Keep in mind that no double addresses on the loop are used.

By pressing the save button , the displayed address will be saved into the device. A successful programming will be indicated by the green flashing LED on the programmed device.

3.3.2.6 Reading the address

After power-on of the Programming Unit FI700/PU or FI750/PU, the text "Address" is displayed on the LCD.

By pressing the button, the address of the connected device will be displayed in the second line of the display.

3.3.2.7 Expert mode

If the button is pressed for more than one second, the expert mode is started. Afterwards you must select the device family (analogue/conventional). This is only possible since version 2.0.

In addition to the address, the following information can be read out:

- Device type
- Standard analogue value
- Detection characteristics of a thermal detector
- Contamination level of an optical or optical/thermal detector in percent
- Firmware version
- Production date
- Test date
- Operating Mode for setting the sound level of sounders.

3.3.3 Replacing an element without using a Programming Unit FI7x0/PU

Since the BC600 firmware version 1.08 1951, a loop input element (i.e., a detector or an input module – but not an input/output module) can also be replaced without a programming unit.

If a parameterised detector is removed and replaced by a new detector that has not yet been addressed (detector address 255), two fault events will be indicated on the control panel – as always:

- "Fault – xxx" – "Loop element does not answer"
- "Fault – loop" – "Detector with address 0 already installed"

Since this firmware version, in the [Faults] menu the context menu of the element that does not answer any more offers the operation [assign new element], provided that the following conditions are met:

- authorization level 3 is active,
- the two faults occur on the same loop,
- on the loop, only a "Fault – xxx" – "Loop element does not answer" from an input is present.

If this operation is confirmed, the loop interface will program the detector in question (address 255) with the address of the missing detector. After successful programming of the detector, the fault "Fault – xxx" – "Loop element does not answer" will be terminated and the "Fault - loop" – "Detector with address 0 already installed" will be replaced by a new fault "Fault – xxx" – "Replacm. detected, test necess.". The yellow detector LED is activated. Now the detector must be activated. After activation of the detector through a magnet or test gas, the detailed text of the fault "Fault – xxx" – "Replacm. detected, test necess." will be changed to "Replacem. detected - test done" and the detector LED will be deactivated. In this condition, further activation attempts will not have an effect. Through the context

menu [confirm replacement], the fault is terminated and the detector is set to the normal condition again.

3.4 Connection of Manual Call Points

The following manual call points can be connected to a loop with the Labor Strauss/700 protocol:

Description	Type
Manual Call Point/Red/700/Flexi	FI700/MCP
Manual Call Point IP67/Red/700	FI700/MCP67
Manual Call Point/Red/700	HFM/3/72/xx
Manual Call Point/Blue/700/Hausal	HM/5/72/02/xx
Manual Call Point/Blue/700/Stopp	HM/5/72/18/xx
Manual Call Point/Yellow/700/Hand	HM/1/72/17/xx
Manual Call Point Series HME	HME/xxxx/72/xx/xx

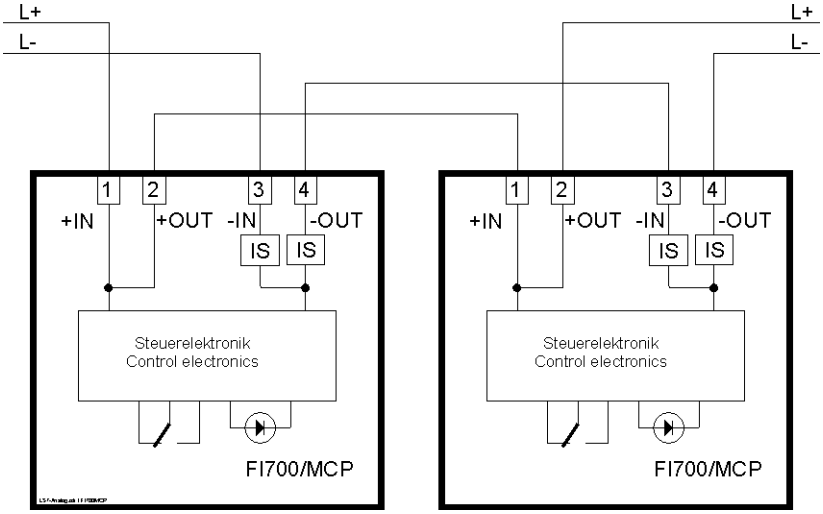
Each manual call point includes an isolator.

3.4.1.1 Programming of the address

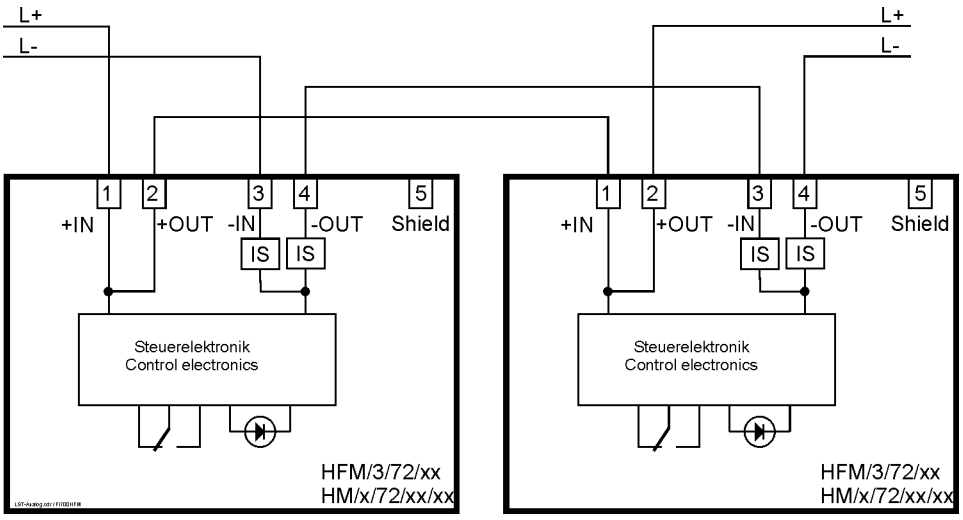
Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements".

3.4.2 Manual Call Points – Series FI700/MCP

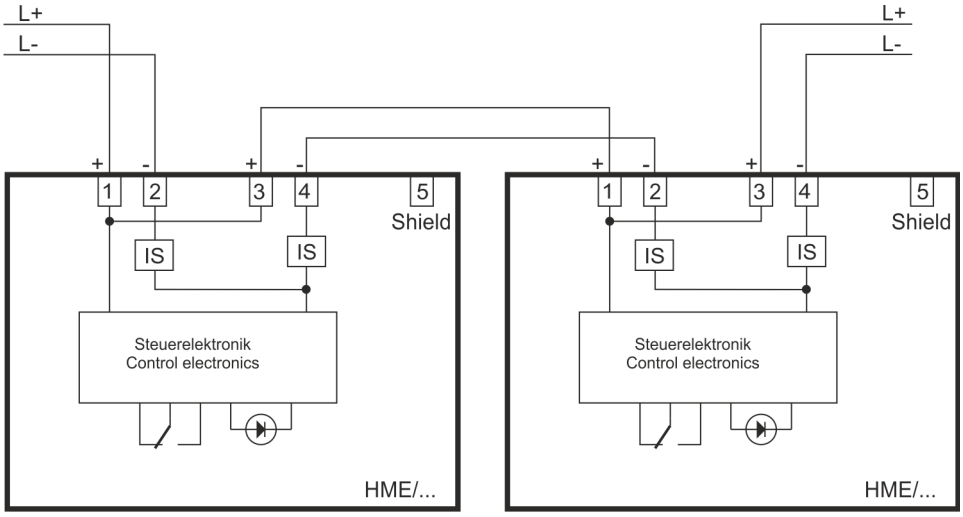
Connection of FI700/MCP



3.4.3 Manual Call Points – HFM / HM



3.4.4 Manual Call Points Series HME



3.5 Connection of intelligent automatic detectors

3.5.1 Automatic detectors Series FI700

All automatic detectors are connected to the loop in parallel. Alarm resistors or line terminating resistors are not required. Between terminals "+" and "R +" of the base, a 0 Ohm resistor is connected. All Series FI700 detectors have an integrated isolator, which isolates the loop in case of a short circuit, and thus ensures the function of the remaining elements.

The following automatic detectors Series FI700 can be connected to a loop with the Labor Strauss/700 protocol:

Description	Type
Optical Smoke Detector/700	FI700/O
Optical-Thermal Detector/700	FI700/OT
Thermal Detector/700	FI700/T

3.5.1.1 Programming of the address of automatic detectors

Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements".

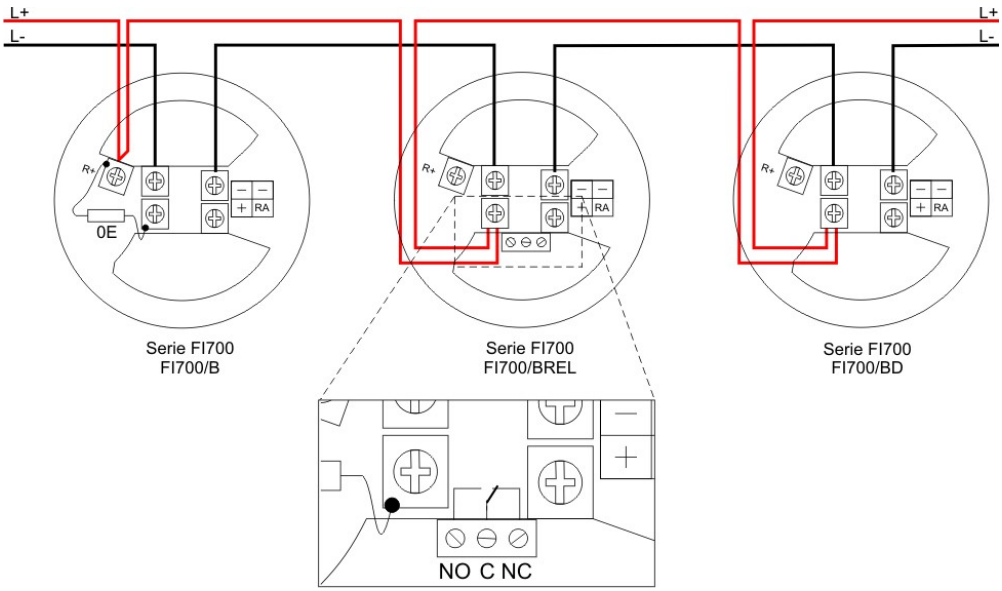
3.5.2 Connection of detector bases

All automatic detectors Series FI700 can be combined with the following detector bases:

Description	Type
Standard base	FI700/B
Deep base	FI700/BD
Relay base	FI700/BREL

3.5.2.1 Connection of detector bases FI700/B, FI700/BD, FI700/BREL

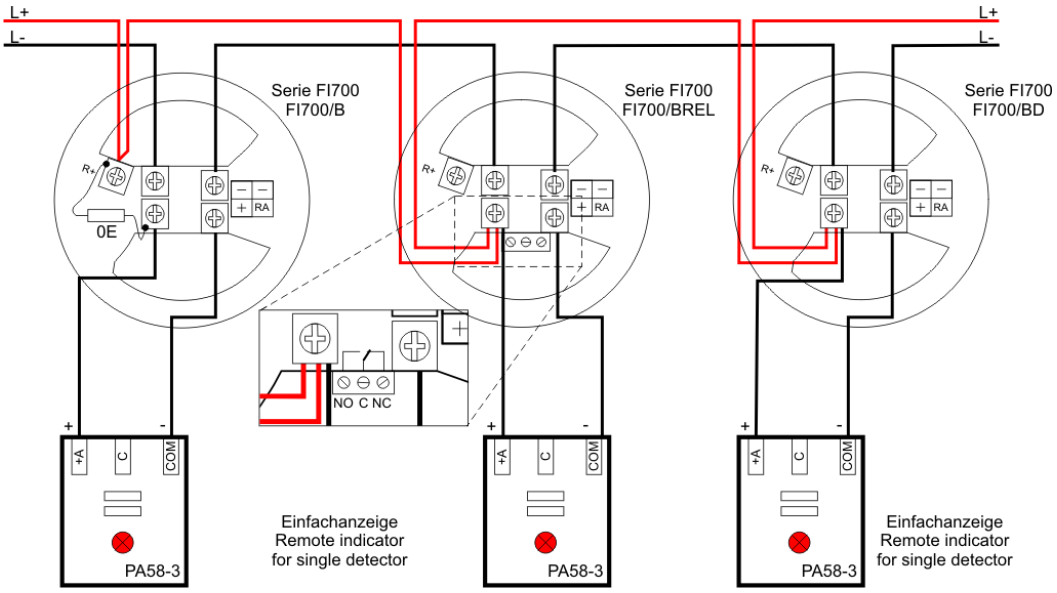
The contact rating of the relay base FI700/BREL is 1A at 30VDC.



At the detector base FI700/B the terminals "+" or "R+" can be used to connect the wire L+. When using the detector base FI700/BD, the "+" terminal must be used for the line L+.

3.5.2.2 Connection of detector bases FI700/B, FI700/BD, FI700/BREL with PA58-3

Multiple indicators **cannot** be connected to detectors Series FI700.



If the remote indicators are connected to Fire Detection Control Panels Series **BC216,** a maximum of 8 remote indicators can be simultaneously activated per loop, because the number of detector/module LEDs that can be activated is limited.

If the remote indicator is used on the **BC600,** the parallel output of the detector can be freely parameterised according to the requirements. This is done with the RI setting "individual". In this case the limitation of 8 detector/module LEDs that can be activated is cancelled for this output. Therefore it is all the more important to check the maximum number of sounders by means of the loop calculator spreadsheet FireSysCALC_xxx.ods (available in the download area of the LST website – registration required).

3.5.3 Automatic detectors Series FI750

All automatic detectors are connected in parallel to the loop. Alarm resistors or end-of-line resistors are not needed. All Series FI750 detectors are provided with a dual-isolator which interrupts the loop in the event of a short circuit, thereby ensuring the functioning of the remaining elements.

The following automatic detectors Series FI750 can also be connected to a loop with the Labor Strauss/700 protocol:

Description	Type
Optical Smoke Detector	FI750/O
Optical-Thermal Detector	FI750/OT
Thermal Detector	FI750/T

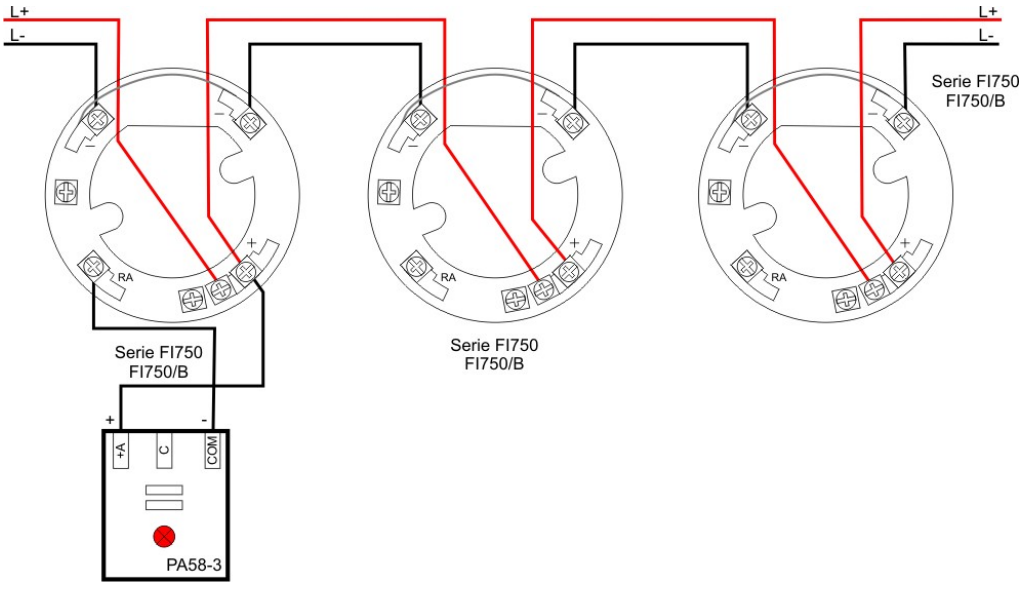
3.5.3.1 Programming the address of automatic detectors

How the address is set is described from page 178 onwards in Chapter 3.3: "Address programming of loop elements".

3.5.3.2 Connection of Detector Bases FI750/B

All Series FI750 detectors can be inserted in the following detector base:

Description	Type
Detector Base	FI750/B

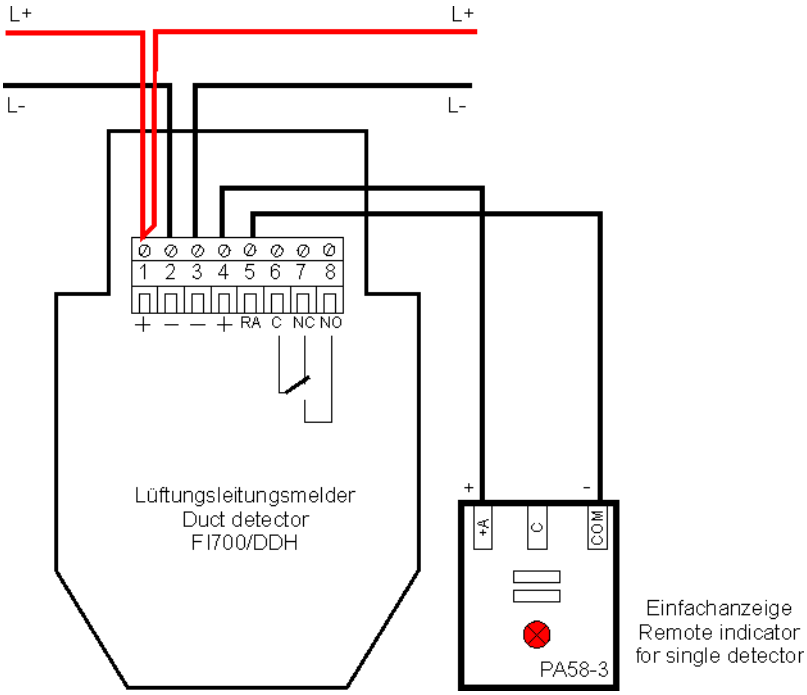


If the remote indicators are connected to Fire Detection Control Panels Series **BC216,** a maximum of 8 remote indicators can be simultaneously activated per loop, because the number of detector/module LEDs that can be activated is limited.

If the remote indicator is used on the **BC600,** the parallel output of the detector can be freely parameterised according to the requirements. This is done with the RI setting "individual". In this case the limitation of 8 detector/module LEDs that can be activated is cancelled for this output. Therefore it is all the more important to check the maximum number of sounders by means of the loop calculator spreadsheet FireSysCALC_xxx.ods (available in the download area of the LST website – registration required).

3.5.4 Connection of duct detector FI700/DDH

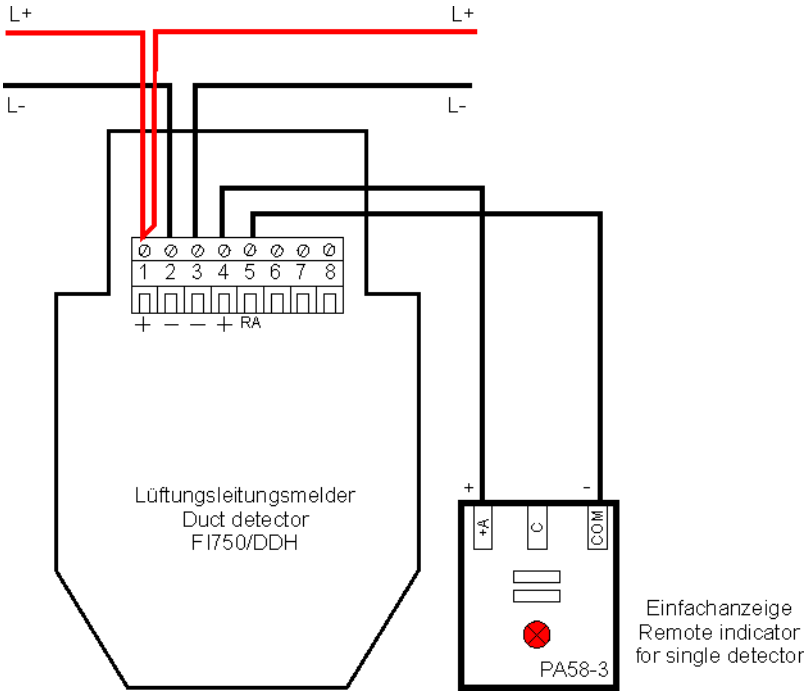
3.5.4.1 FI700/DDH with Series FI700



The duct detector FI700/DDH is delivered with a Detector Base FI700/B. The base can be changed to a relay base FI700/BREL by the installer. After that, the relay contacts shown will be available on the PCB terminal block.

3.5.5 Connection of duct detector FI750/DDH

3.5.5.1 FI750/DDH with Series FI750



The duct detector FI750/DDH is delivered with a Detector Base FI750/B.

3.6 Intrinsically safe detection circuits for hazardous areas

3.6.1 Automatic detectors and manual call points with the Conventional Zone Module FI700/M1CZ

Please observe that a resistive EOL element must be used at the FI700/M1CZ. The setup of the panel has to be done accordingly.

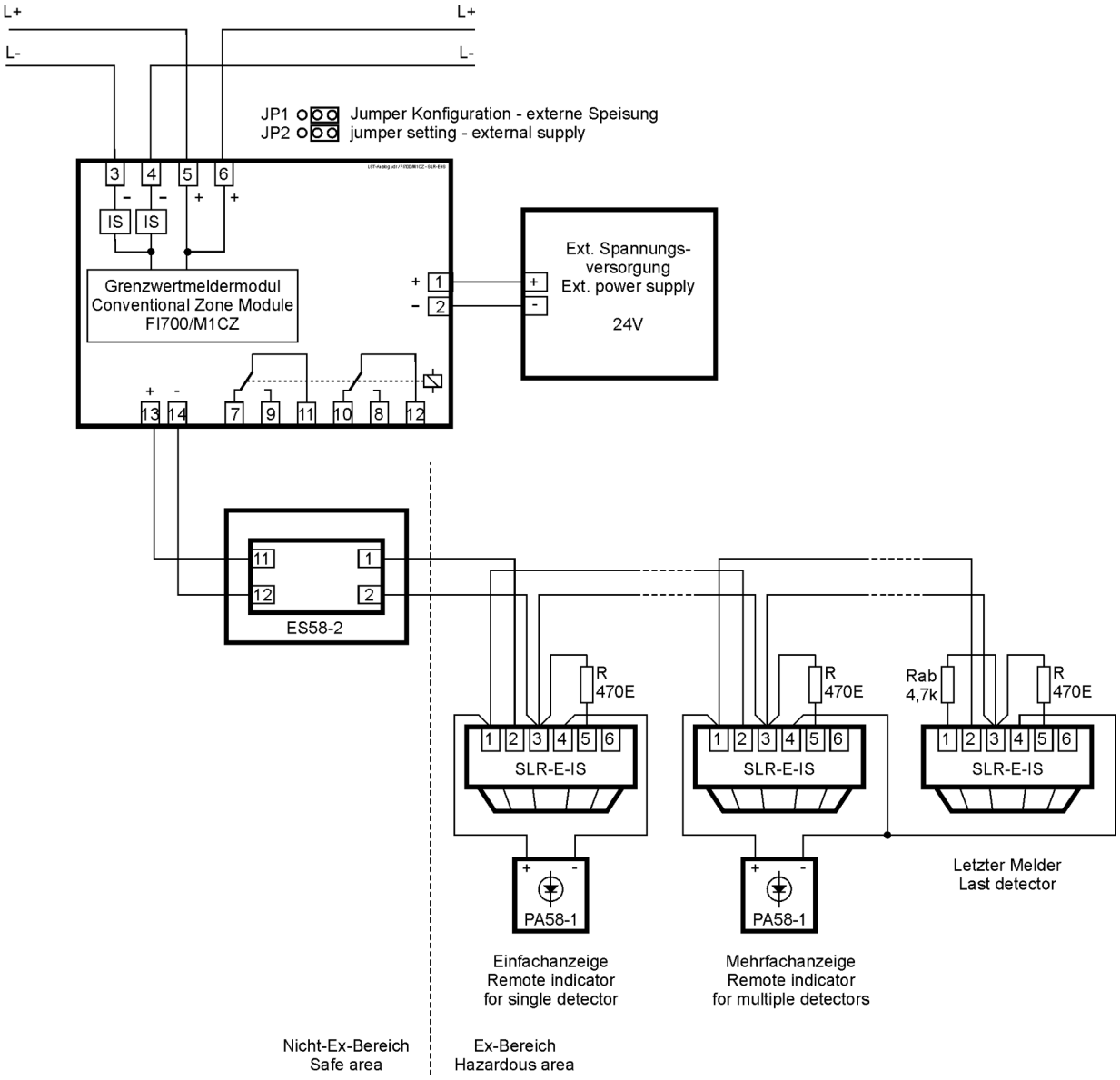
If the Conventional Zone Module FI700/M1CZ is used for the connection in a hazardous area, a resistive EOL element has to be installed.

Due to the galvanic isolation between the hazardous area and the safe area, an earth fault detection is not possible when the Safety Barrier ES58-2 is used.

The safety barrier must always be installed outside but near the hazardous area.

3.6.1.1 Optical Smoke Detector SLR-E-IS

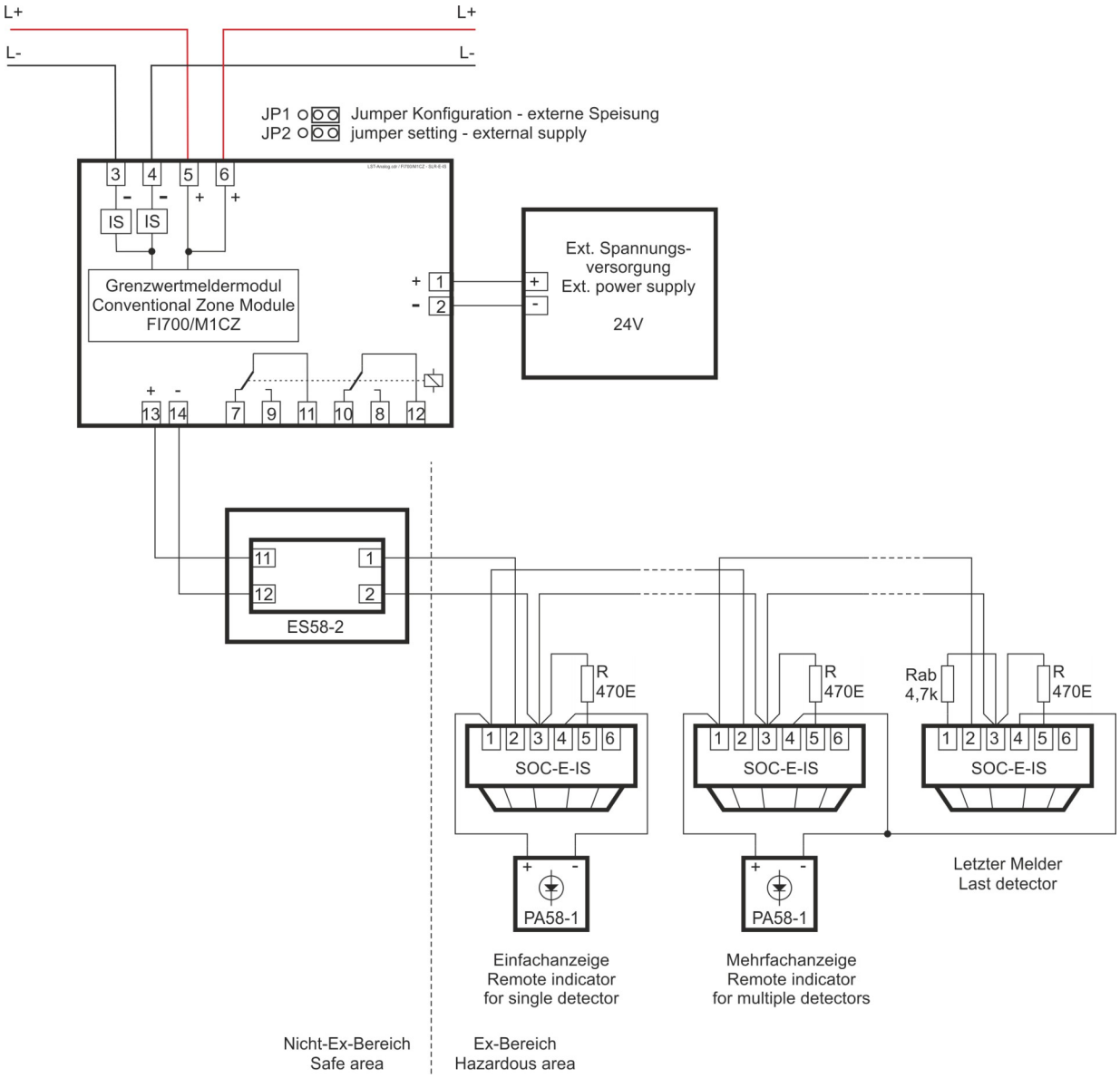
A maximum of 20 detectors SLR-E-IS can be connected to a conventional zone module.



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

3.6.1.2 Optical Smoke Detector SOC-E-IS

Up to 8 Optical Smoke Detectors SOC-E-IS can be connected to a conventional zone module.



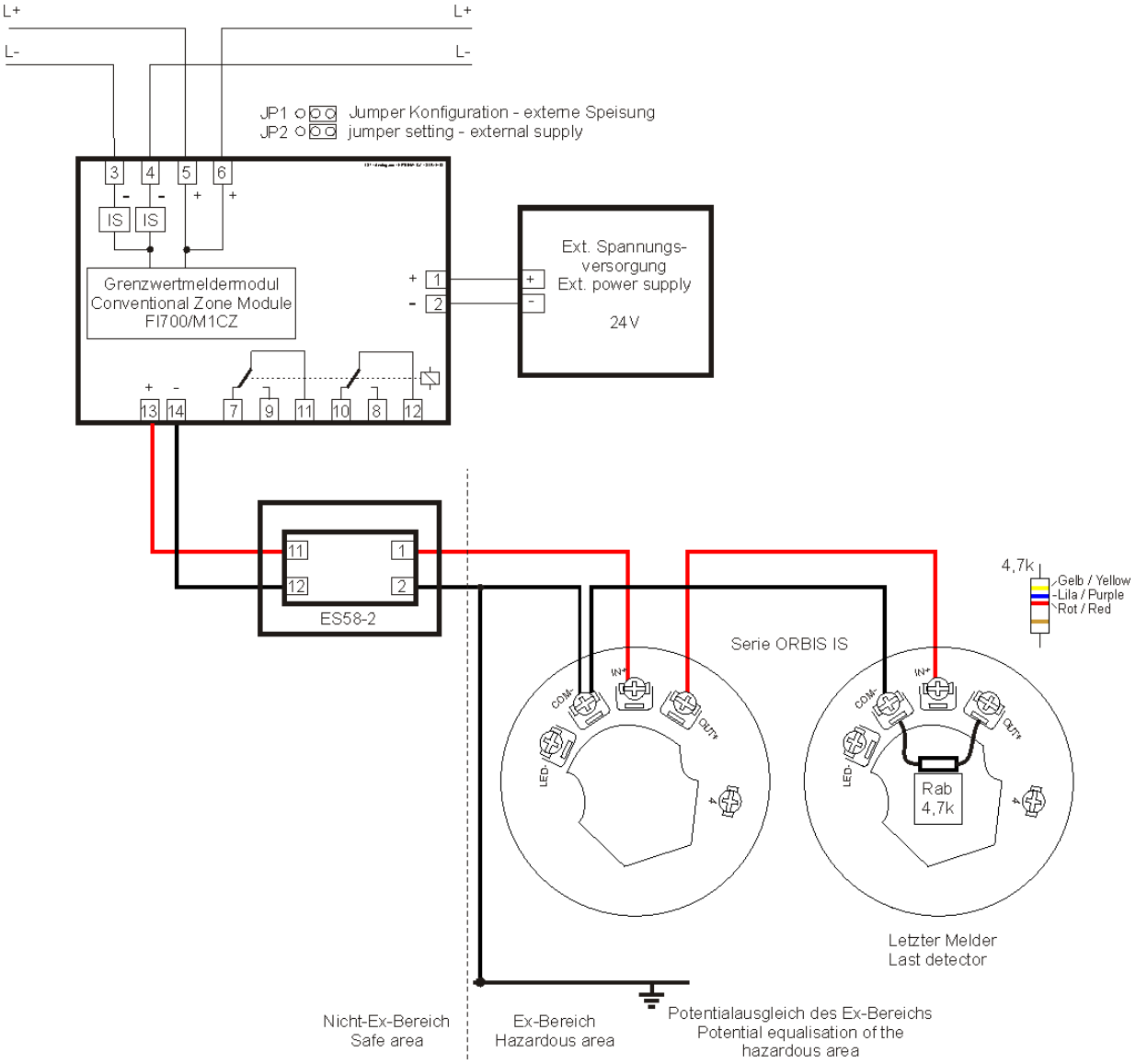
The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

3.6.1.3 Automatic detectors Series ORBIS I.S.

The connection shown below applies to the following detectors:

- Optical Smoke Detector OP-52027
- Optical-Thermal Detector OH-53027
- Thermal Detector HT-51145 (A1R)
- Thermal Detector HT-51157 (A1S)
- Thermal Detector HT-51147 (A2S)
- Thermal Detector HT-51149 (BR)
- Thermal Detector HT-51151 (BS)
- Thermal Detector HT-51153 (CR)
- Thermal Detector HT-51155 (CS)

In the hazardous area, up to 28 detectors may be connected. For the connection of the ORBIS I.S. detectors, the Detector Base MB-50018 is needed.



The cabling in the hazardous area has to comply with the local regulations, guidelines and requirements.

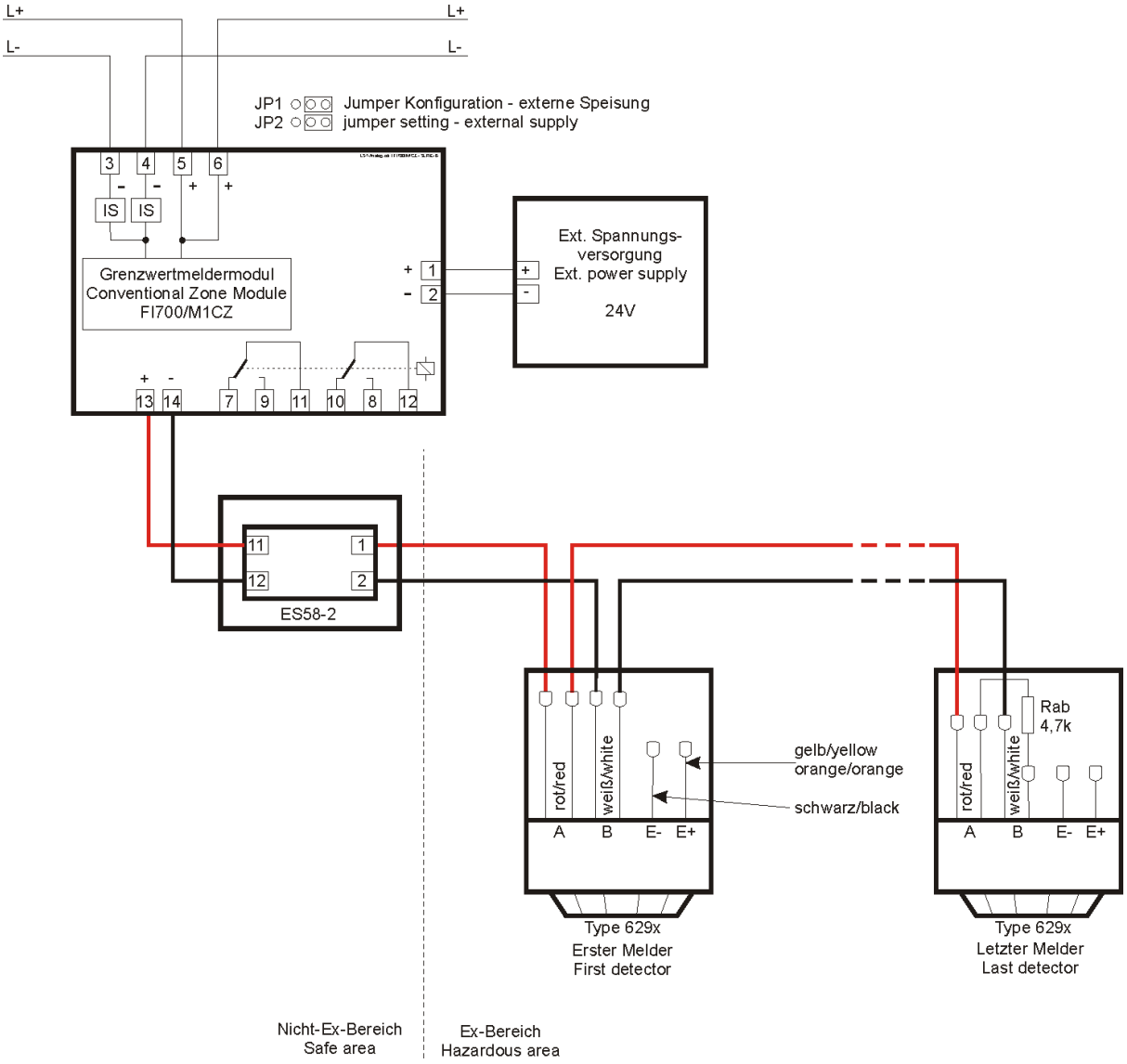
3.6.1.4 Thermal Detectors 6295 and 6296

Note

Up to 32 Thermal Detectors 6295 or 6296 may be connected to a conventional zone module.

Type	EN 54-5 Class
6295	57°C – A2S
6296	72°C – B2

Connection



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

Make sure that the connection cable is sufficiently temperature-resistant.

3.6.2 Intrinsically safe detectors for hazardous areas

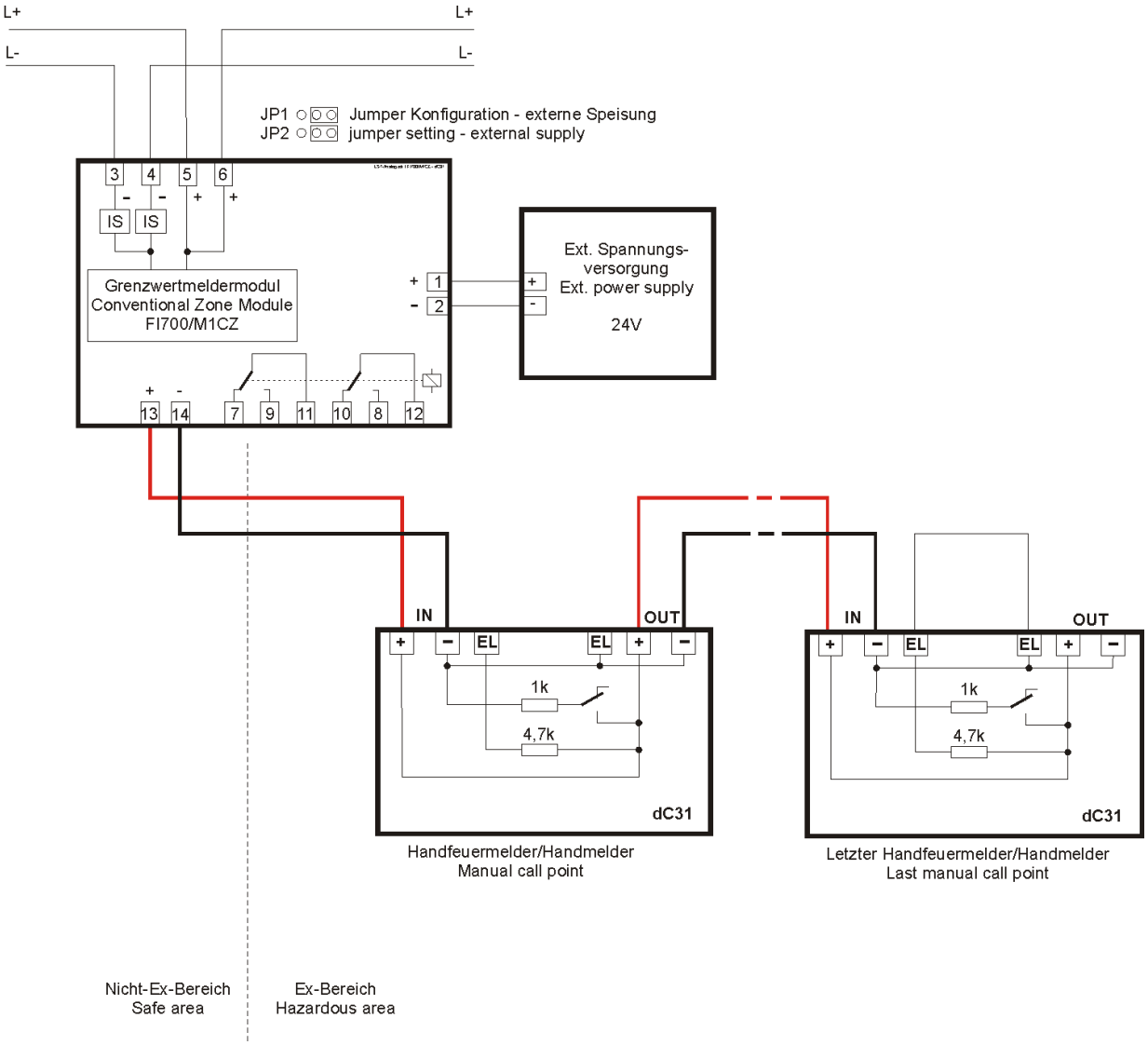
3.6.2.1 Manual call point Ex dC31

Due to the protection principles "increased safety", "encapsulation" and "protection by enclosures", the Manual Call Point Ex dC31 can be used without a safety barrier or zener barrier. You can connect up to 20 detectors to a conventional line.

When ordering this manual call point, you have to specify the resistance values (alarm and end-of-line resistor) of this detector, because they are sealed within the detector housing and cannot be changed at a later stage.

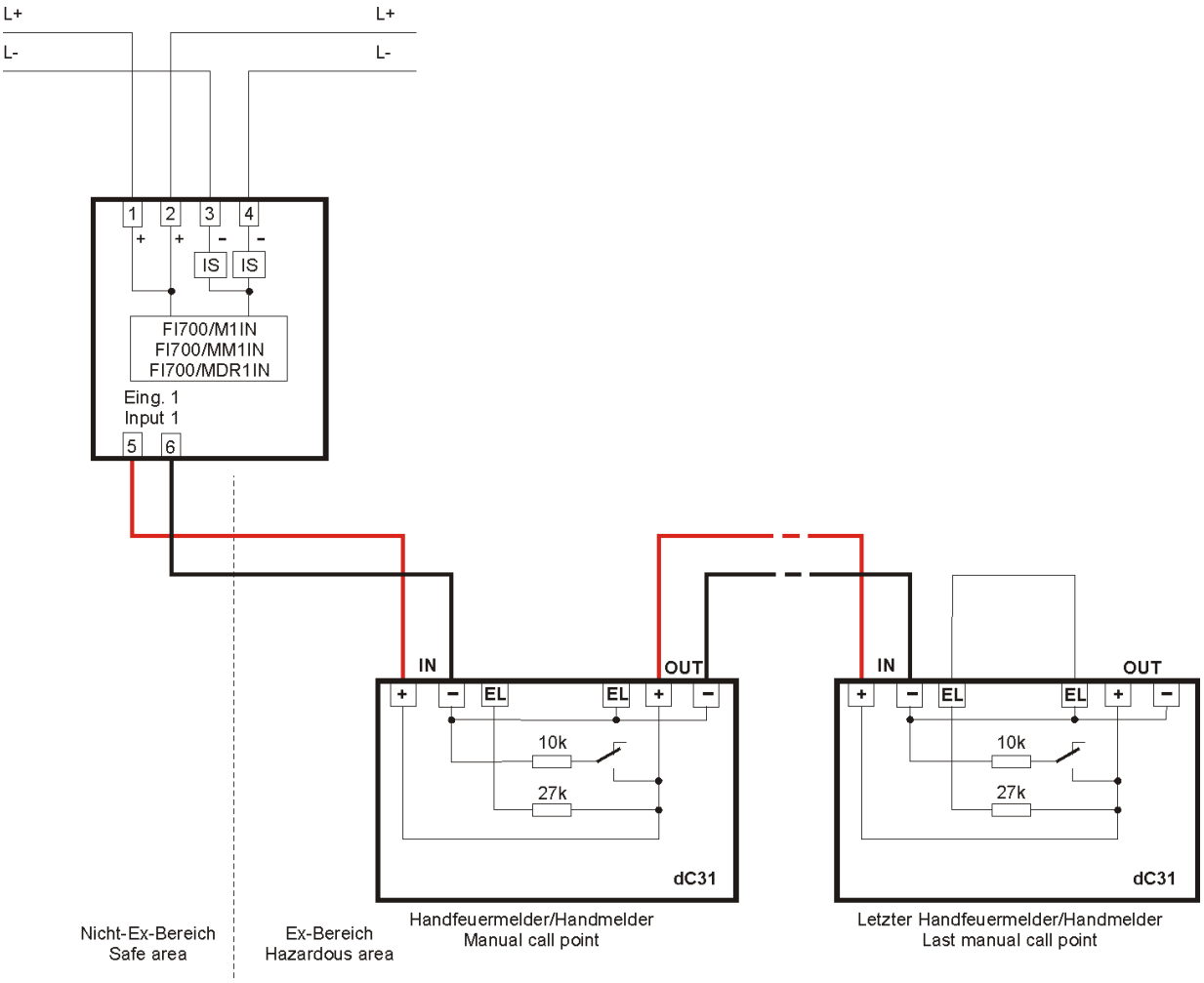
The installation in the hazardous area has to comply with the local regulations and with EN 60079 because the energy in the supply line is not limited by a safety barrier.

Connection with Conventional Zone Module FI700/M1CZ:



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

Connection with Monitor Module FI700/M1IN:



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

3.6.2.2 Flame Detectors – Series 16000

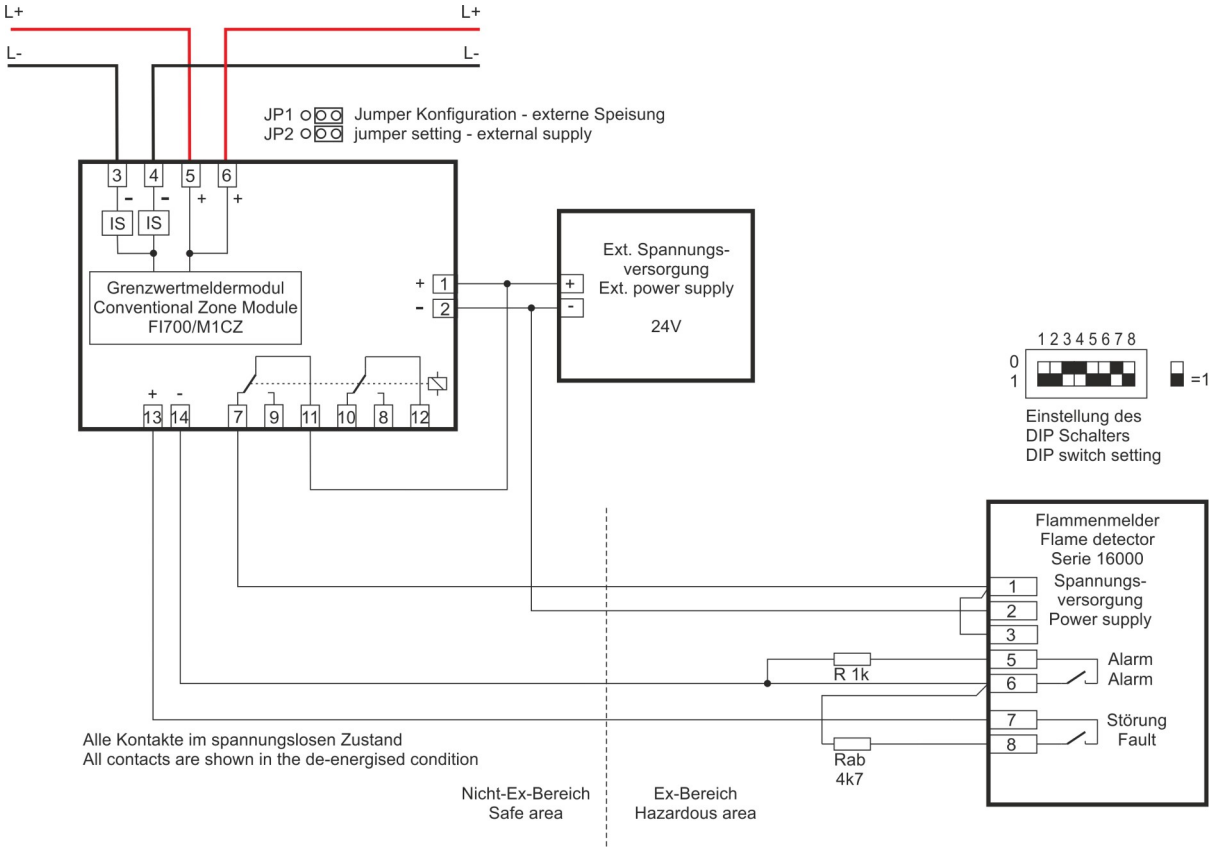
Thanks to the ignition protection class "flameproof enclosure", the flame detector can be used without the Safety Barrier ES58-2 or Zener Barrier Z978.

Type	EN 54-10 Class 1
16511	IR2
16519	IR3
16521	UV/IR2

SW6	SW7	Response time
0	0	8s
1	0	4s
0	1	2s
1	1	1s

By means of the DIP switches, the detector can be adjusted to the various operating conditions. The switches 6 and 7 allow you to change the response time.

Connection with Conventional Zone Module FI700/M1CZ:

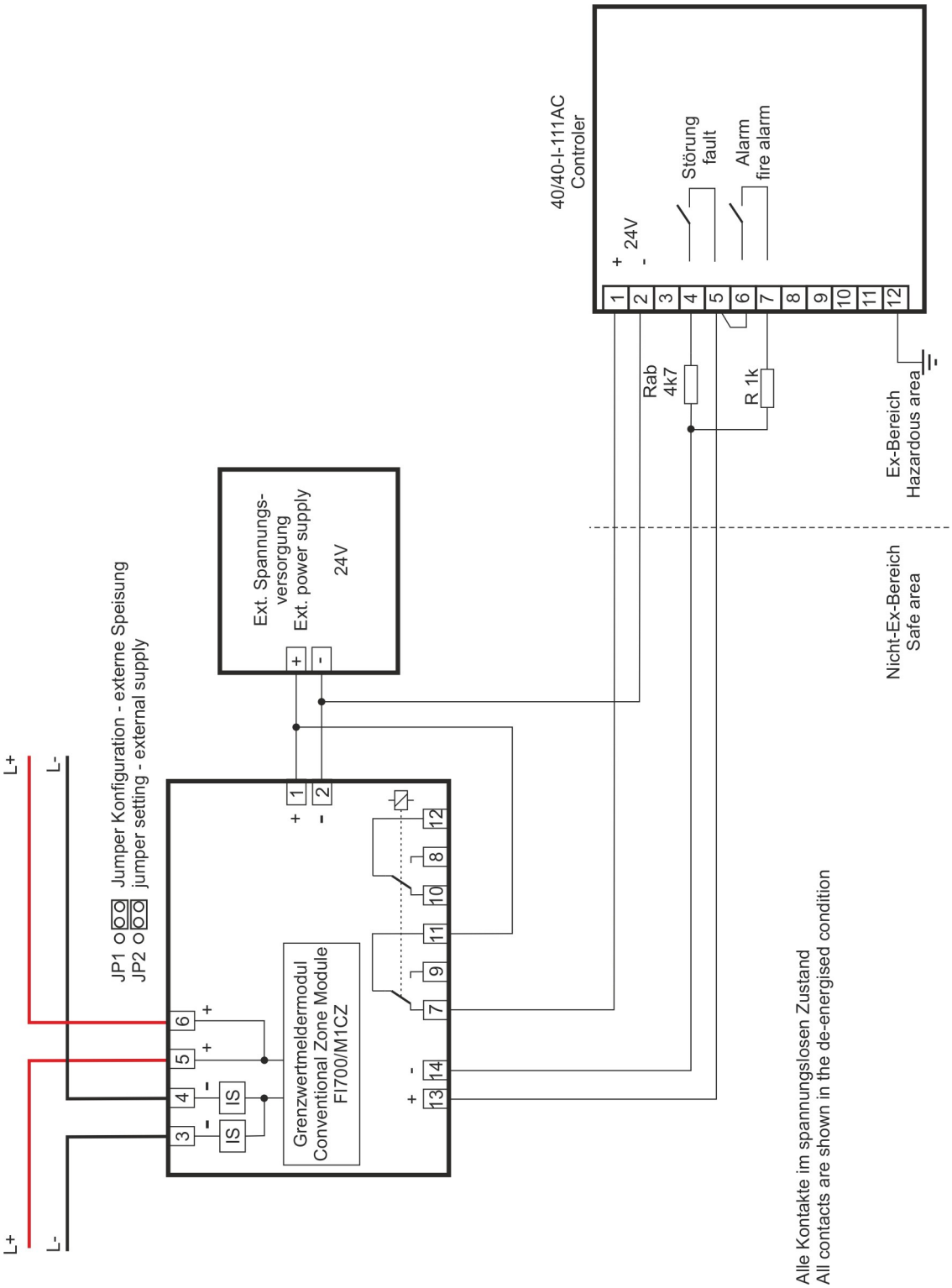


The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

The installation in the hazardous area has to comply with EN 60079 because the energy in the line is not limited by barriers.

3.6.2.3 Flame Detector – 40/40-I-111AC

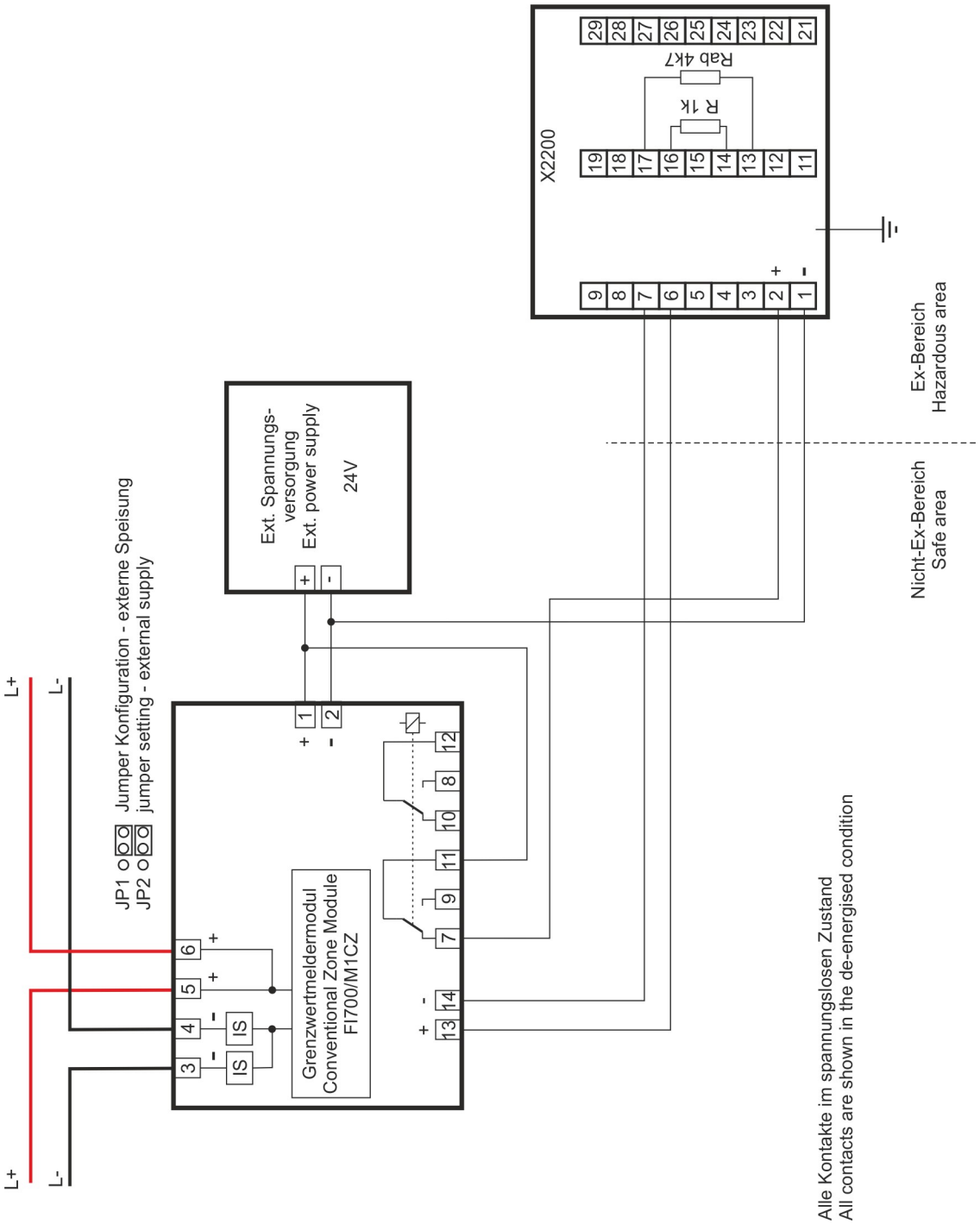
Thanks to the ignition protection class "flameproof enclosure," the flame detector can be used without a safety barrier or zener barrier.



The installation in the hazardous area has to comply with EN 60079 because the energy in the line is not limited by barriers.

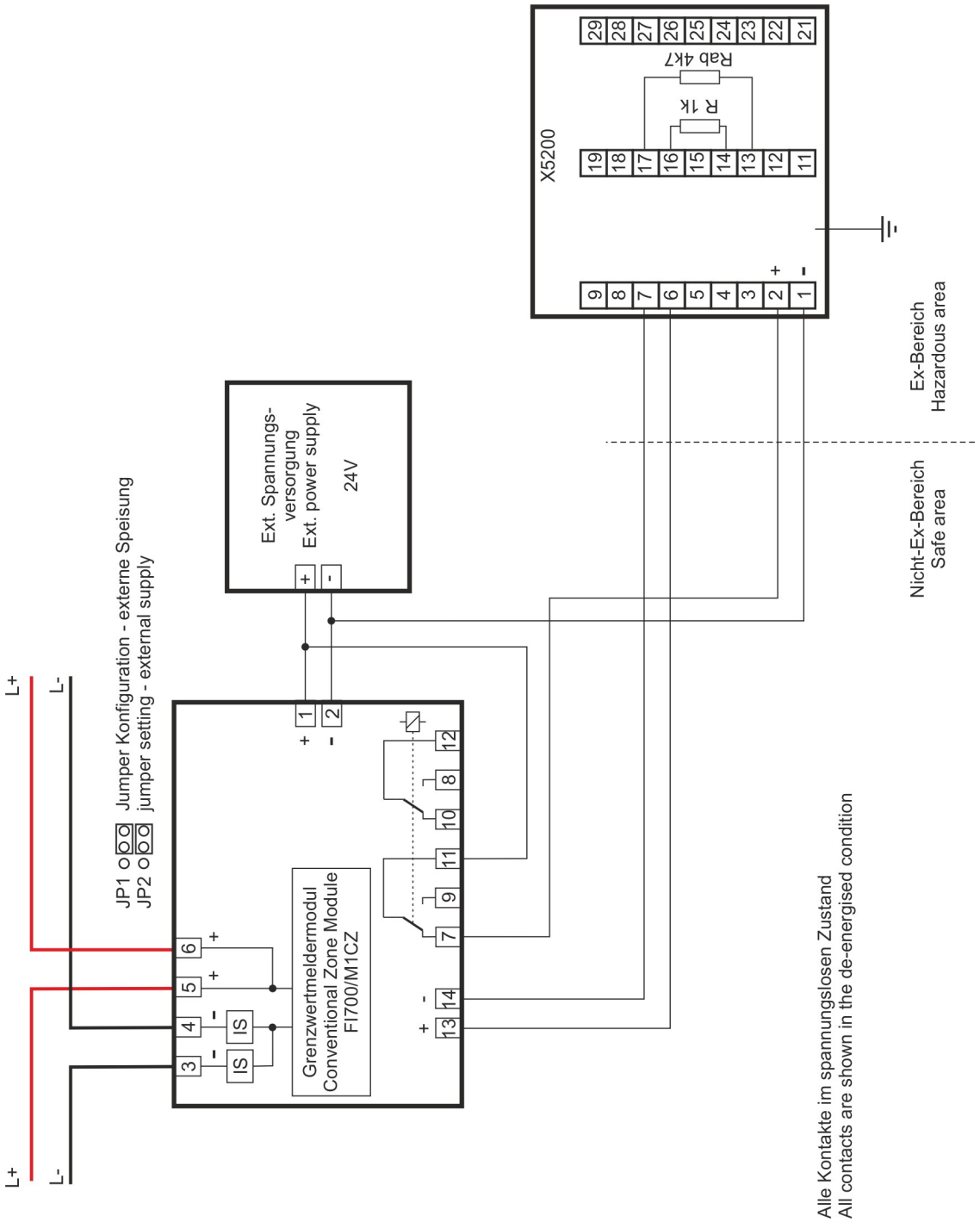
3.6.2.4 Flame Detector – X2200

Thanks to the ignition protection class "flameproof enclosure," the flame detector can be used without a safety barrier or zener barrier.



3.6.2.5 Flame Detector – X5200

Thanks to the ignition protection class "flameproof enclosure," the flame detector can be used without a safety barrier or zener barrier.

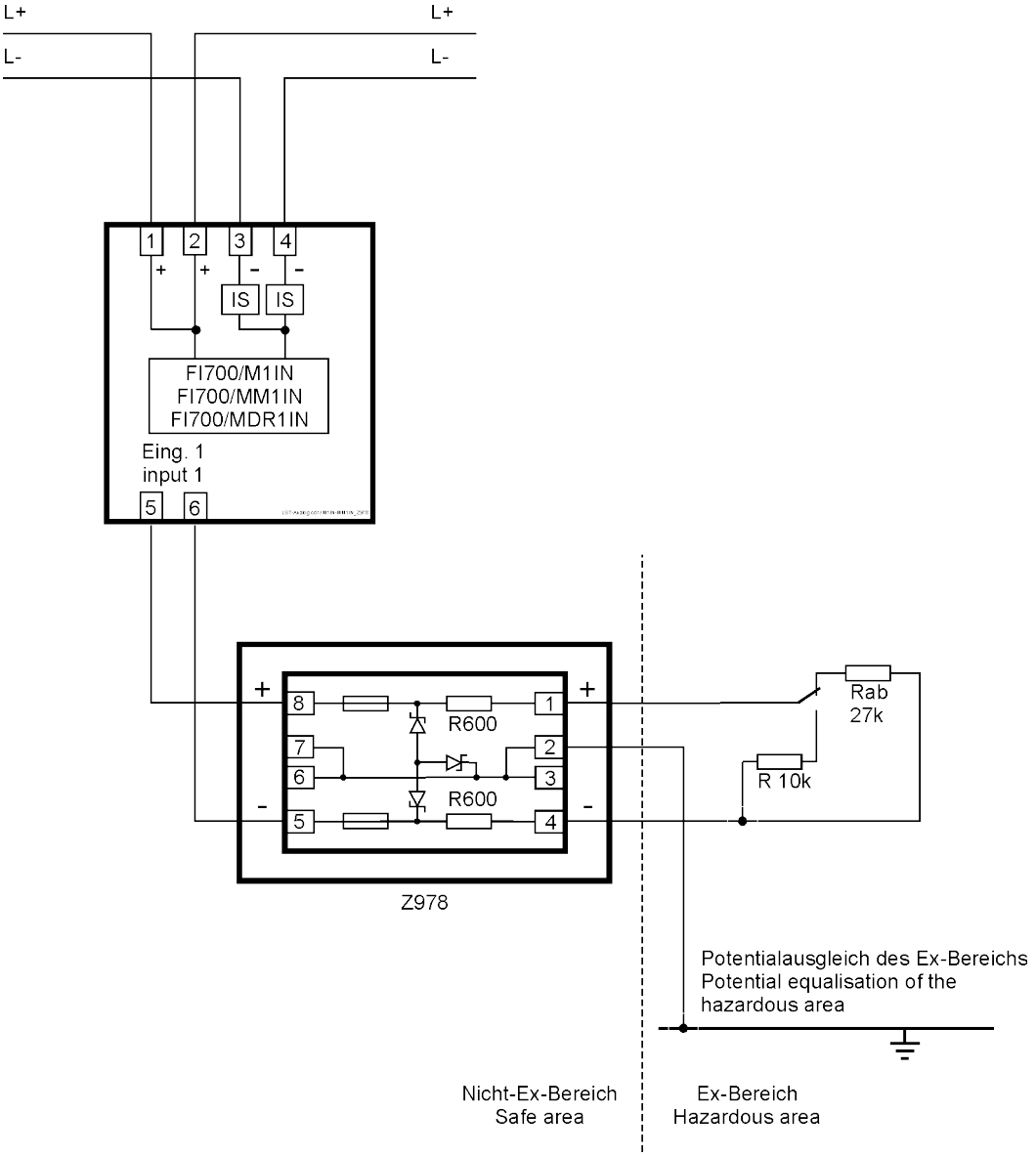


3.6.3 Detectors without energy storage devices - contact detectors

Fire detectors or display devices which do not contain energy storage devices (capacitors, inductors, power sources, etc.) can be used virtually without restriction and without labelling according to Clause 12 of DIN EN 50020 in intrinsically safe electric circuits. For this purpose, the Zener Barrier Z978 is used.

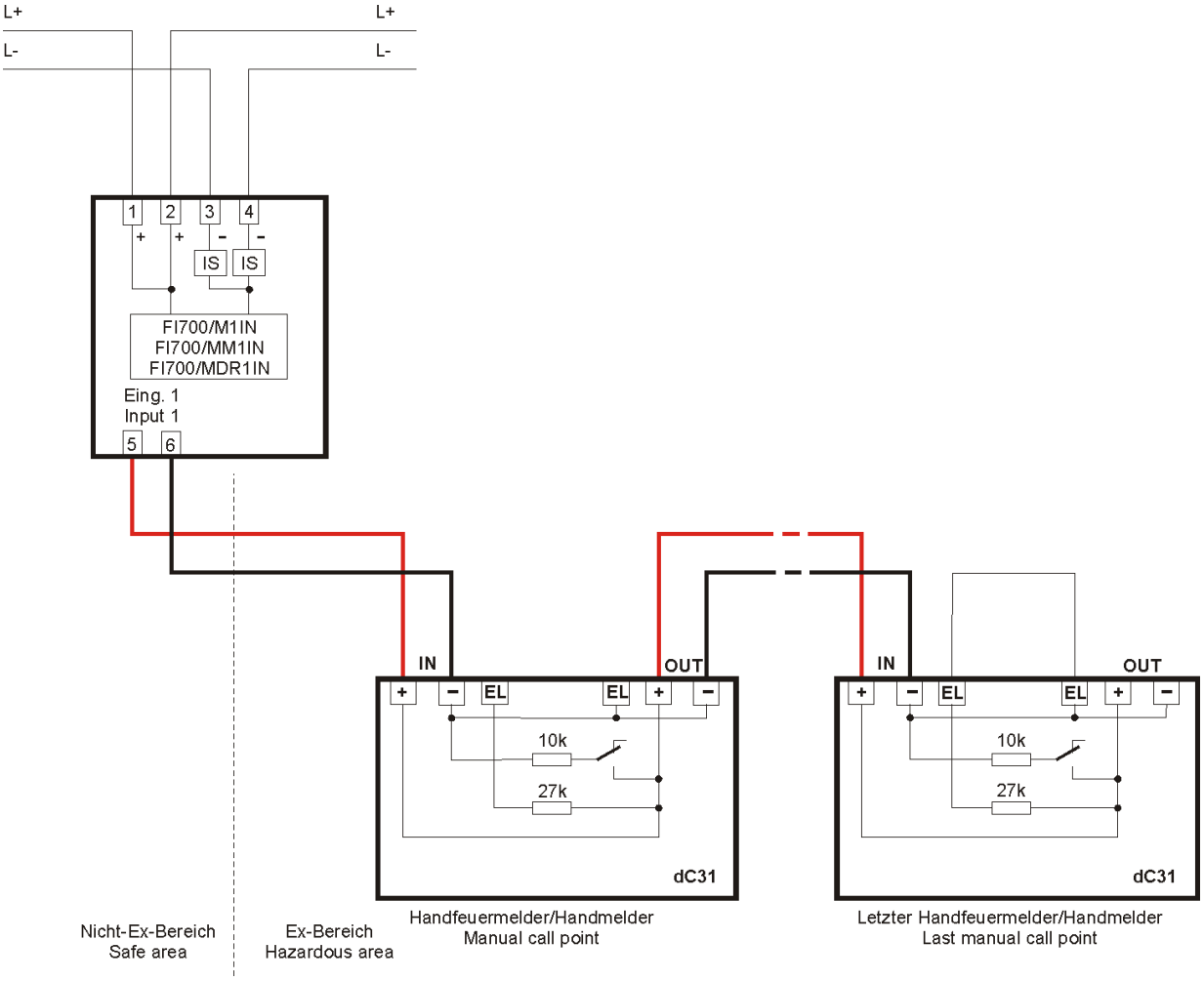
3.6.3.1 Contact detectors with monitor modules and Zener Barrier Z978

Monitor modules can be used to connect contact detectors in hazardous areas. The end-of-line resistor and the alarm resistor that is to be used is the same as the one used outside the hazardous area. The connection with a Monitor Module FI700/M1IN is shown as an example.



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

3.6.3.2 Connection with Monitor Module FI700/M1IN



The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

3.7 Connection of wireless detectors Series FI700/RF / FI720/RF / FI750/RF

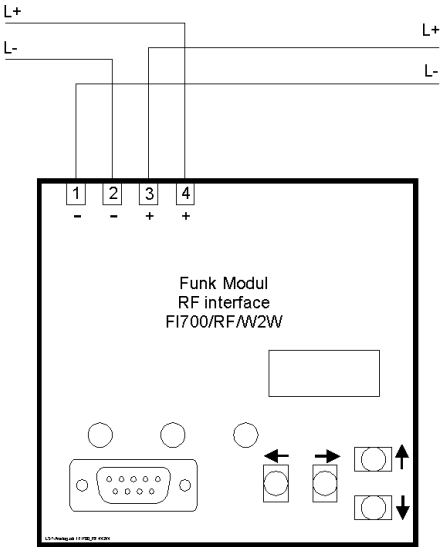
In order to be able to use wireless detectors, you first have to connect an RF interface to the loop. Also see the other documents of the chosen RF system.

3.7.1 RF Interface FI700/RF/W2W / FI720/RF/W2W

3.7.1.1 Notes

- Please consult the manual of the RF interface to obtain relevant information about how to link wireless detectors to the interface.
- The RF Interface FI7x0/RF/W2W supports up to 32 wireless elements.

3.7.1.2 Connection

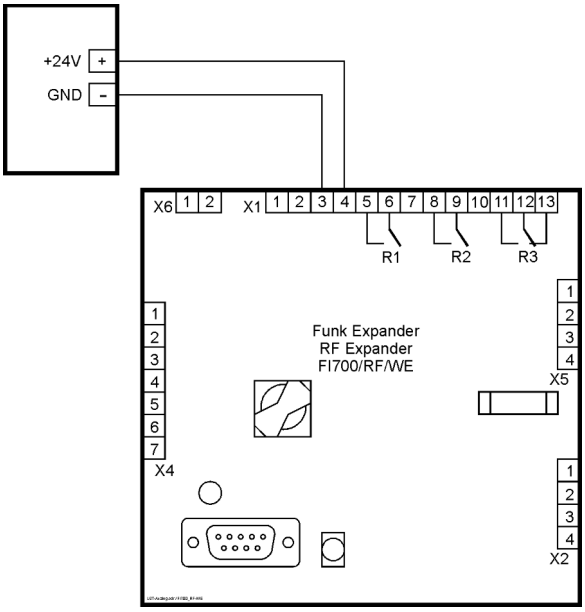


The RF interface is directly connected to the loop and does not require any additional power supply.

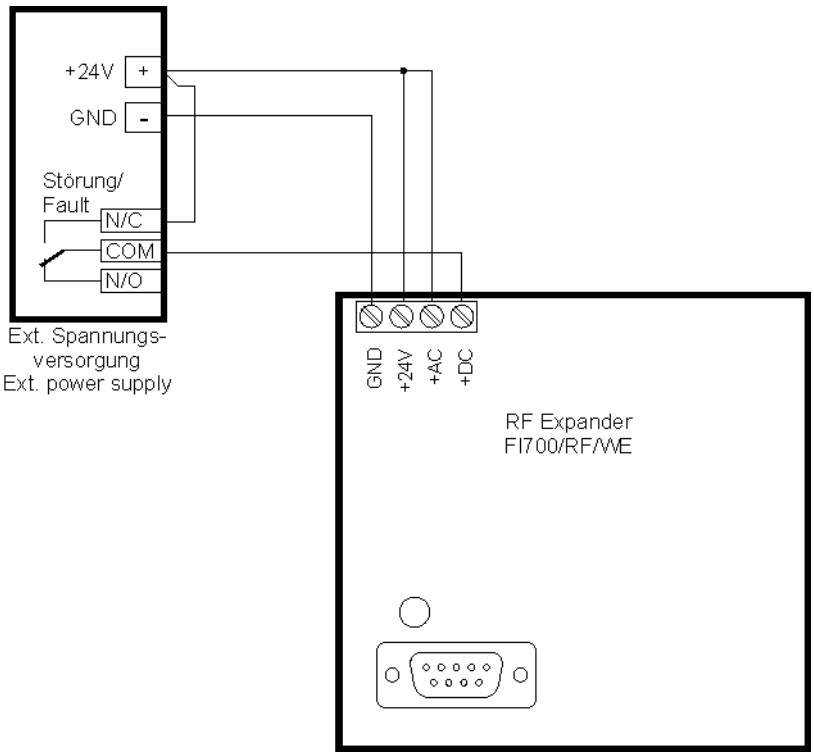
3.7.2 RF Expander FI700/RF/WE / FI720/RF/WE

If you want to expand the range of the RF system you can use the RF Expander FI700/RF/WE or FI720/RF/WE.

3.7.2.1 Connection FI700/RF/WE – old version



3.7.2.2 Connection FI700/RF/WE – new version – and FI720/RF/WE



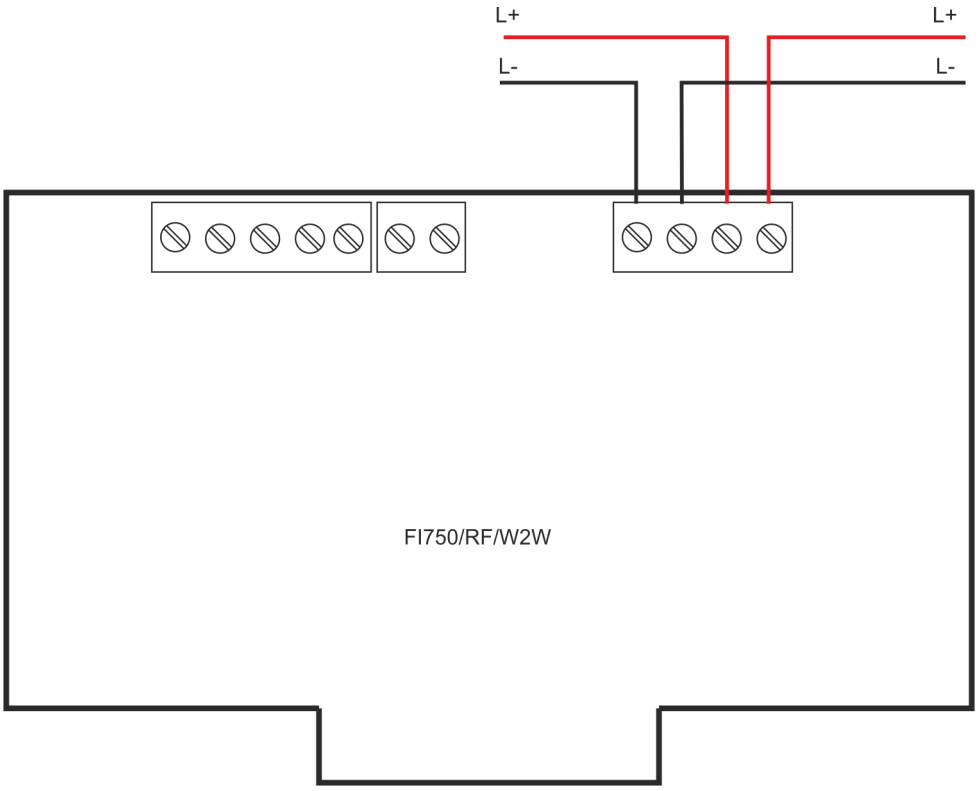
If the expander is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.7.3 RF Interface FI750/RF/W2W

3.7.3.1 Notes

- For information on how to link the wireless detectors to the RF interface, please refer to the documentation of the RF interface.
- One RF Interface FI750/RF/W2W can handle up to 128 wireless elements.
- The local regulations must be observed – this can result in a reduction to 32 elements.

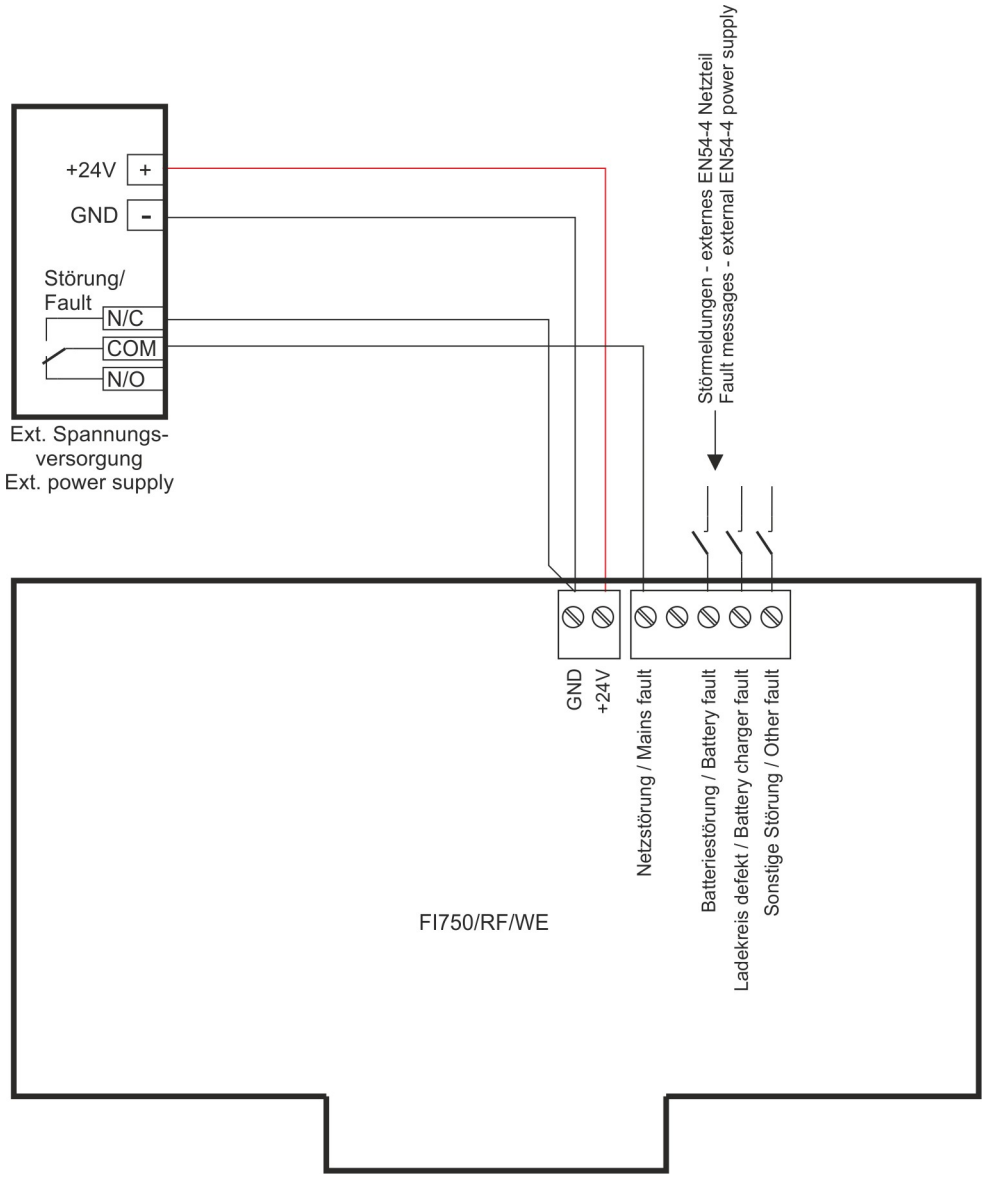
3.7.3.2 Connection



This RF interface is powered via the loop and must not be powered by other sources.

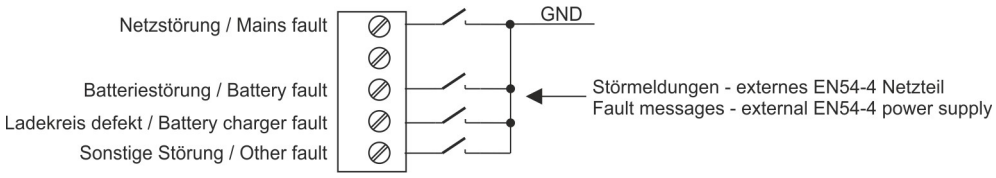
3.7.4 RF Expander FI750/RF/WE

If you want to extend the range of the RF system FI750/RF, you can use the RF Expander FI750/RF/WE.



In this example, the common fault contact of the power unit has been routed to the "Mains fault" input of the FI750/RF/WE. With this connection, the handling of the input for the "Mains fault" has to be set to "Open".

If the power unit fault messages are to be evaluated more finely, you can use the inputs that are available on the FI750/RF/WE.



3.8 Connection of conventional detectors with a Conventional Zone Module FI700/M1CZ

By means of the Conventional Zone Module FI700/M1CZ, automatic conventional detectors can be connected to a loop with the Labor Strauss/700 protocol.

The maximum line resistance of the detection loop is 50 Ohm per wire. If a 0.5mm² wire is used, this corresponds to a distance of approx. 1400m between the last detector and the conventional zone module.

The alarm condition of a conventional detector zone is reset by disabling the zone for at least 10 seconds.

If several conventional detectors have been connected to the same module, in the event of an alarm the fire detection control panel will indicate the same element number for all of them.

The maximum detector current is **5mA**.

According to the parameter setup of the fire detection control panel, either a resistive or capacitive end-of-line element can be used (default setting: EOL Capacitor). The line can be terminated with the enclosed **4.7µF capacitor** or the **4k7 resistor**.

The following connection diagrams are shown with a 4.7µF end-of-line capacitor.

3.8.1 Address setting

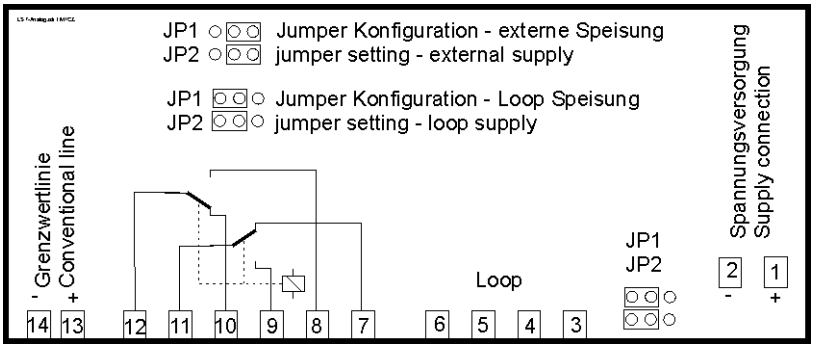
Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements".

The Conventional Zone Module FI700/M1CZ uses one address on the loop.

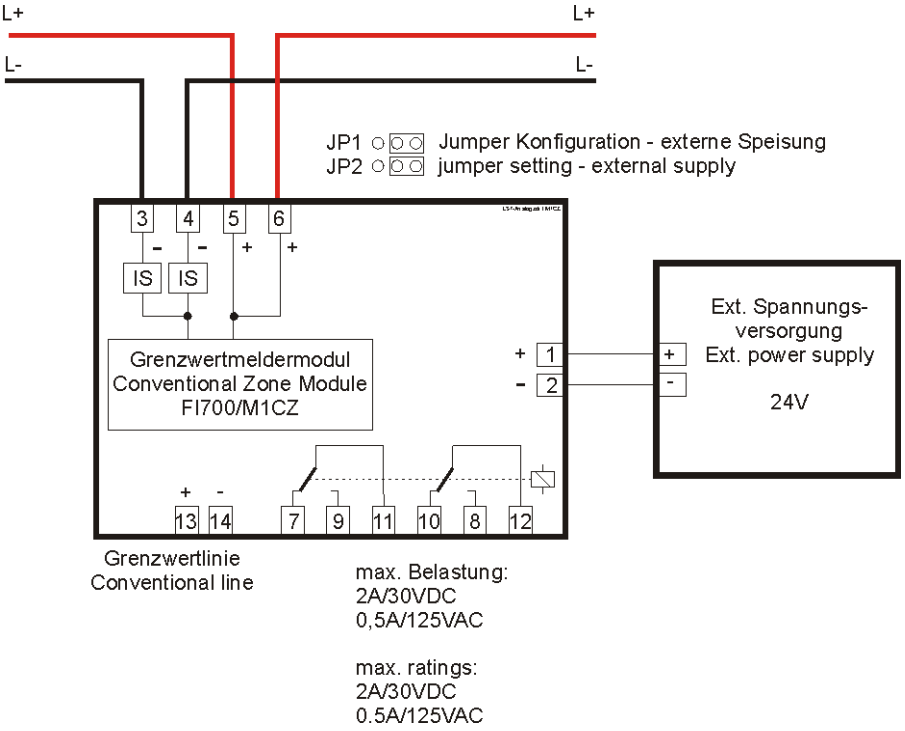
3.8.2 Power supply

A separate power supply is required for the Conventional Zone Module FI700/M1CZ. The module can be powered from the control panel, by an external power supply or via the loop itself.

The drawing below shows the position of the terminals and the possible configurations concerning the power supply.



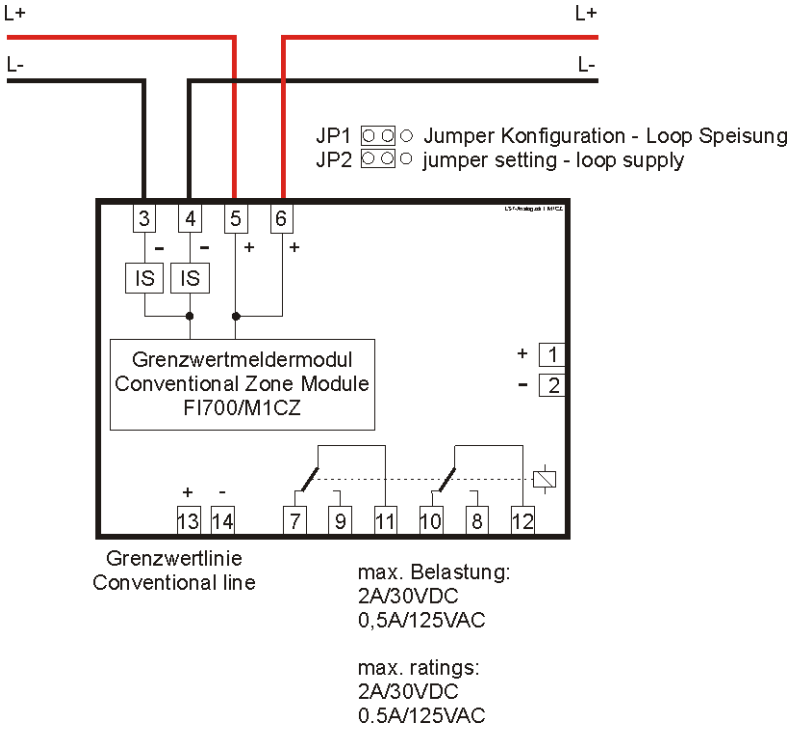
3.8.2.1 Supply from the fire detection control panel or by an external power supply



If an external power supply is used for the Conventional Zone Module FI700/M1CZ, the two jumpers on the module have to be set according to the above drawing.

If the module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.2.2 Power supply from the loop



If power is supplied through the loop, the two jumpers on the module have to be set according to the drawing. In this case, the current demand of the loop can be ascertained by means of the loop calculator spreadsheet FireSysCALC_xxx.ods for Labor Strauss detectors. It is available in the download area of the LST website (registration required) under "Tools – FireSysCALC - Calculation of fire detection systems".

3.8.2.3 Resetting contact detectors by means of a conventional zone module

The two relay contacts serve as reset output for contact detectors and will become active under the following conditions:

- Input of the module is deactivated
- When the FDCP is reset
- After a test alarm
- Type A alarm delay (first alarm)
- Type B alarm delay (pre-alarm)

In the following connections for the contact detectors, you can see that by means of these relay contacts, either

- the power supply is disconnected or
- the reset input is activated.

For detectors which are powered via the conventional line – these detectors are reset by removing the supply voltage – the relay contacts of the module are not needed.

3.8.2.4 Resetting contact detectors by means of a relay module (for example, M1IN1REL)

For the reset of the contact detector, the output of the module has to be parameterised. This function is available in the Series BC600. The BC216 does not support this possibility.
In the event of activation, the relay contact of the module will interrupt the power supply or will activate the reset input of the detector.

Parameters of the output:
Signal type: **Pulsed signal with Retrigger**,
The chosen **Pulse width** must not be **longer than 8 seconds**.

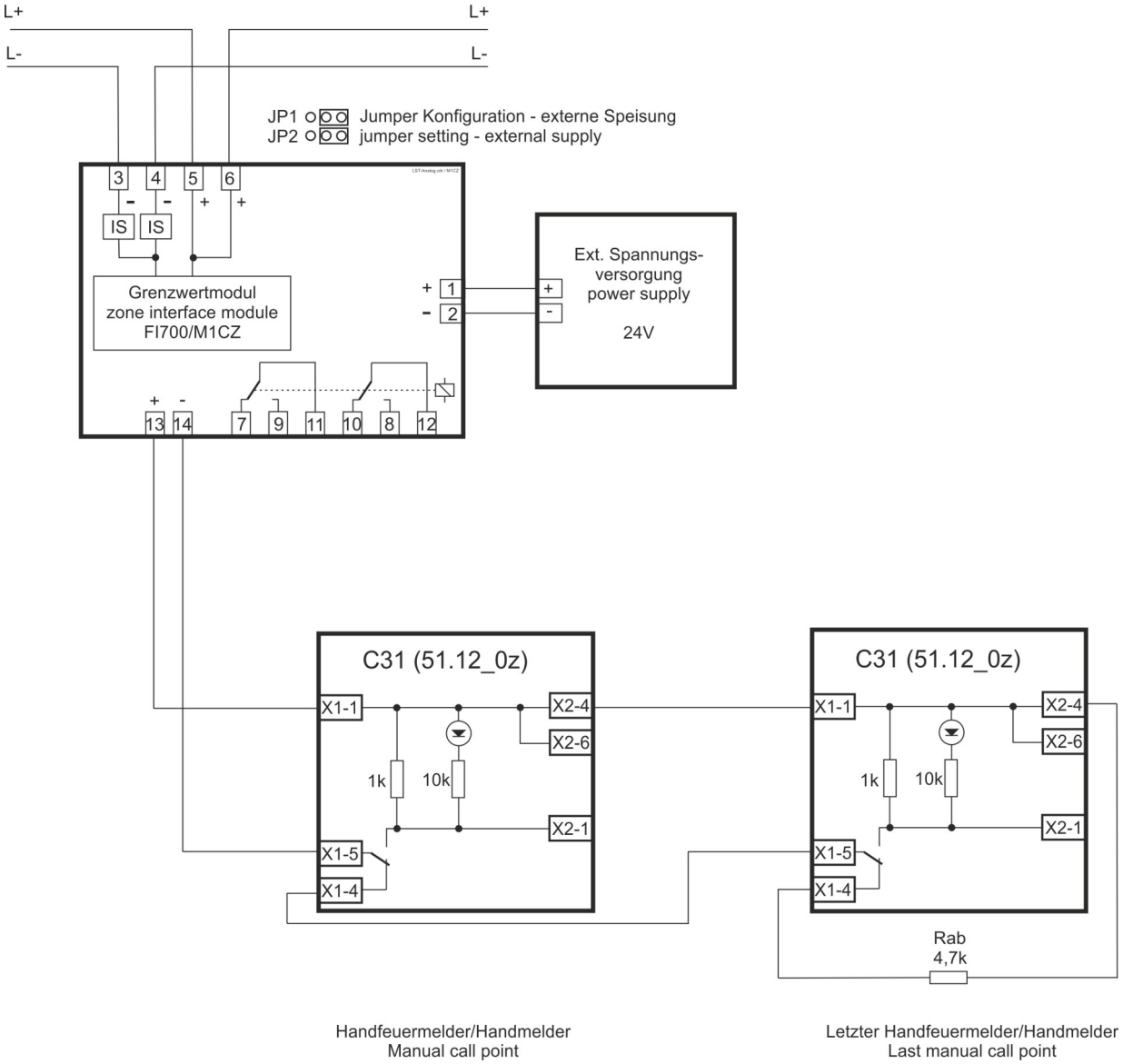
Combination with the events

- Control panel reset
- Test alarm (of the connected contact detector)
- Disablement – zone/element (of the connected contact detector)

The alarm delay according to EN 54-2 Type A or Type B cannot be used with this module.

3.8.3 Manual Call Points Series C31

This connection shows how the C31 is used on the module FI700/M1CZ with an end-of-line resistor and an external power supply.

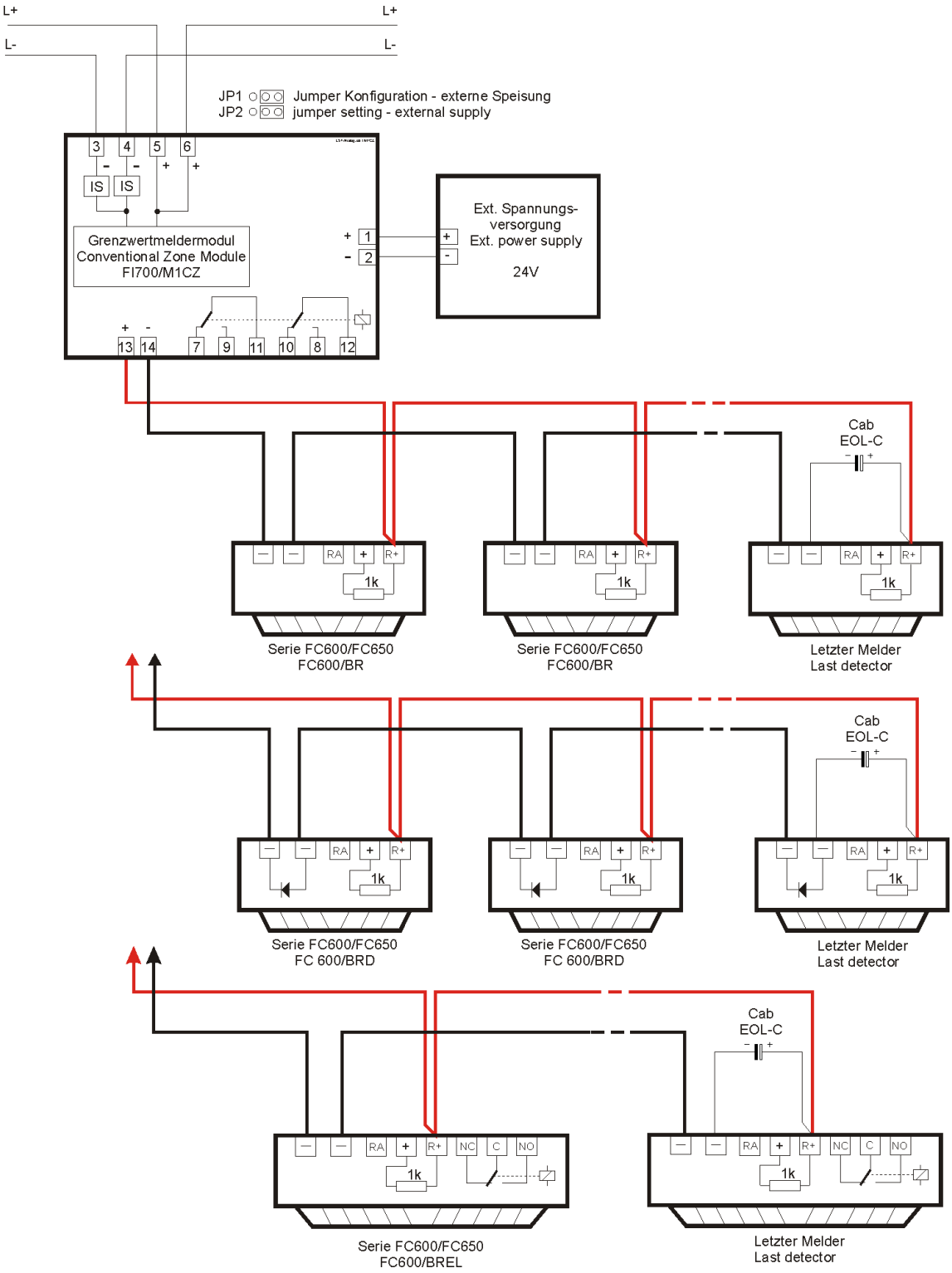


3.8.4 Detectors Series FC600 / FC650

A maximum of **20** detectors can be connected to a Conventional Zone Module FI700/M1CZ.

The line terminating capacitor that is enclosed with the conventional zone module must be installed in the last detector.

3.8.4.1 Connection of detectors Series FC600 / FC650 and external power supply of the module



If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.5 Flame Detector Series 16000 - FI700/M1CZ

3.8.5.1 Note

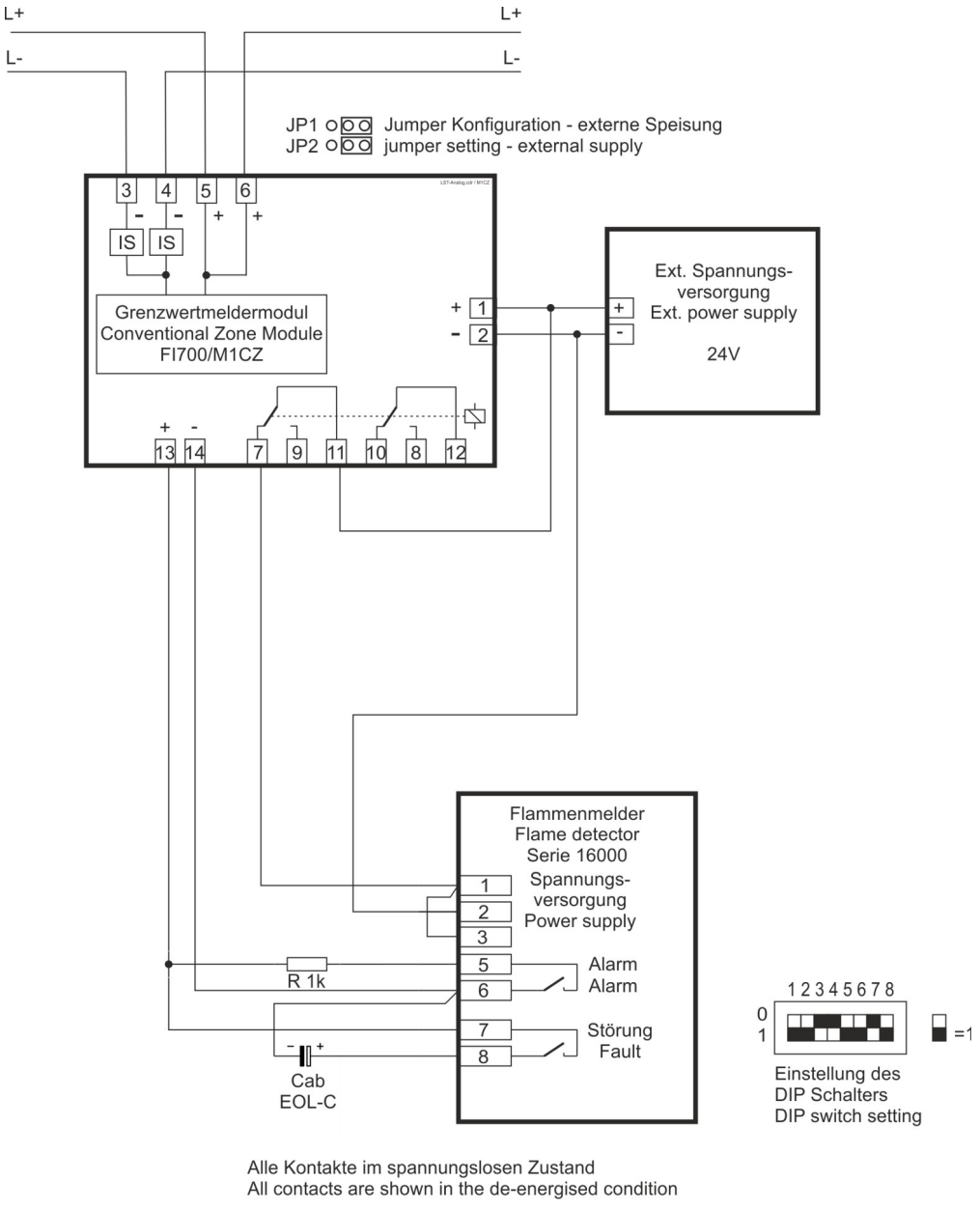
The supply voltage of the flame detector is routed via the Conventional Zone Module FI700/M1CZ. The supply voltage is interrupted by the module to reset the alarm condition.

By means of the DIP switches, the detector can be adjusted to the various operating conditions. The switches 6 and 7 allow you to change the response time.

Type	EN 54-10 Class 1
16581	IR2
16589	IR3
16591	UV/IR2

SW6	SW7	Response time
0	0	8s
1	0	4s
0	1	2s
1	1	1s

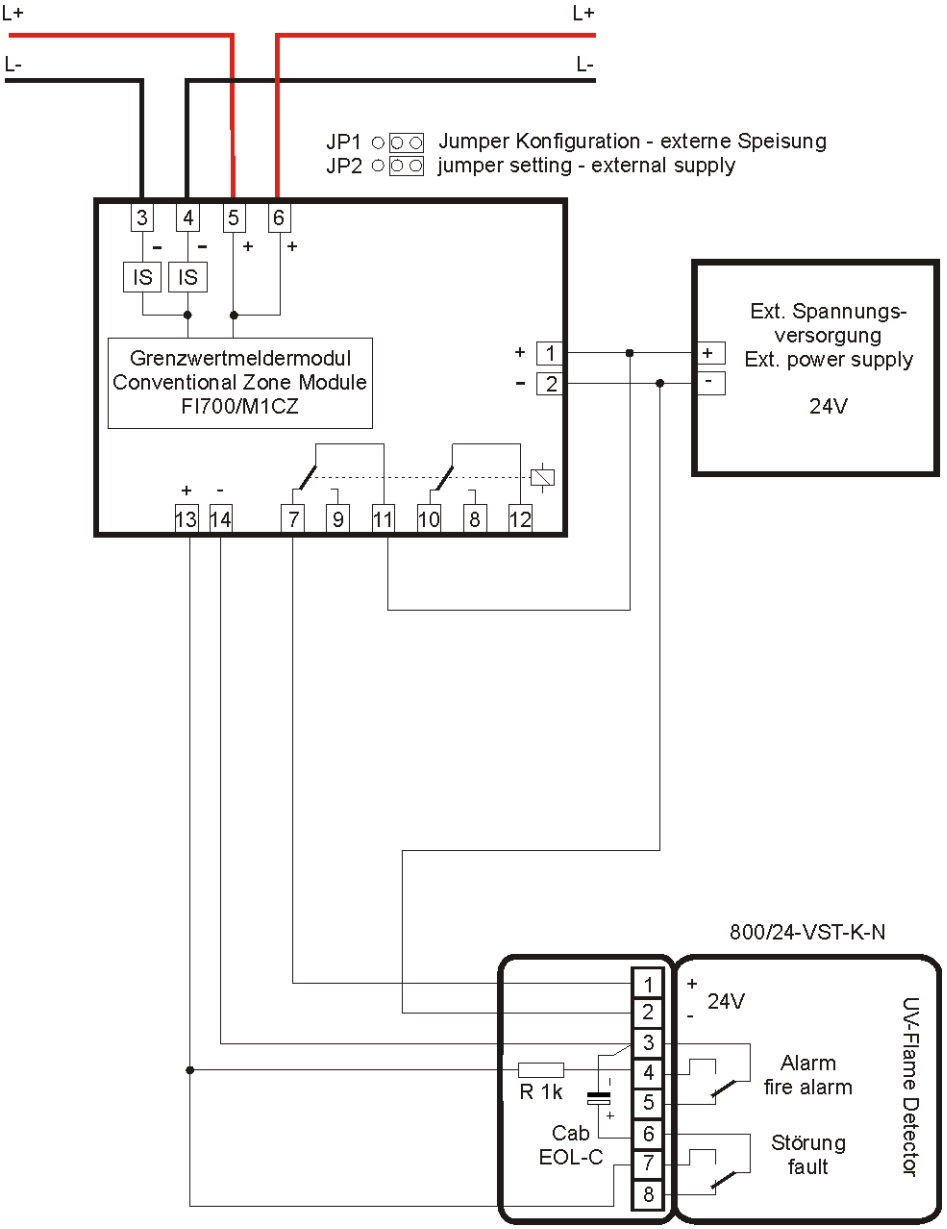
3.8.5.2 Connection



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

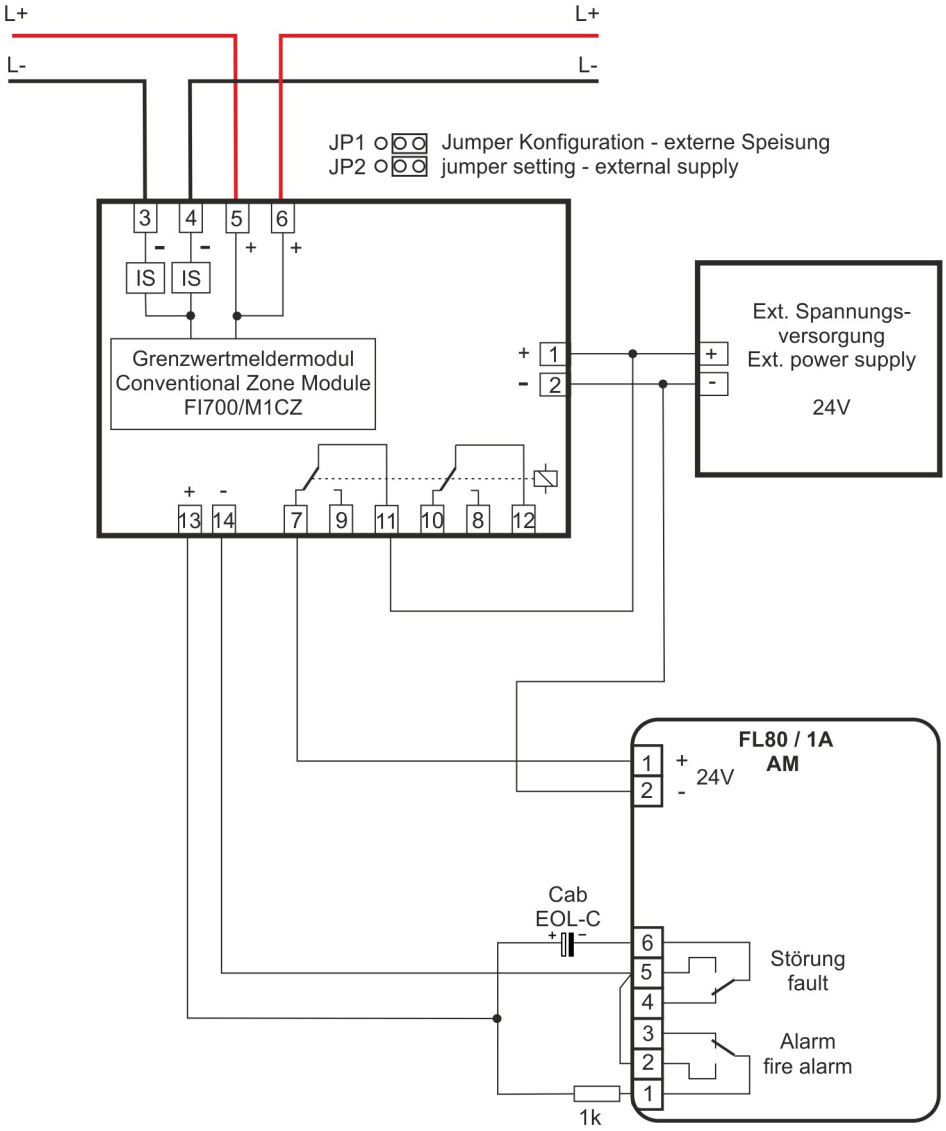
3.8.6 Flame Detector 800/24-VST-K-N - FI700/M1CZ



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

3.8.7 Flame Detector FL80 / 1A version AM - FI700/M1CZ

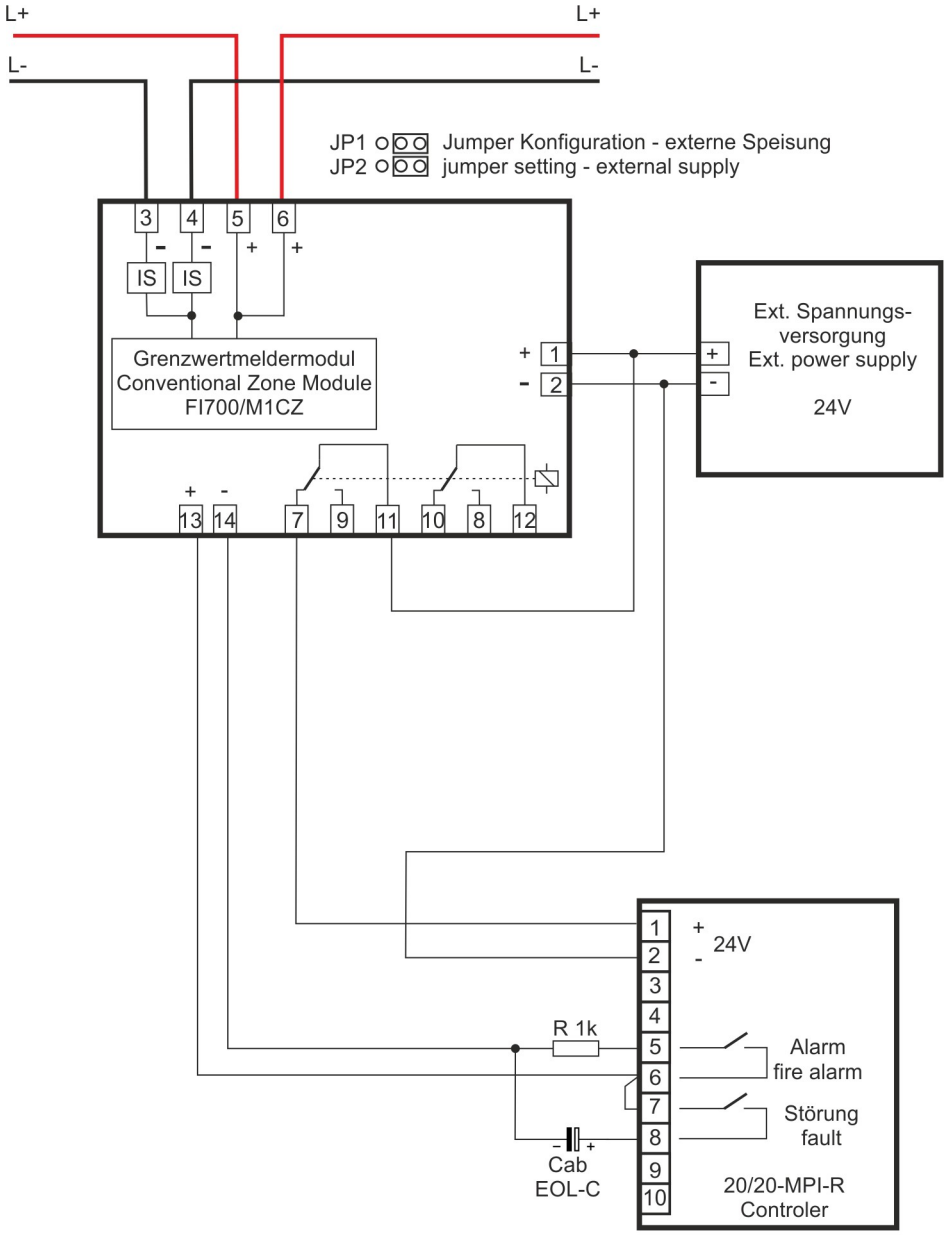


Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

For the output of the module, the signal type **Pulsed signal, retrigger func.** must be parameterised, and the output must be combined with the events **Control panel reset, Test alarm** and **Disablement zone/ element** of the special detector. The pulse width must not be set to a value higher than 8 seconds. The relay contact of the module interrupts the power supplied to the detector.
This option is not available on the BC216.

3.8.8 Flame Detector 20/20-MPI-R - FI700/M1CZ

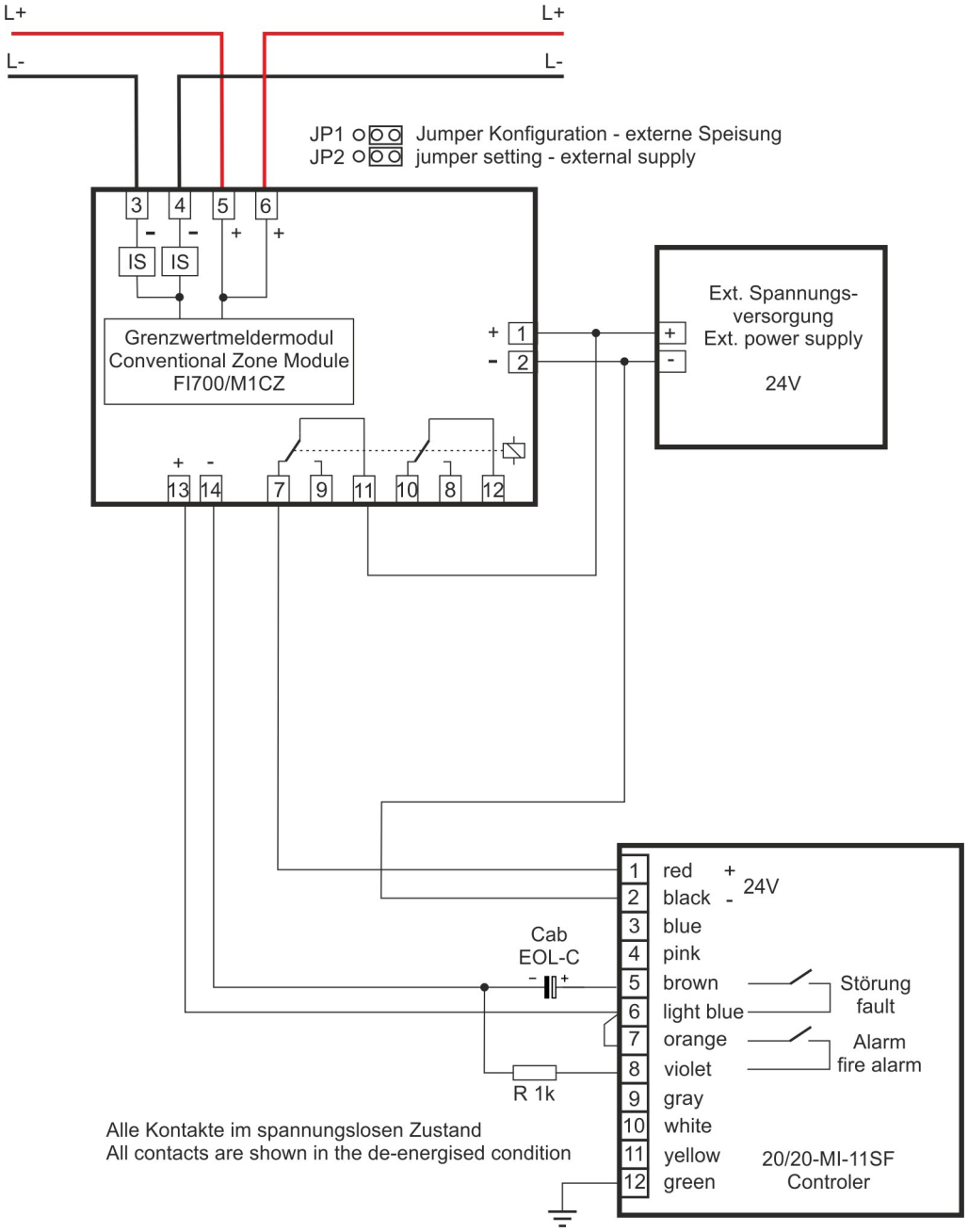


Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

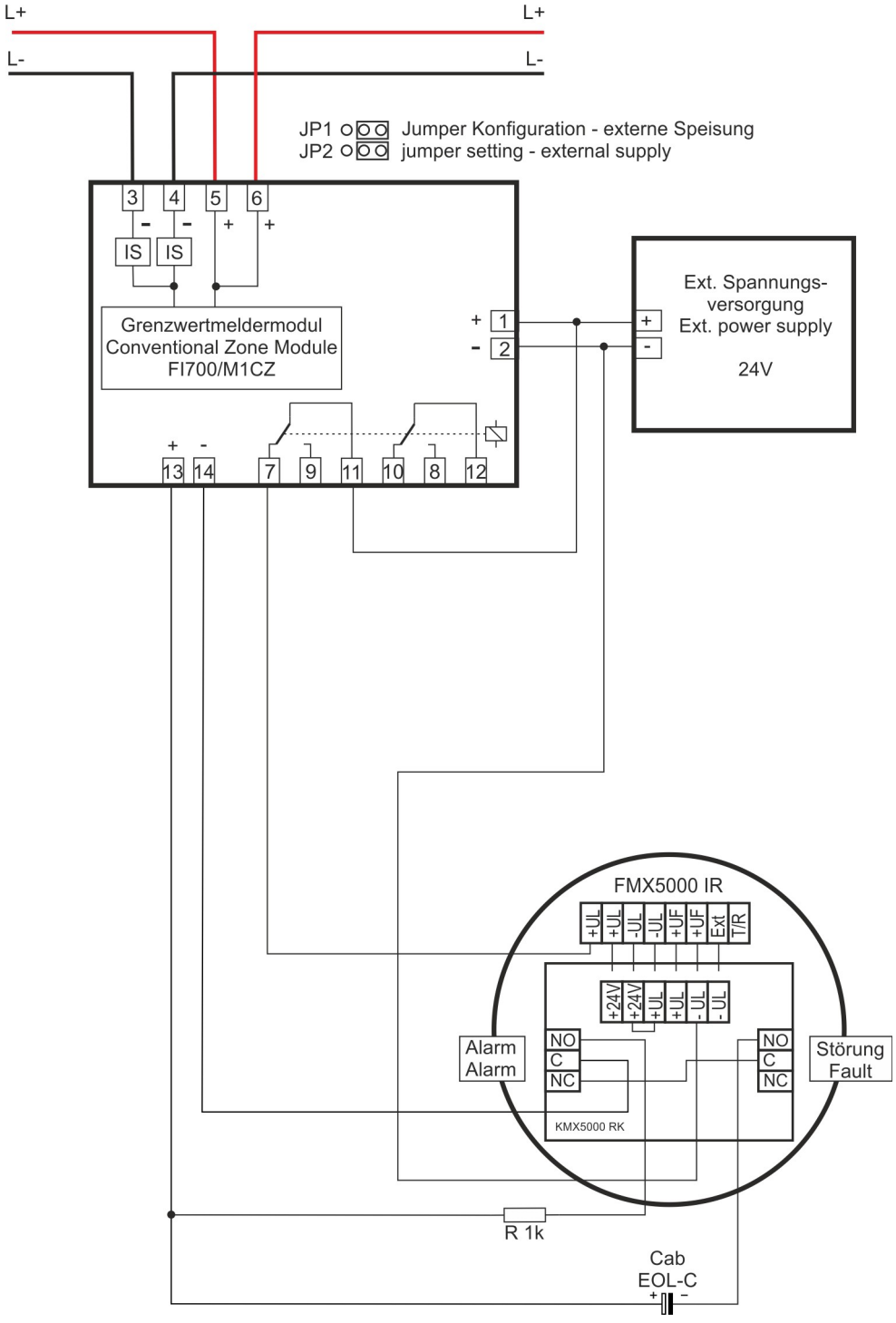
3.8.9 Flame Detector 20/20-MI-11SF - FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

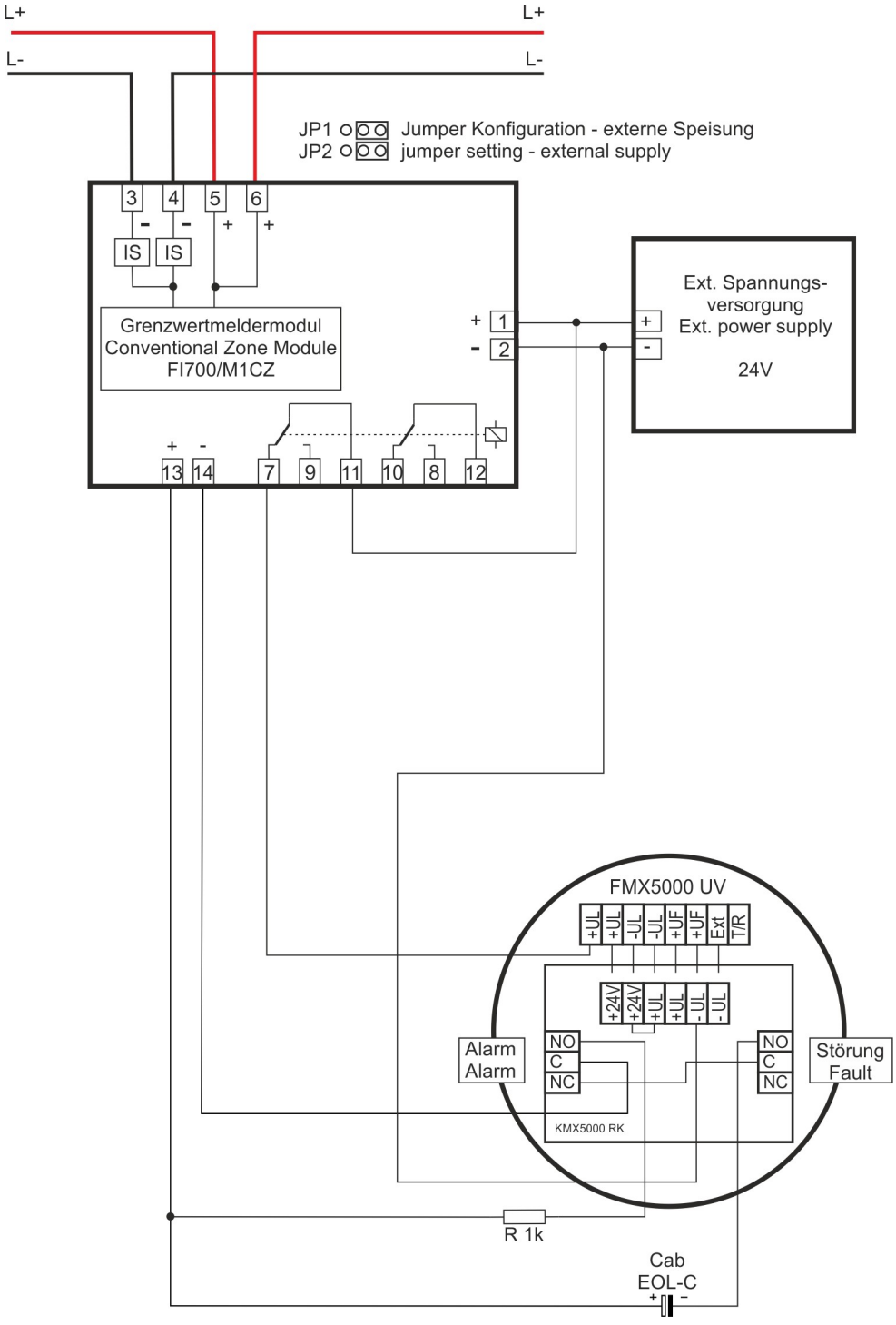
An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

3.8.10 Flame Detector FMX5000 IR - FI700/M1CZ



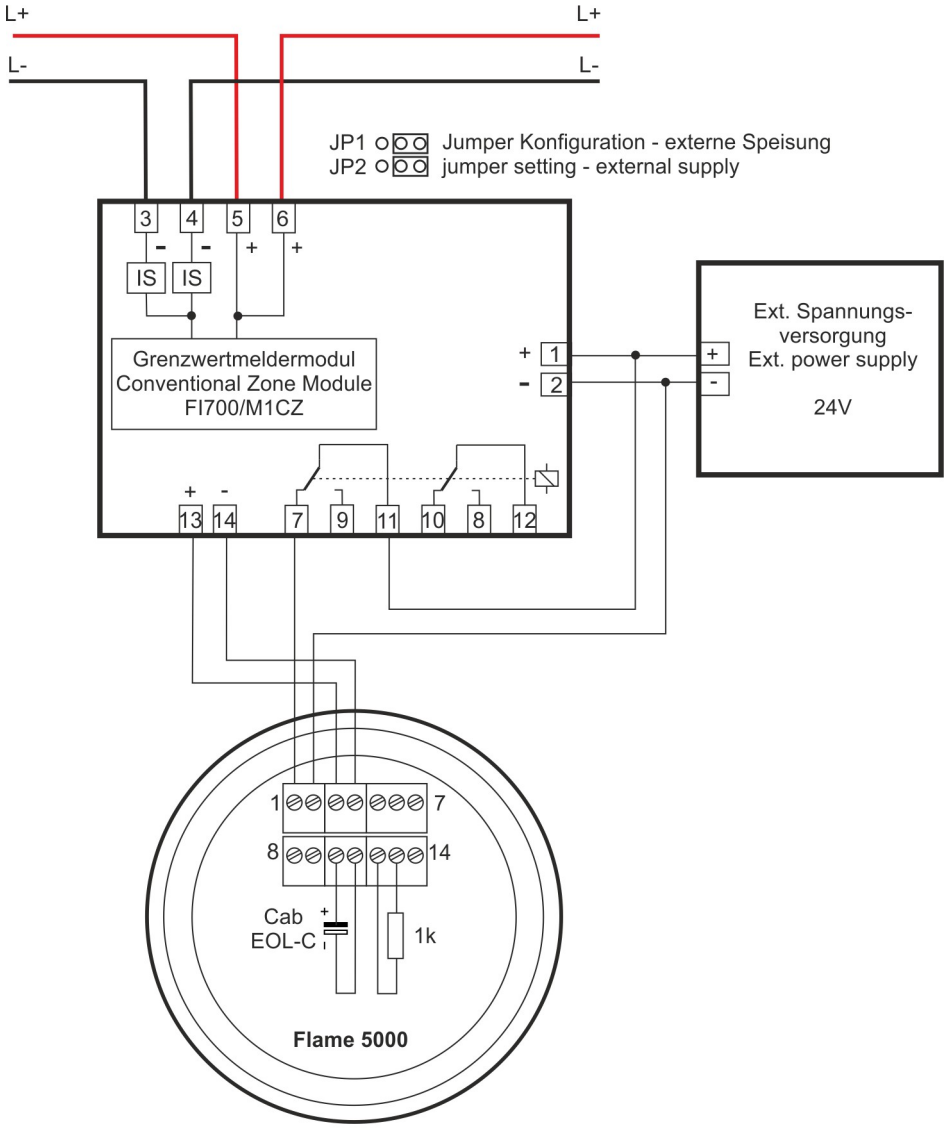
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.11 Flame Detector FMX5000 UV - FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.12 Flame detector with colour video monitoring Flame 5000 - FI700/M1CZ

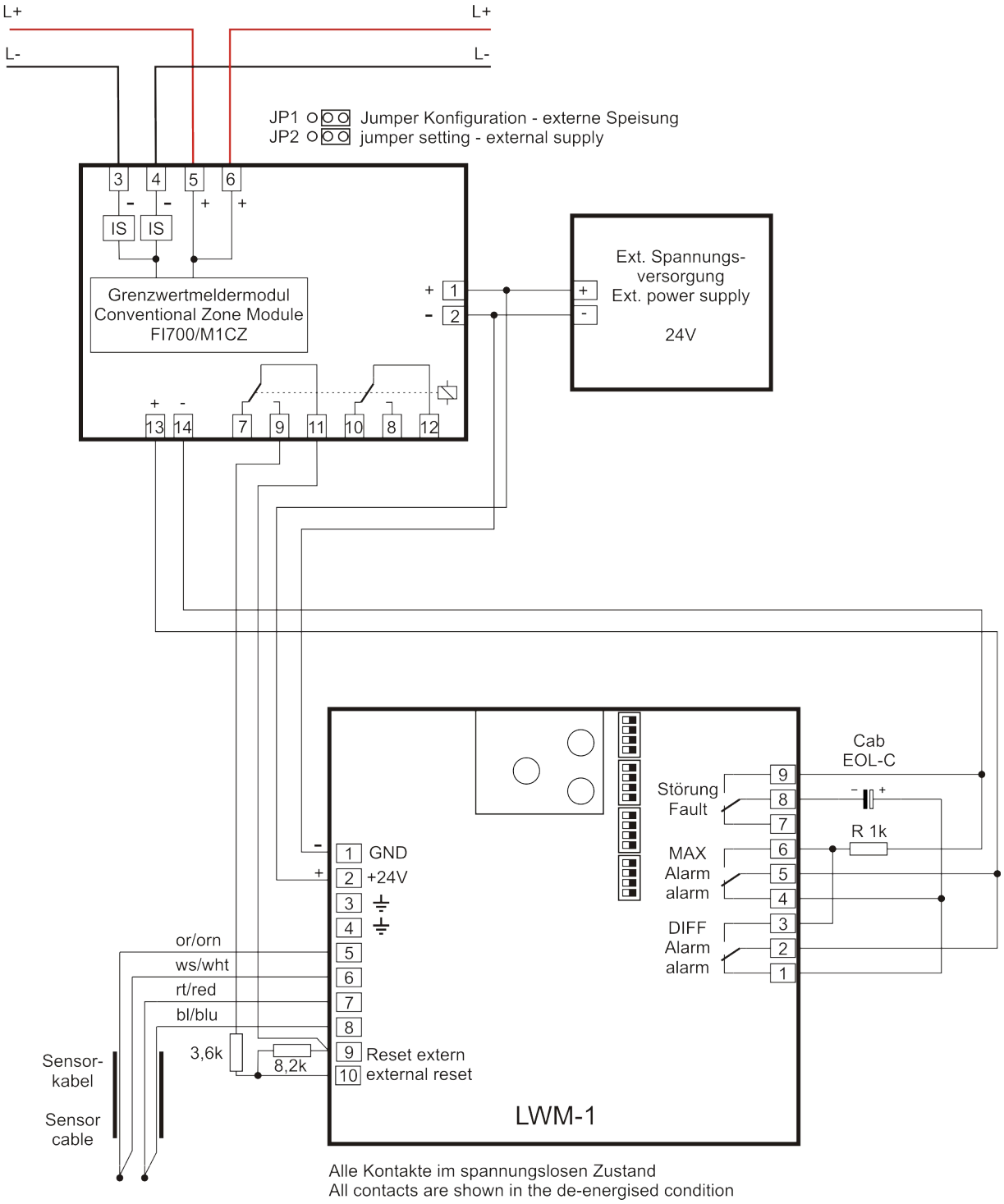


All contacts are shown in the de-energised condition.
Alarm reset is done via "Contol panel reset"

Alle Kontakte im spannungslosen Zustand.
Die Alarmrückstellung erfolgt mit BMZ rückstellen

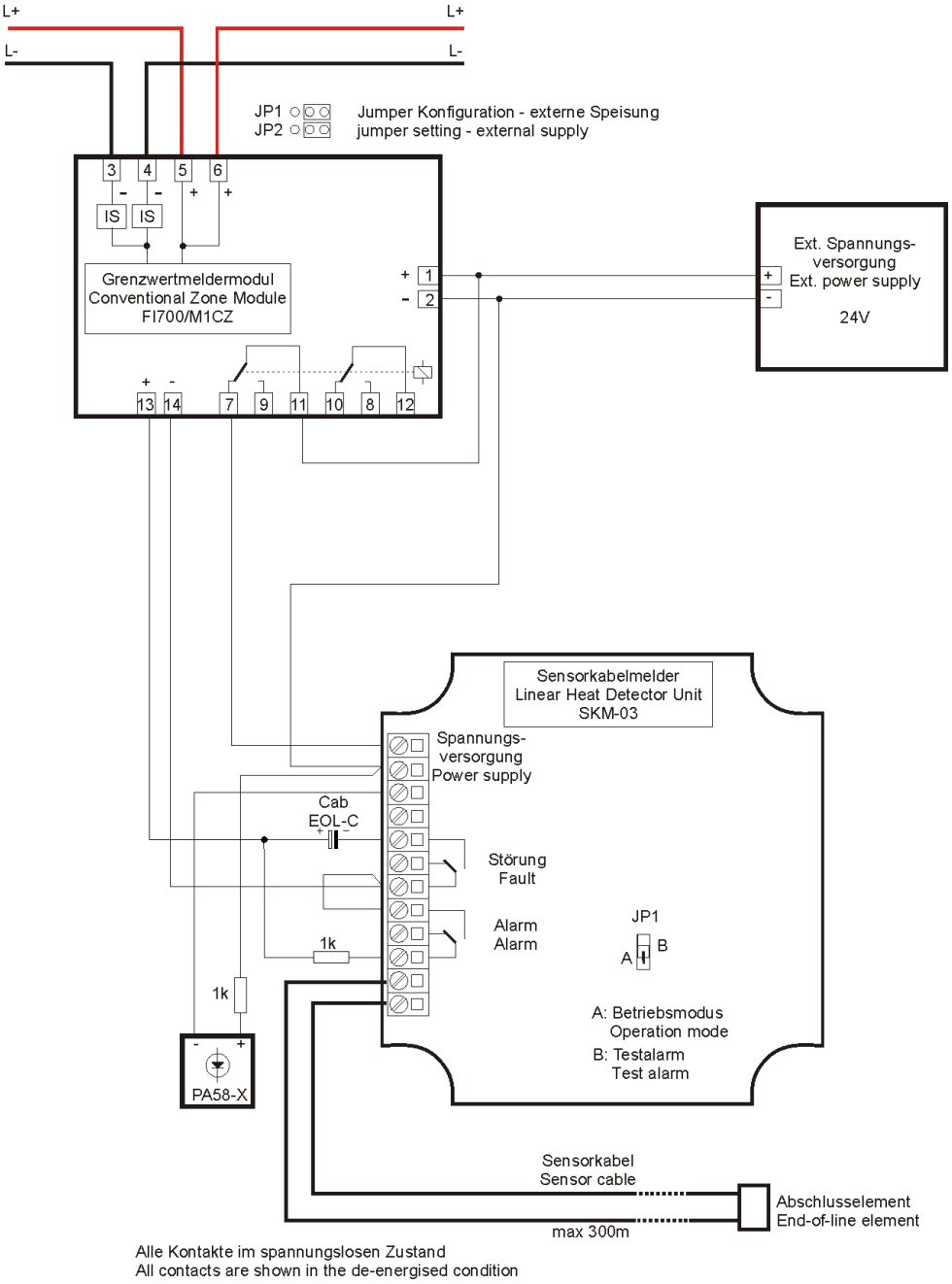
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.13 Linear Heat Detector LWM-1 - FI700/M1CZ



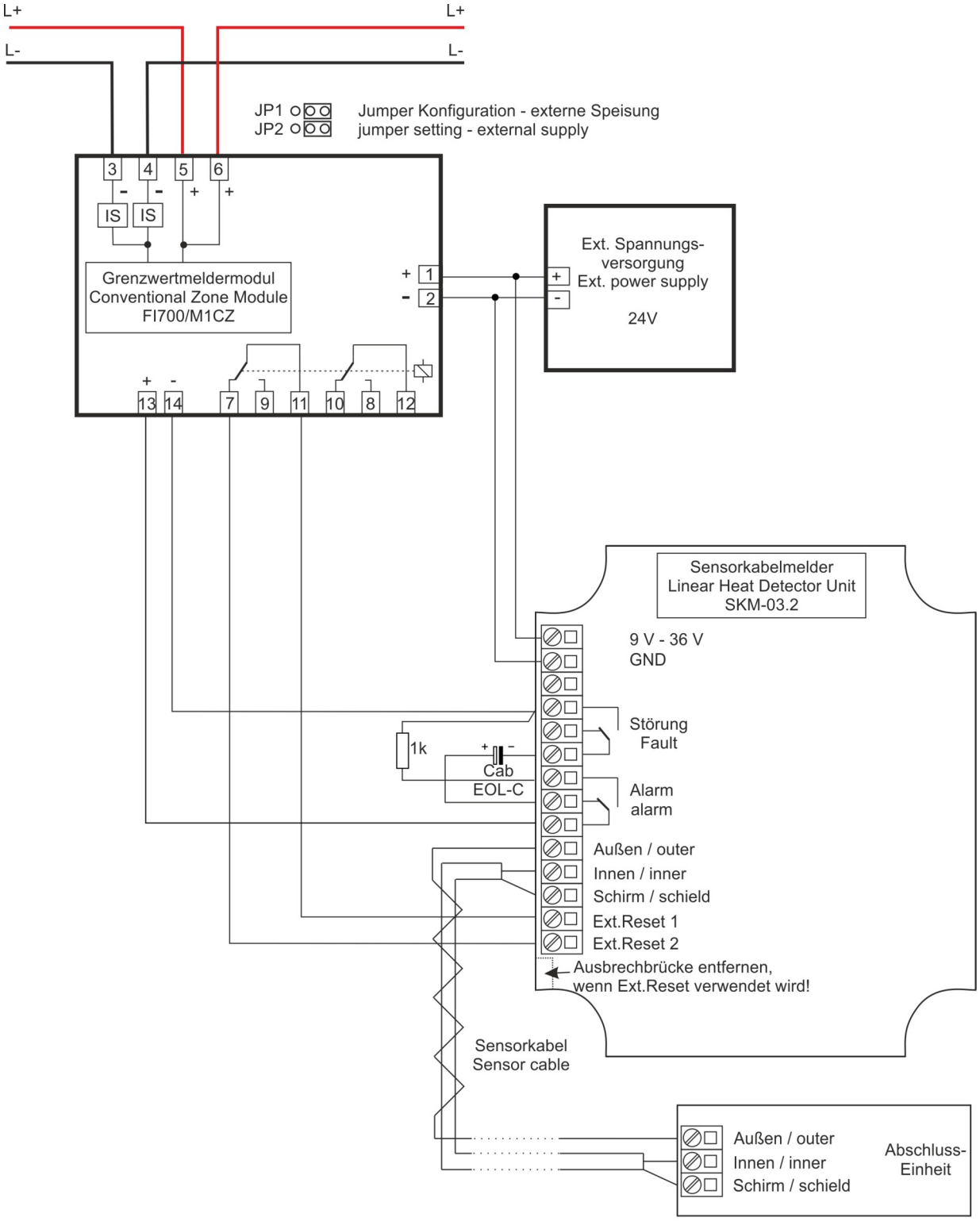
If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

3.8.14 Linear Heat Detector Unit SKM-03 - FI700/M1CZ



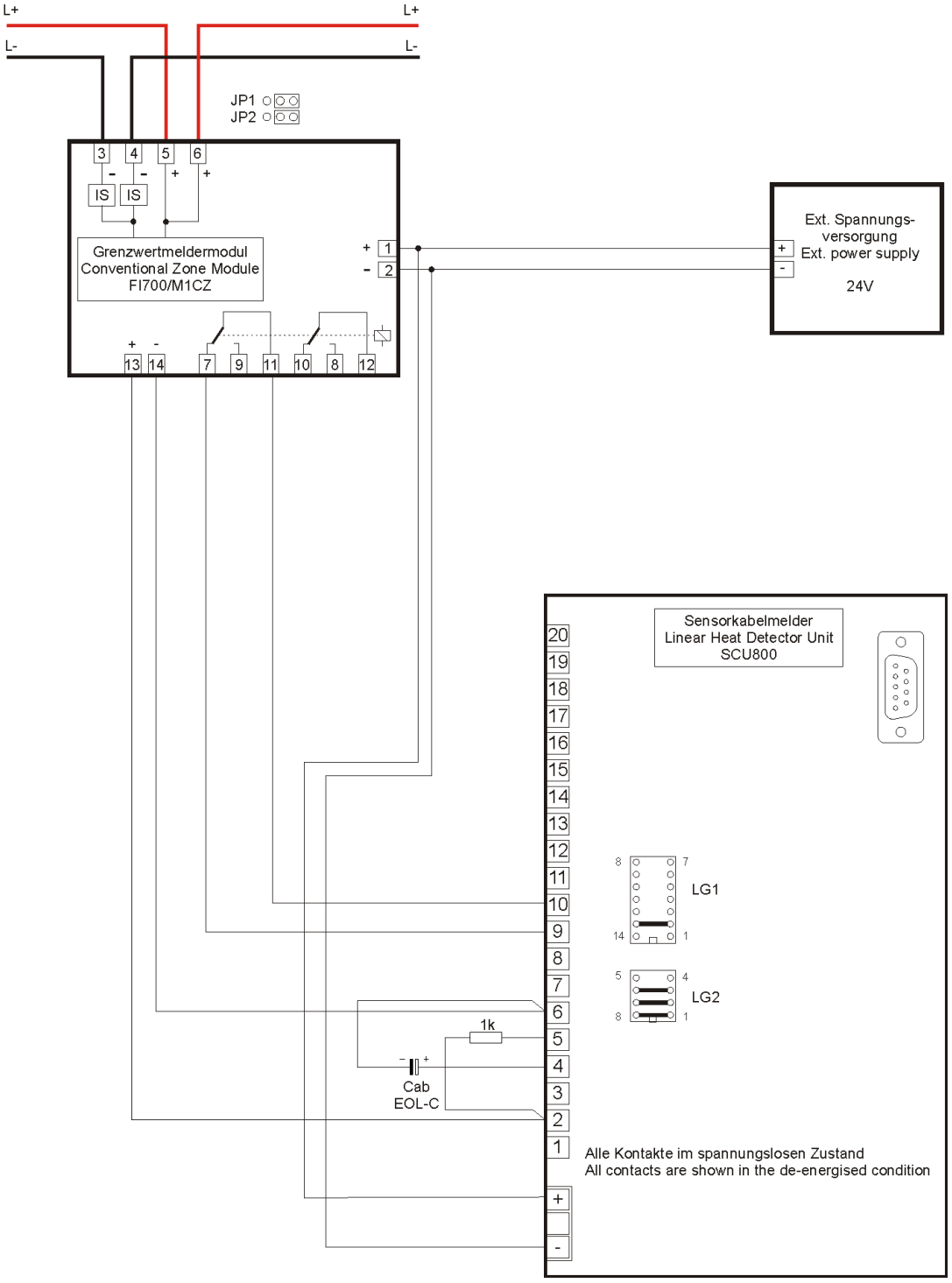
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.15 Linear Heat Detector SKM-03.2 - FI700/M1CZ



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

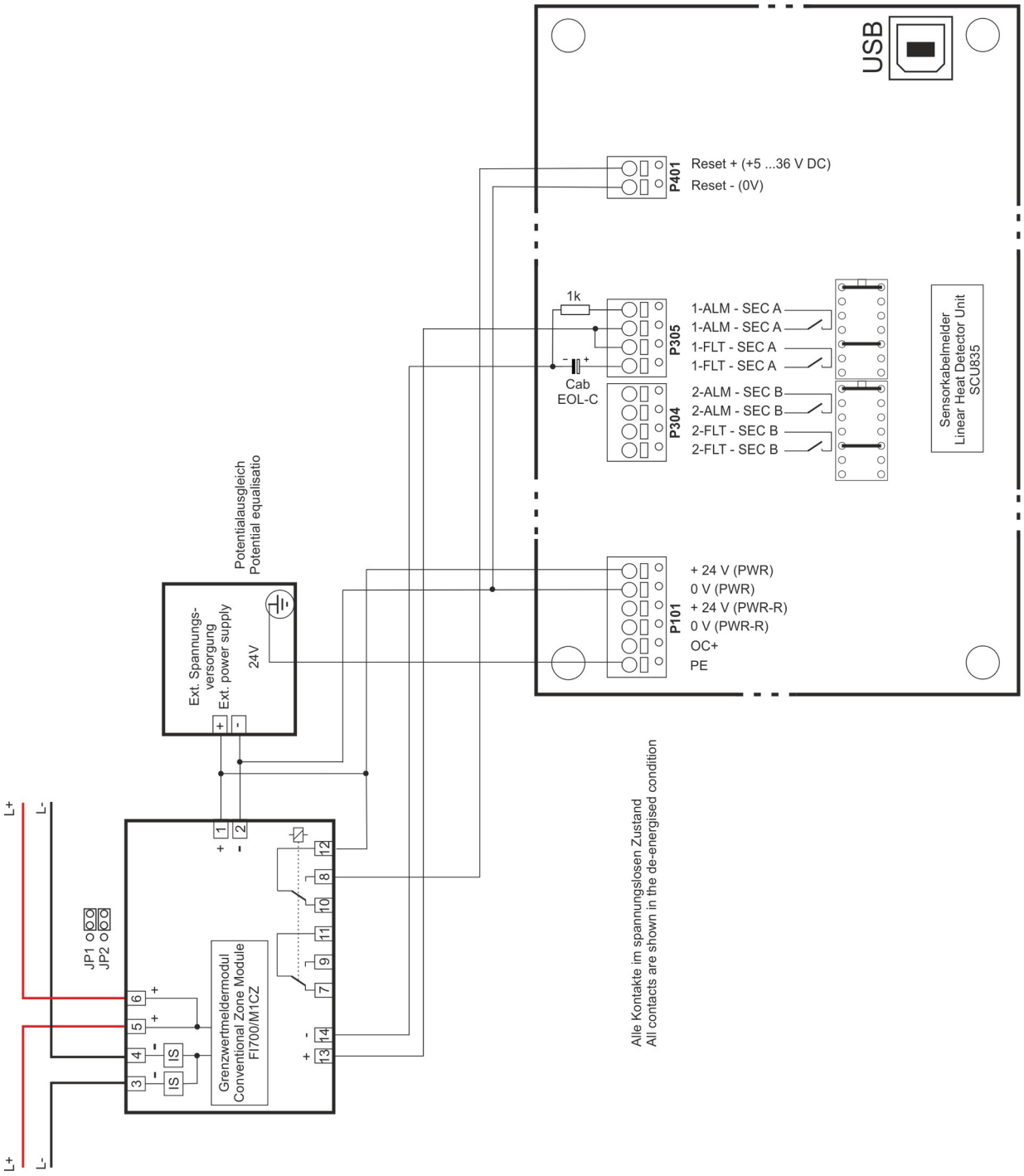
3.8.16 Linear Heat Detector SCU800 - FI700/M1CZ



For the resetting of the SCU800, jumpers must be attached to the pin connector BR2. The product is delivered with jumpers attached between 2-3 and 4-5. The jumpers must be attached between the following pins: 1-2; 3-4; 5-6.

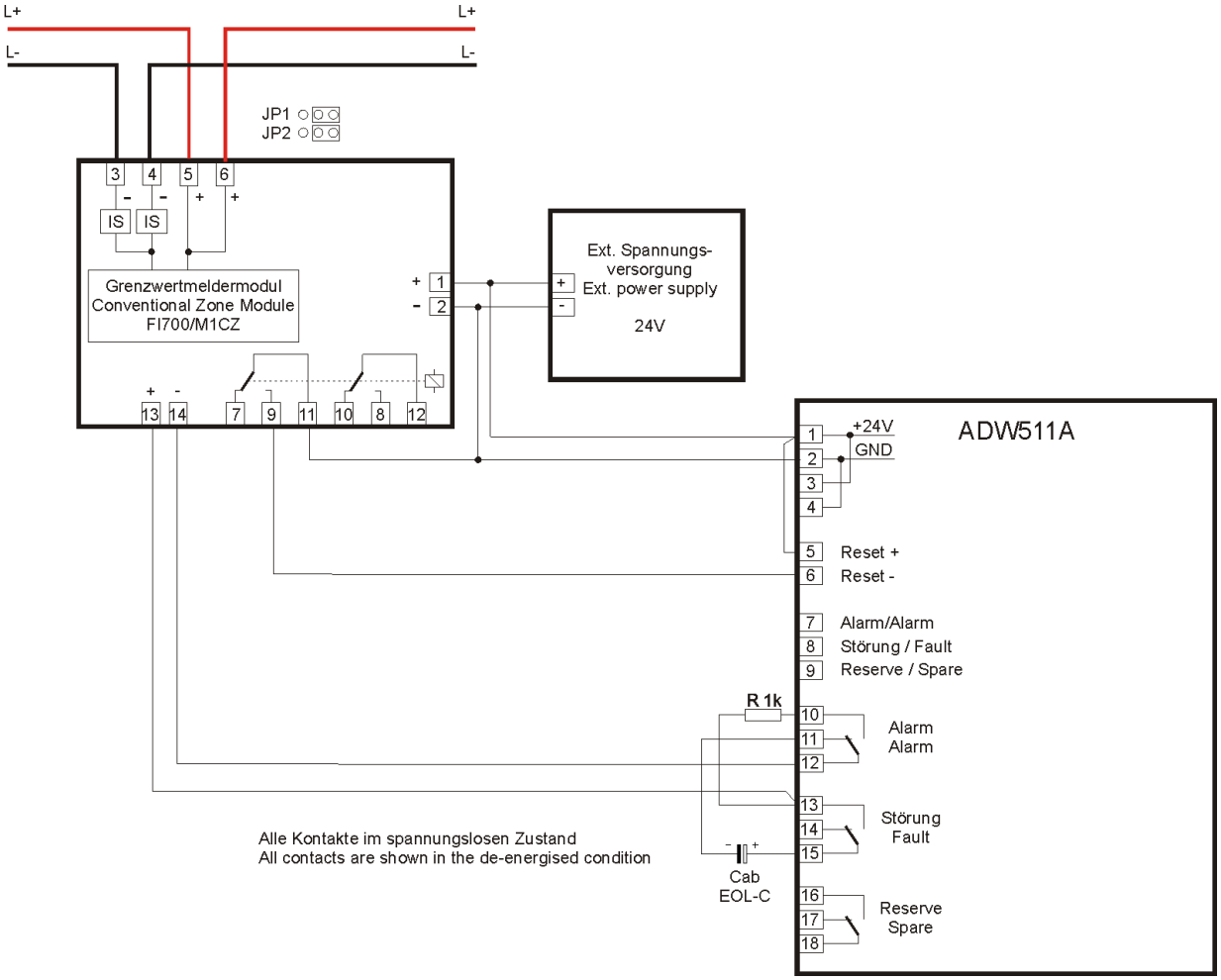
If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

3.8.17 Linear Heat Detector SCU835 - FI700/M1CZ



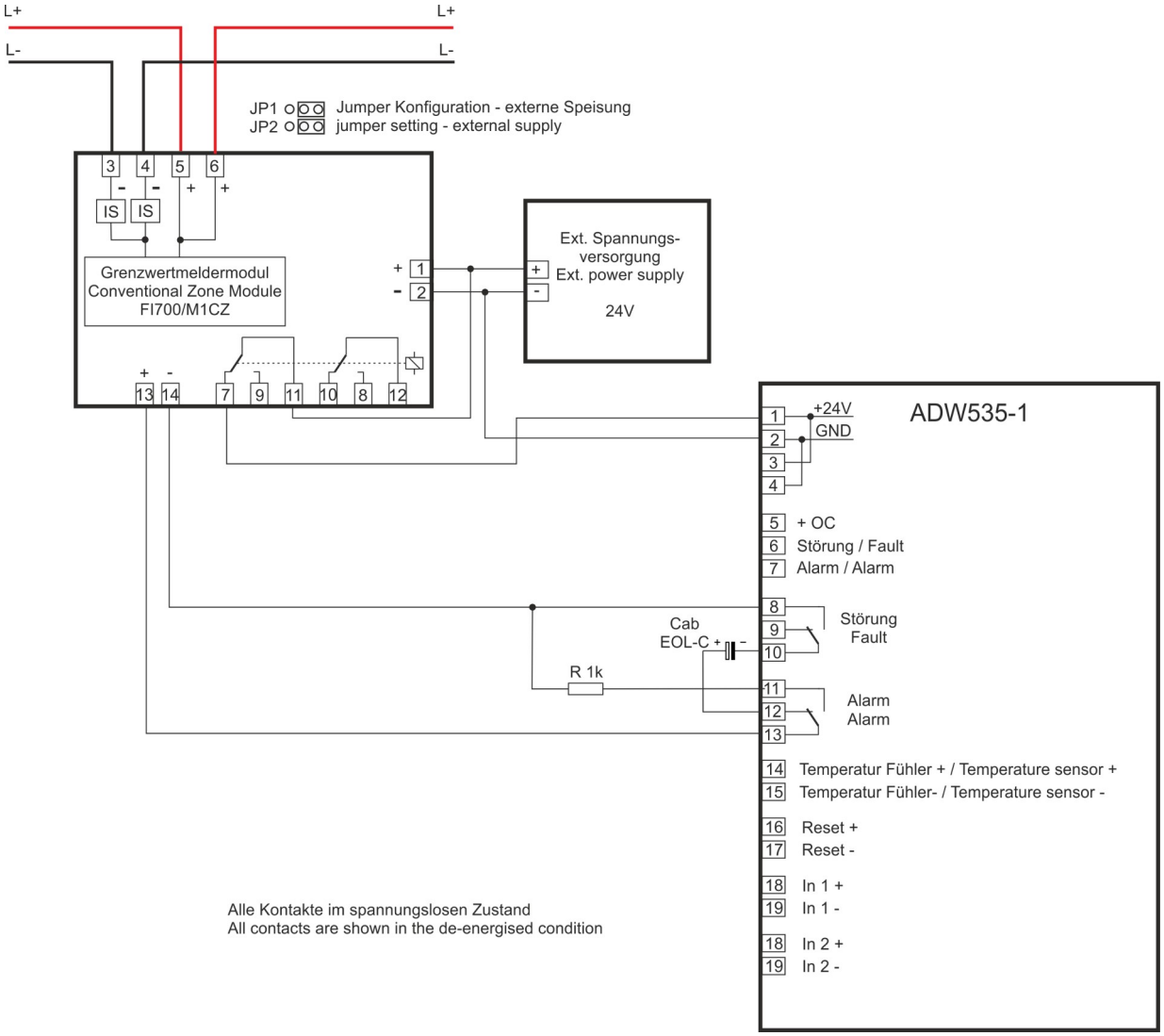
If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

3.8.18 Linear Heat Detector Unit ADW511A - FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

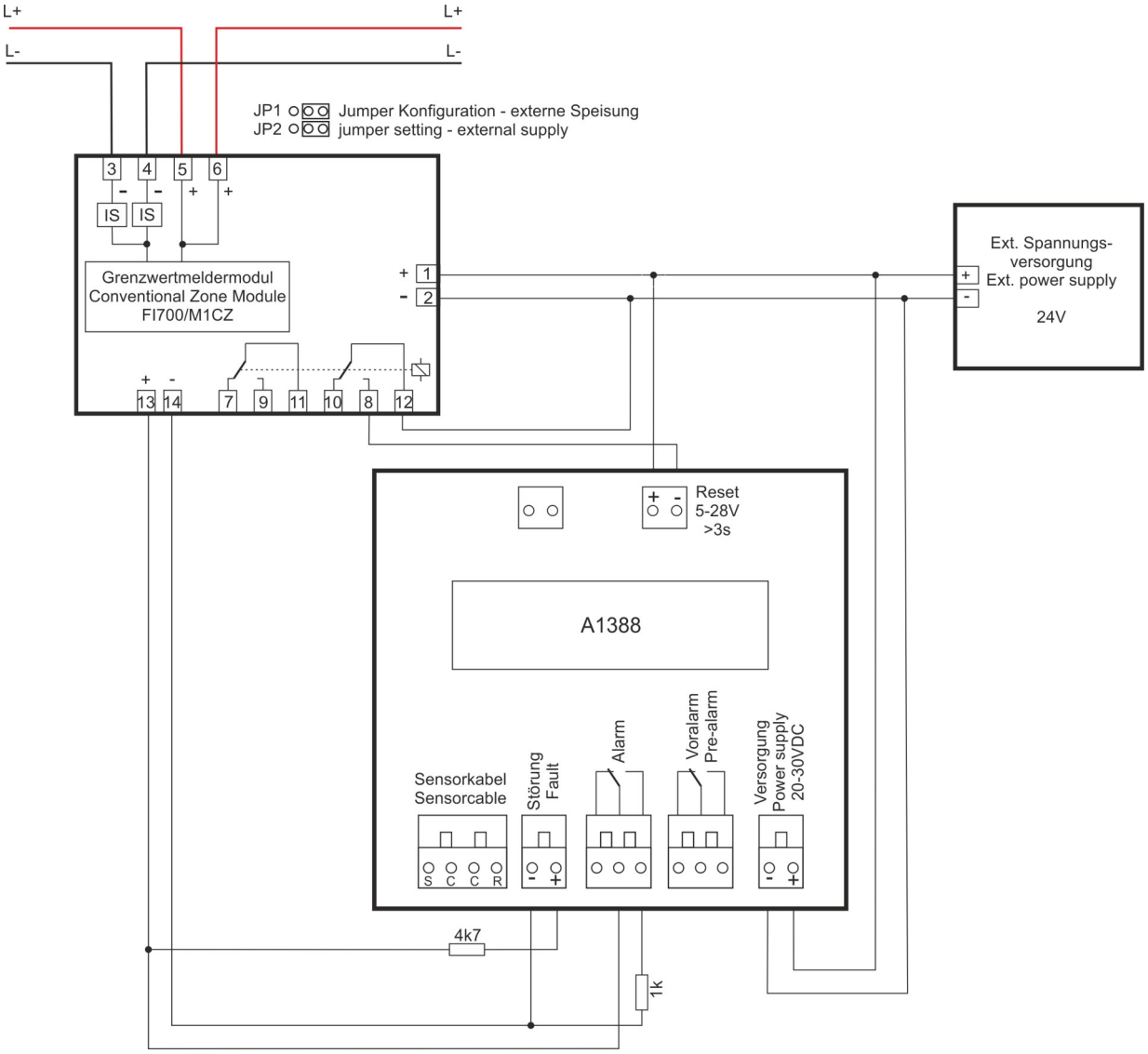
3.8.19 Linear Heat Detector Unit ADW535 - FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

The ADW535-2 differs from the ADW535-1 in that it has an additional printed circuit board (LEB35) for the signal forwarding (Alarm / Fault) of the second channel.

3.8.20 Linear Heat Detector Unit A1388 - FI700/M1CZ



Only one A1388 may be connected to the FI700/M1CZ. The end-of-line element must be a resistor. The polarity of the connections must be observed. The A1388 detector is reset by an impulse at the reset input of the A1388. Thus, the output of the FI700/M1CZ module must be defined with the behaviour **Pulsed signal**.

If the output behaviour is set to **Continuous signal**, it may happen that the enablement is not successful and is only carried out successfully during the second enablement process. This circumstance occurs if an alarm was detected by the A1388 during its disablement state.

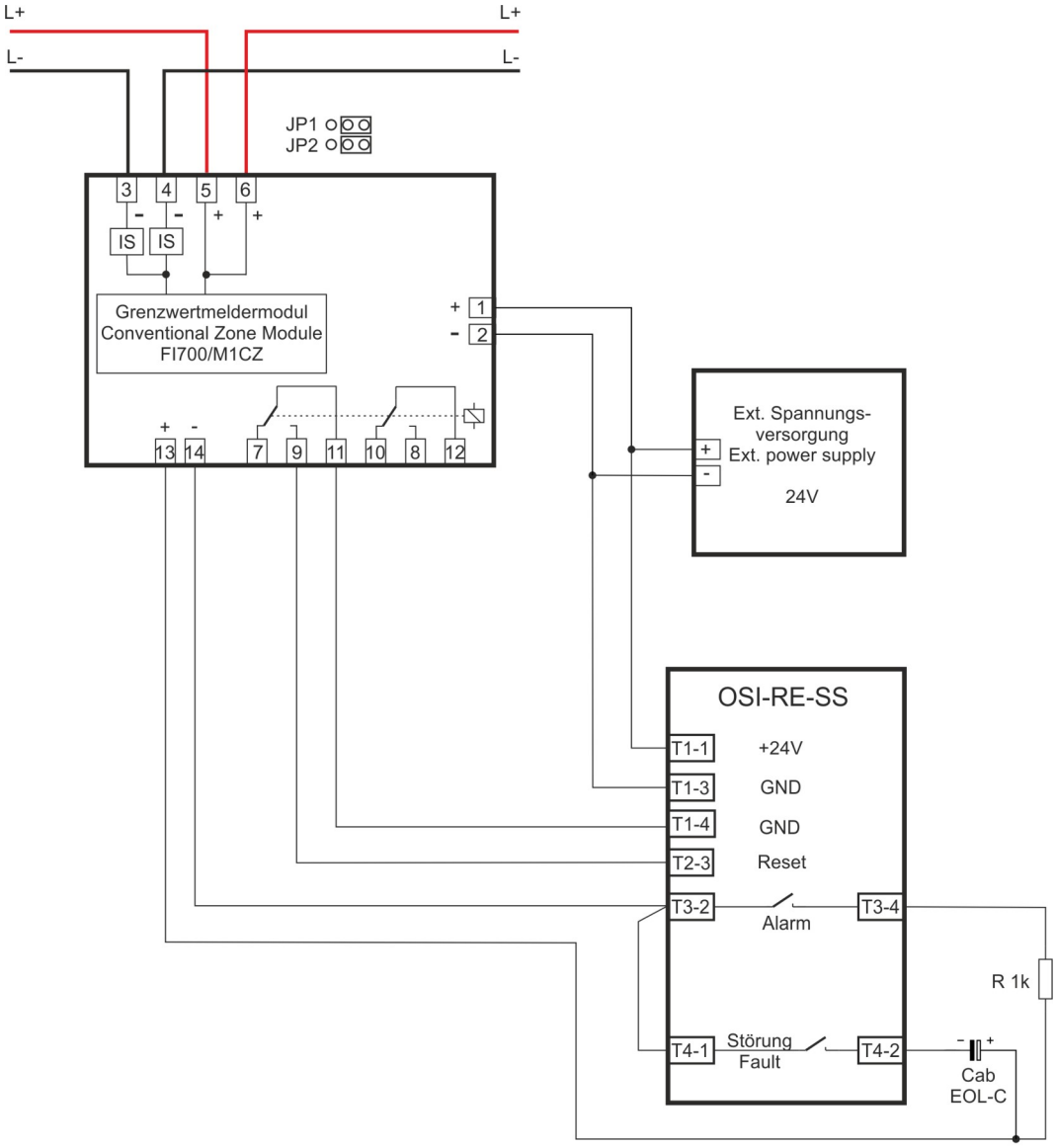
The wiring of the sensor cable can be found in the product supplement.

For the operation of the linear heat detector A1388 on Control Panels Series BC600, a firmware after week 47 / 2020 must be used. If an older firmware is used, a fire alarm may be triggered when the loop module FI700/M1CZ is switched on, even though the A1388 is already in the idle state.

On the BC216 the output of the FI700/M1CZ must be set to Continuous signal. Mind the above-mentioned behaviour that may occur if Continuous signal is set.

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

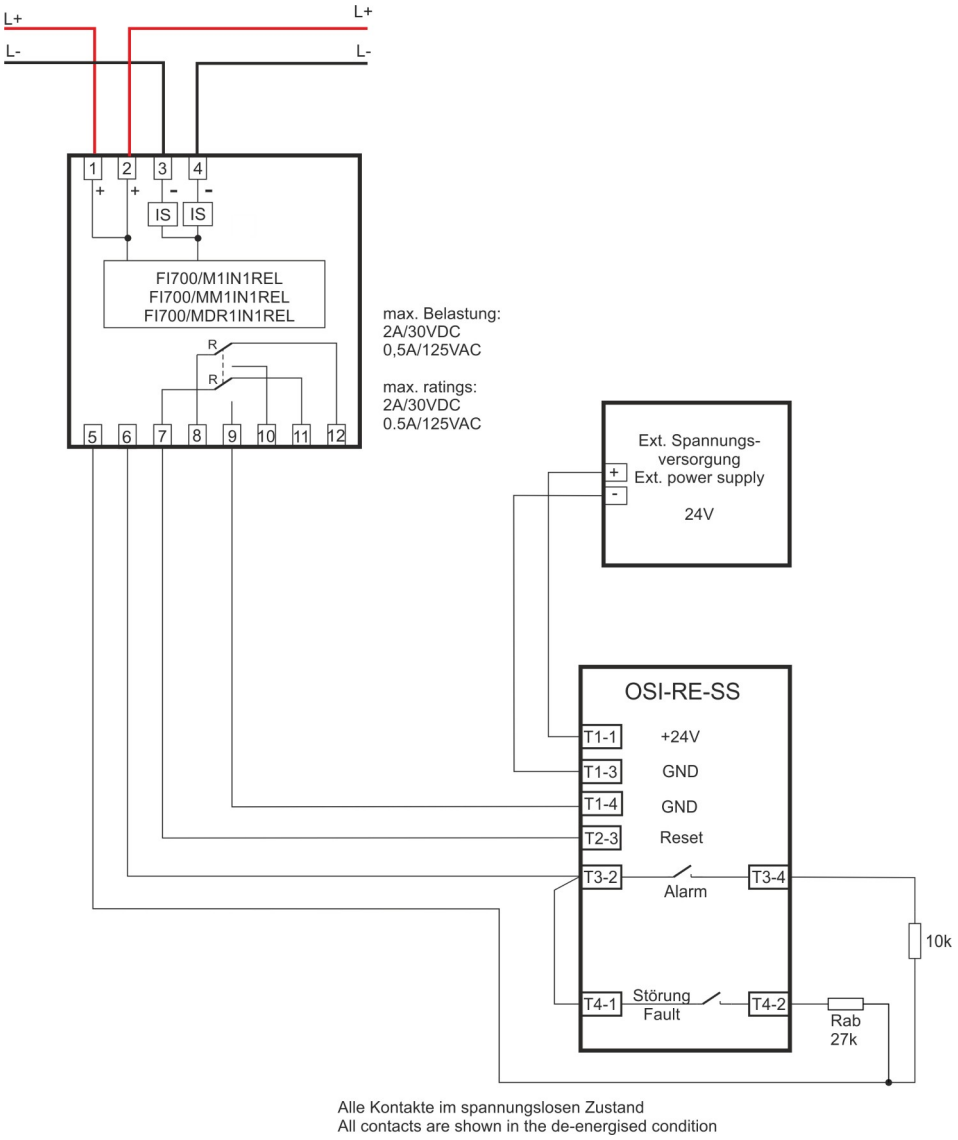
3.8.21 Beam Smoke Detector OSI-RE-SS - FI700/M1CZ



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

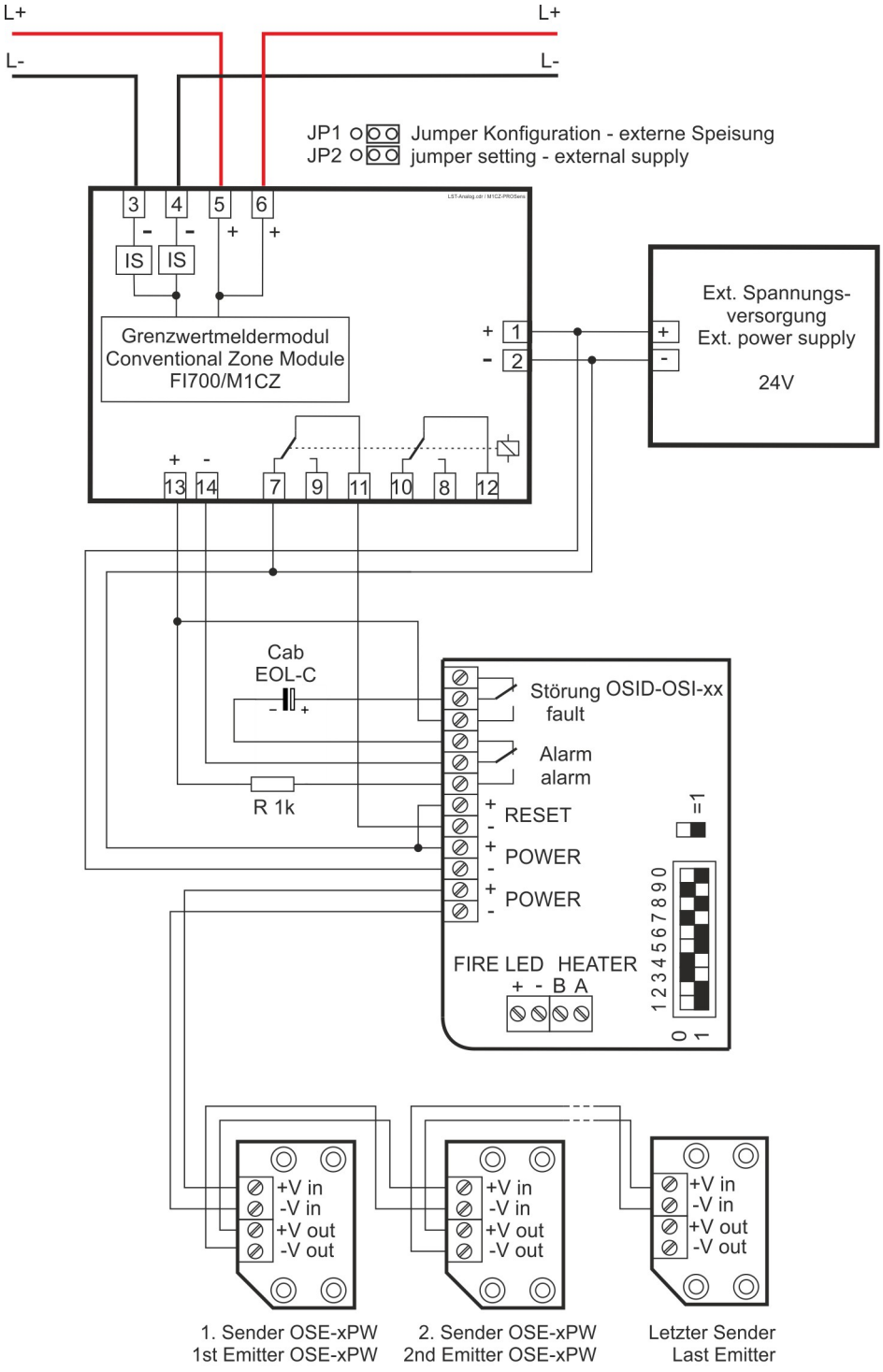
3.8.22 Beam Smoke Detector OSI-RE-SS – FI700/M1IN1REL



If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

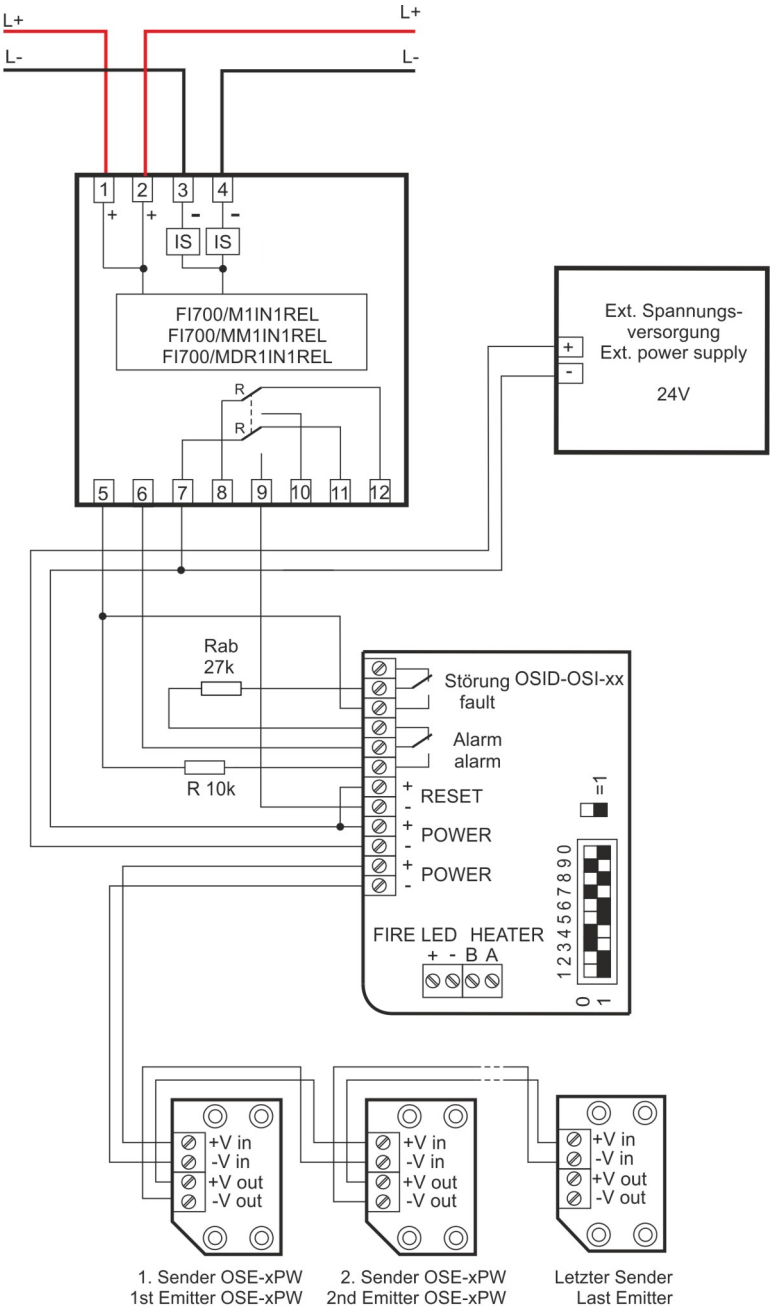
This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.23 Beam Smoke Detector OSID - FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

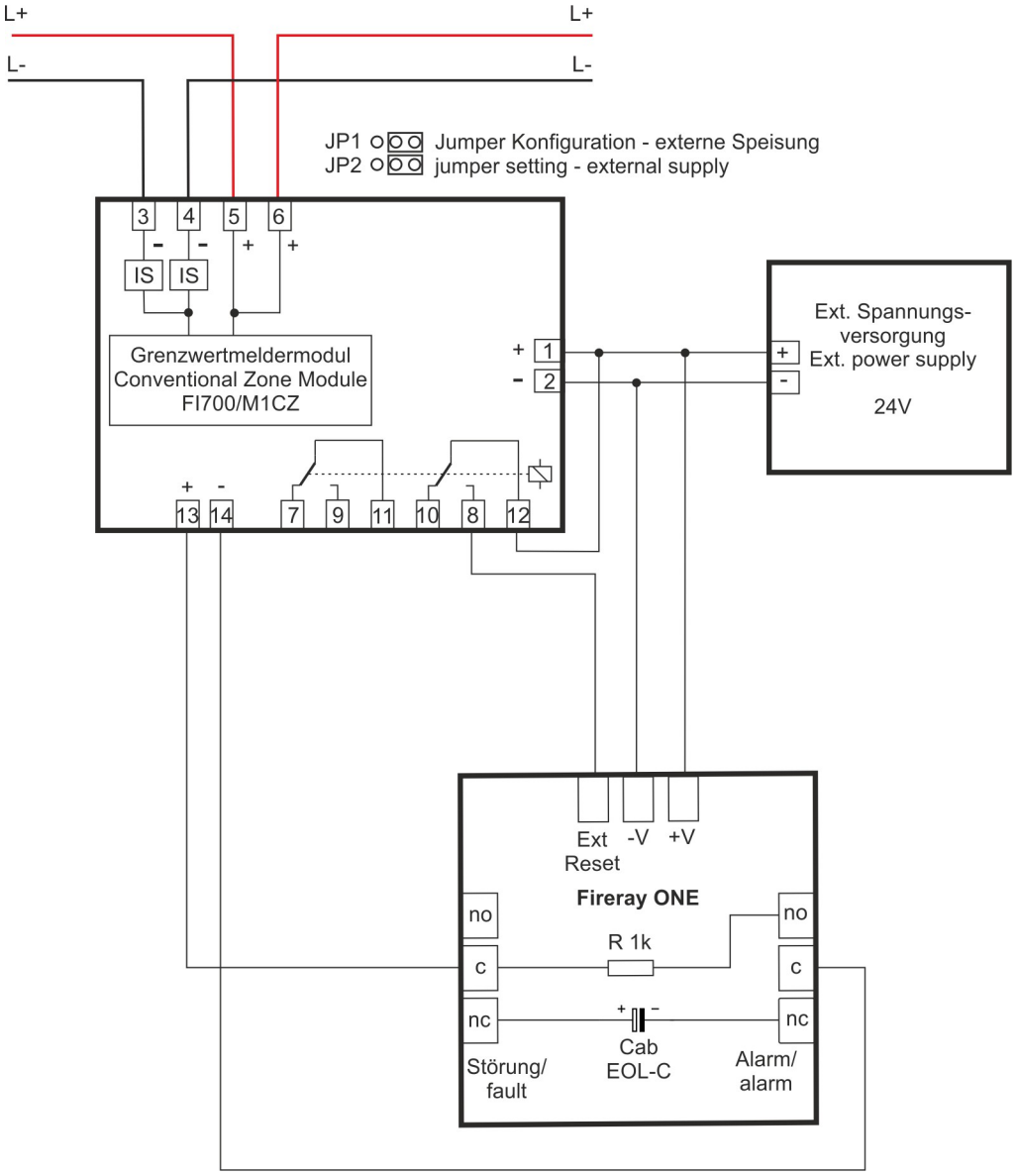
3.8.24 Beam Smoke Detector OSID - FI700/M1IN1REL



If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

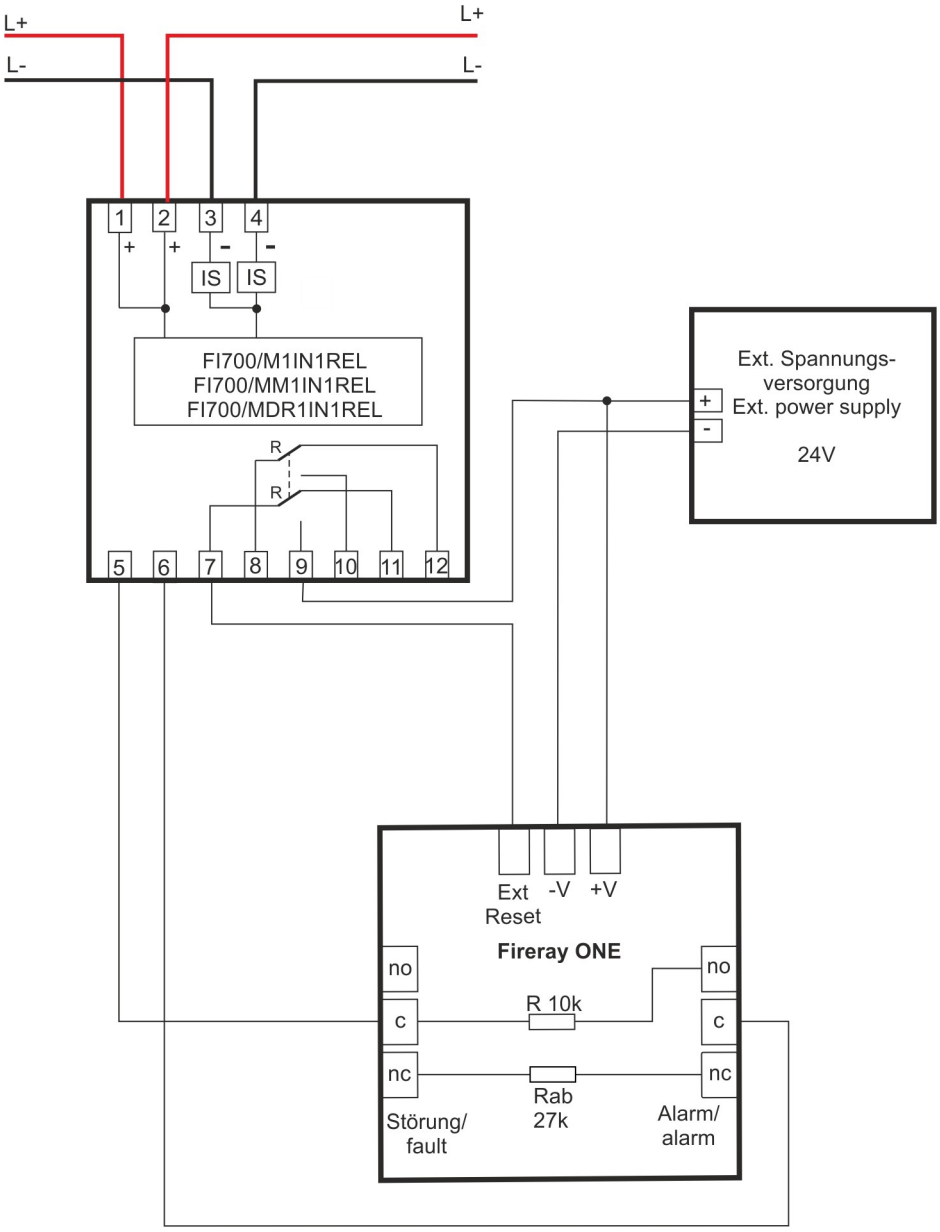
This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.25 Beam Smoke Detector Fireray ONE - FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

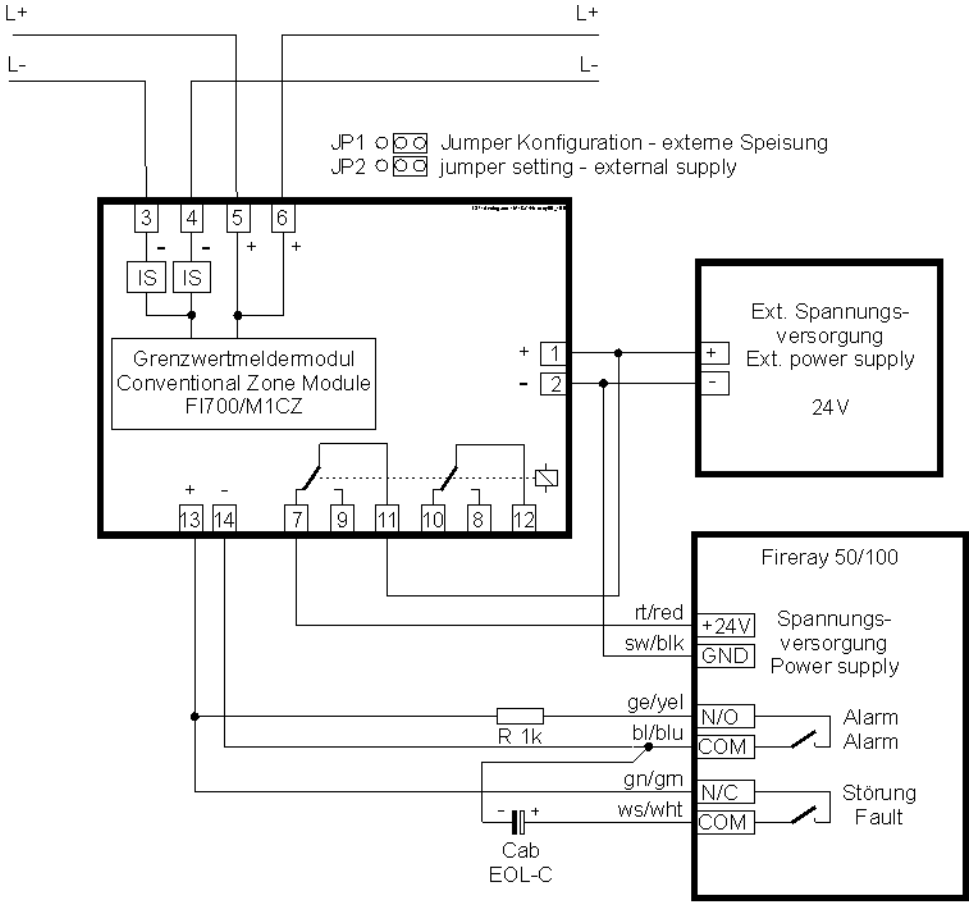
3.8.26 Beam Smoke Detector Fireray ONE – FI700/M1IN1REL



If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.27 Beam Smoke Detector FR50/100 - FI700/M1CZ

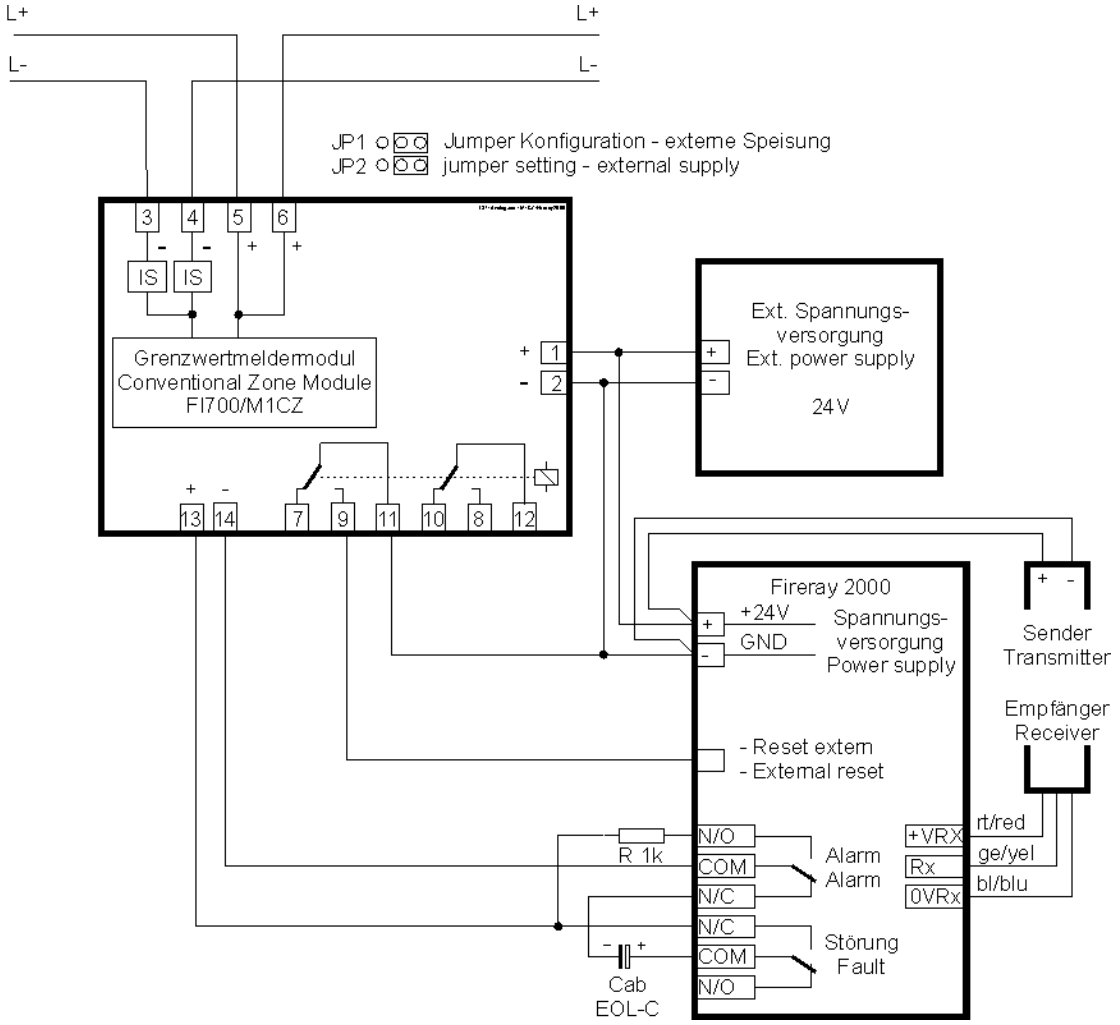


Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

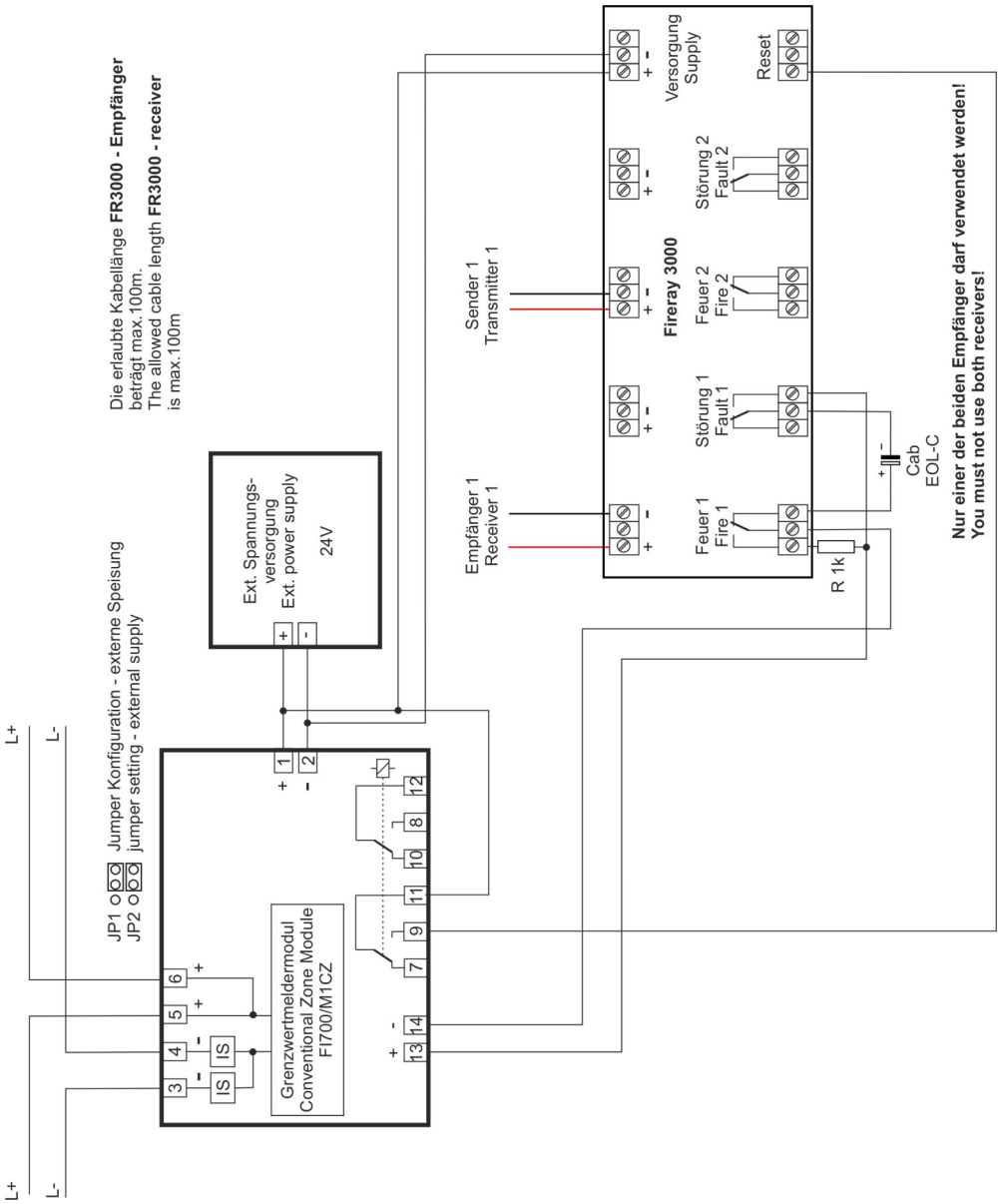
3.8.28 Beam Smoke Detector FR2000 - FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

3.8.29 Beam Smoke Detector FR3000 - FI700/M1CZ



After the supply voltage is applied to the detector, the fault relay will still be de-energised for 8s. Therefore, the fire detection control panel may show a temporary fault message after enabling the conventional zone module, after panel reset or after a power-on. Please note that the receivers/transmitters 1 and 2 are evaluated via the same zone. For this reason only the receiver/transmitter 1 can be used in this connection combination.

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

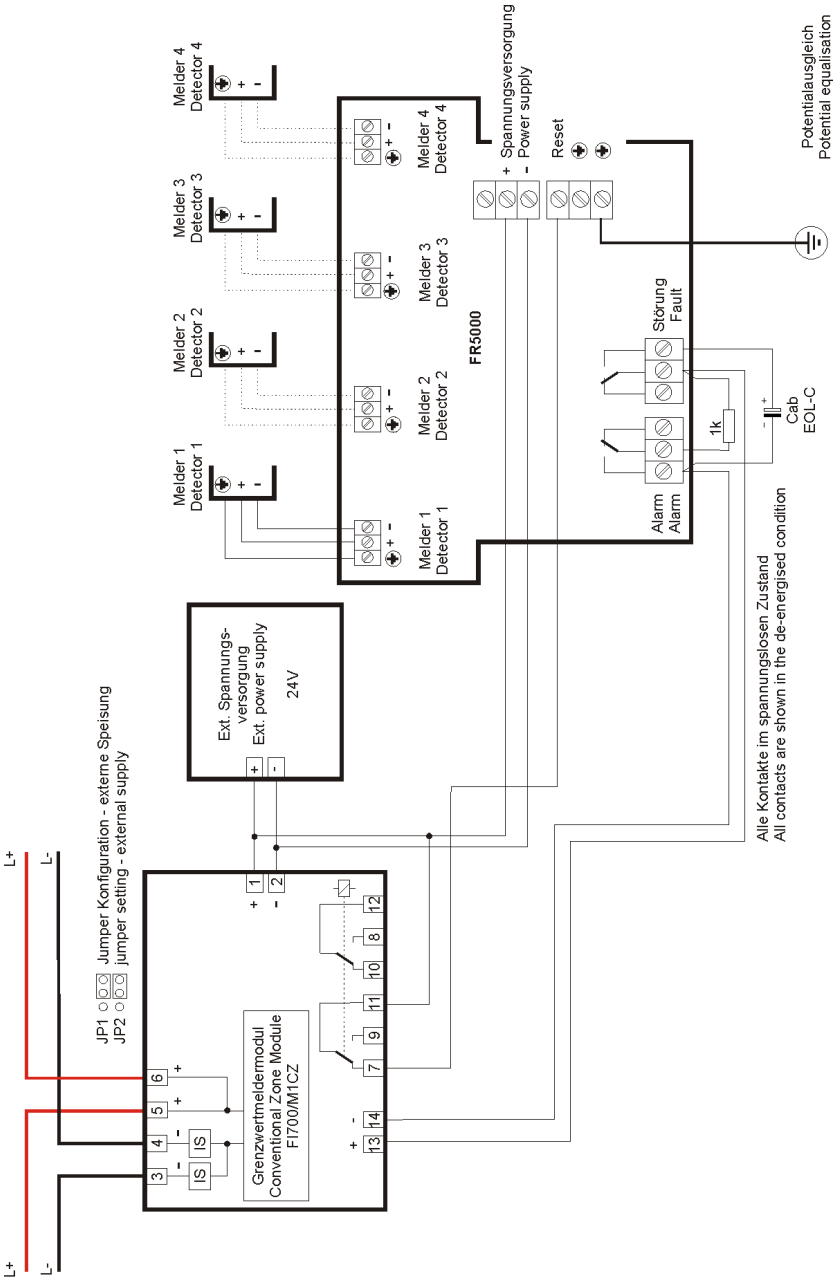
3.8.30 Beam Smoke Detector FR5000 - FI700/M1CZ

There are two versions of the Beam Smoke Detector FR5000. The old version allows you to connect 4 detectors, and the new version has 2 detector lines with separate alarm relays.

Distinguishing features

- Packaging: on the packaging of the new version of the FR5000 there is the note "Issue-11".
- Number of LEDs: the new version has 3 LEDs, the old version has 5 LEDs.

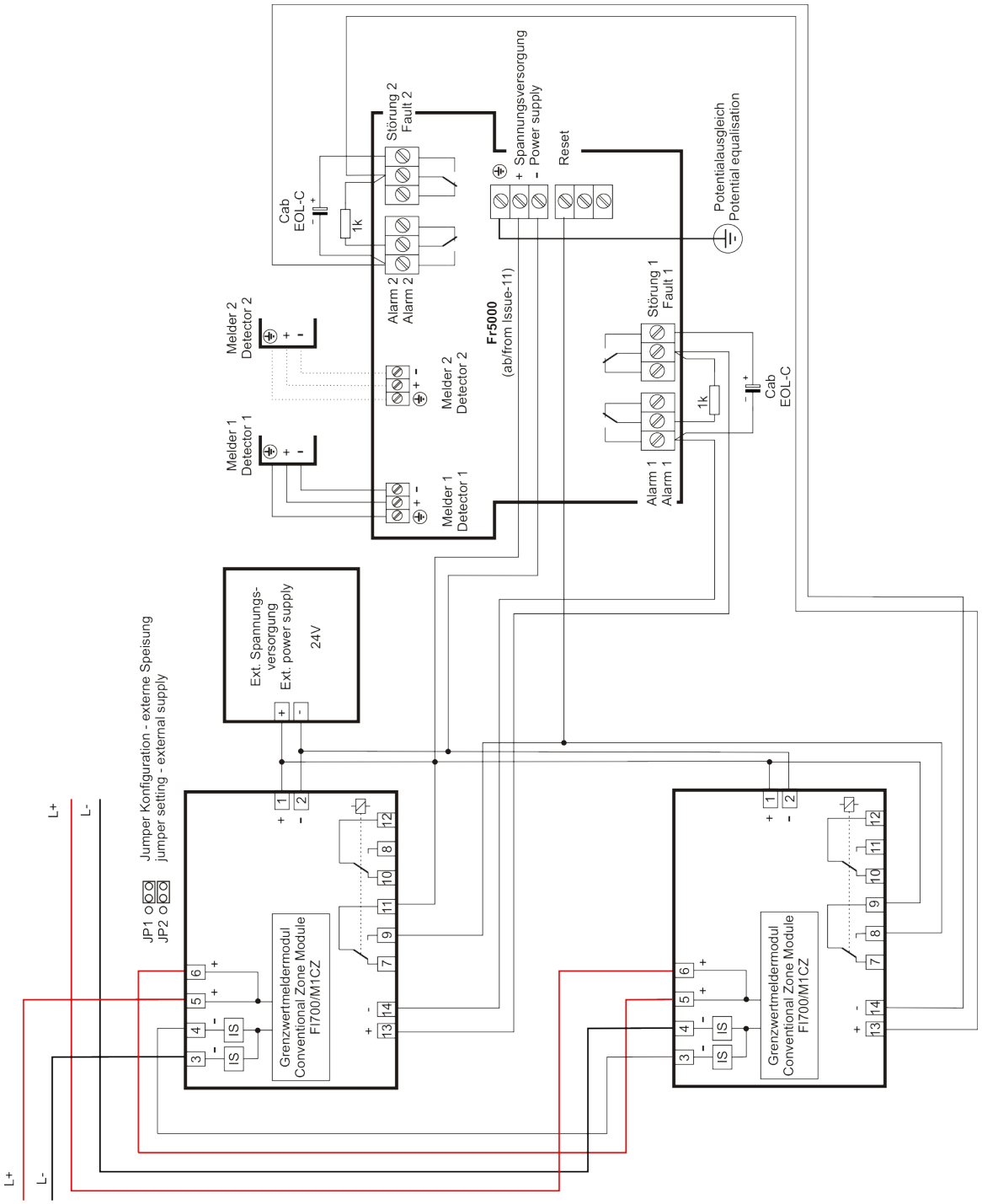
3.8.30.1 Old version



After the supply voltage is applied to the detector, the fault relay will still be de-energised for 8s. Therefore, the fire detection control panel may show a temporary fault message after enabling the conventional zone module, after panel reset or after a power-on. Please note that the detectors 1 through 4 are evaluated via the same zone.

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.30.2 Beam Smoke Detector FR5000 (Issue-11)

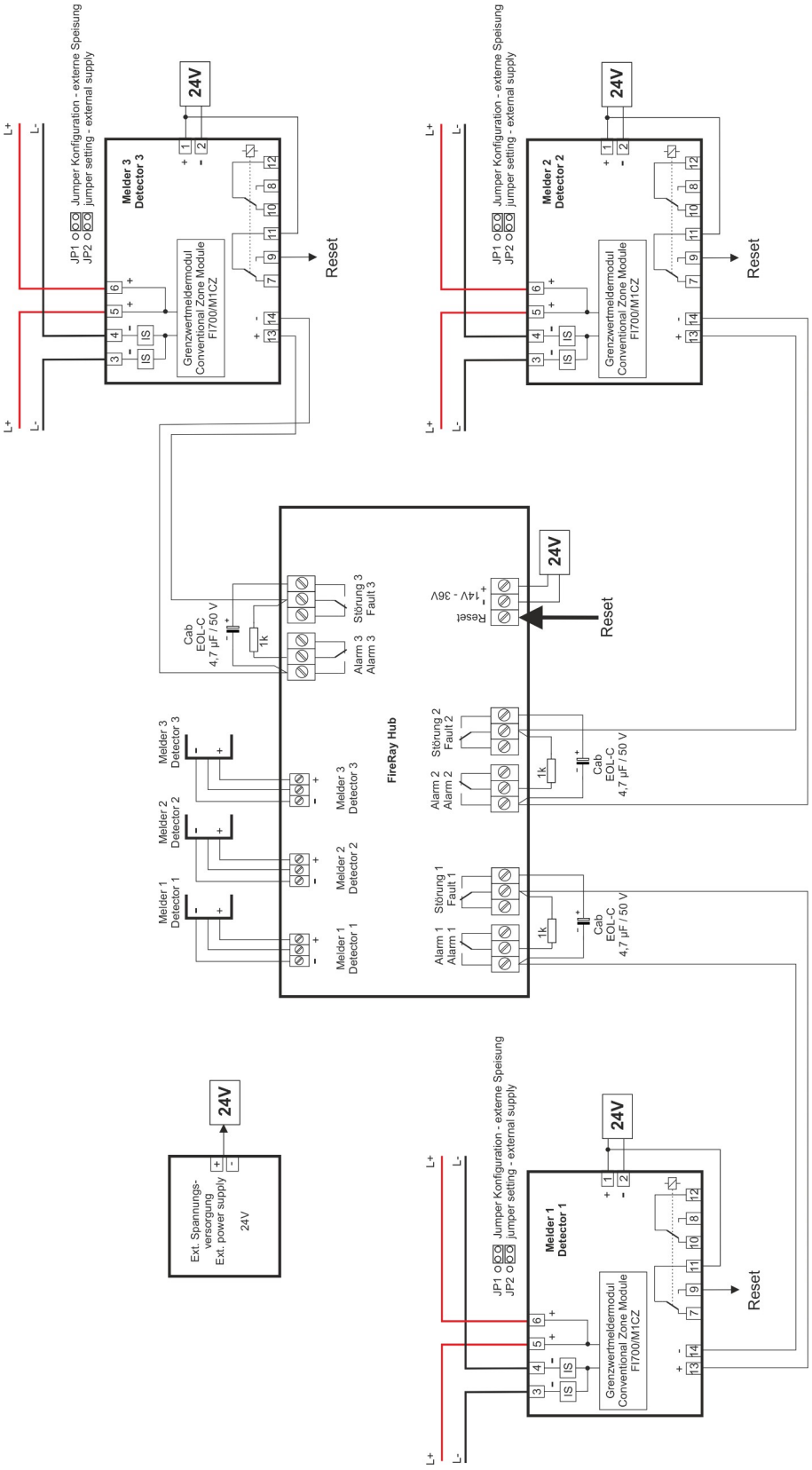


After the supply voltage is applied to the detector, the fault relay will still be de-energised for 8s. Therefore, the fire detection control panel may show a temporary fault message after enabling the conventional zone module, after panel reset or after a power-on.

For the operation of the beam smoke detector on Control Panels Series BC216/BC600, a firmware from calendar week 12 / 2013 or later is to be used. If an older firmware is used, the beam smoke detector will be deactivated if one of the two modules is disabled!

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

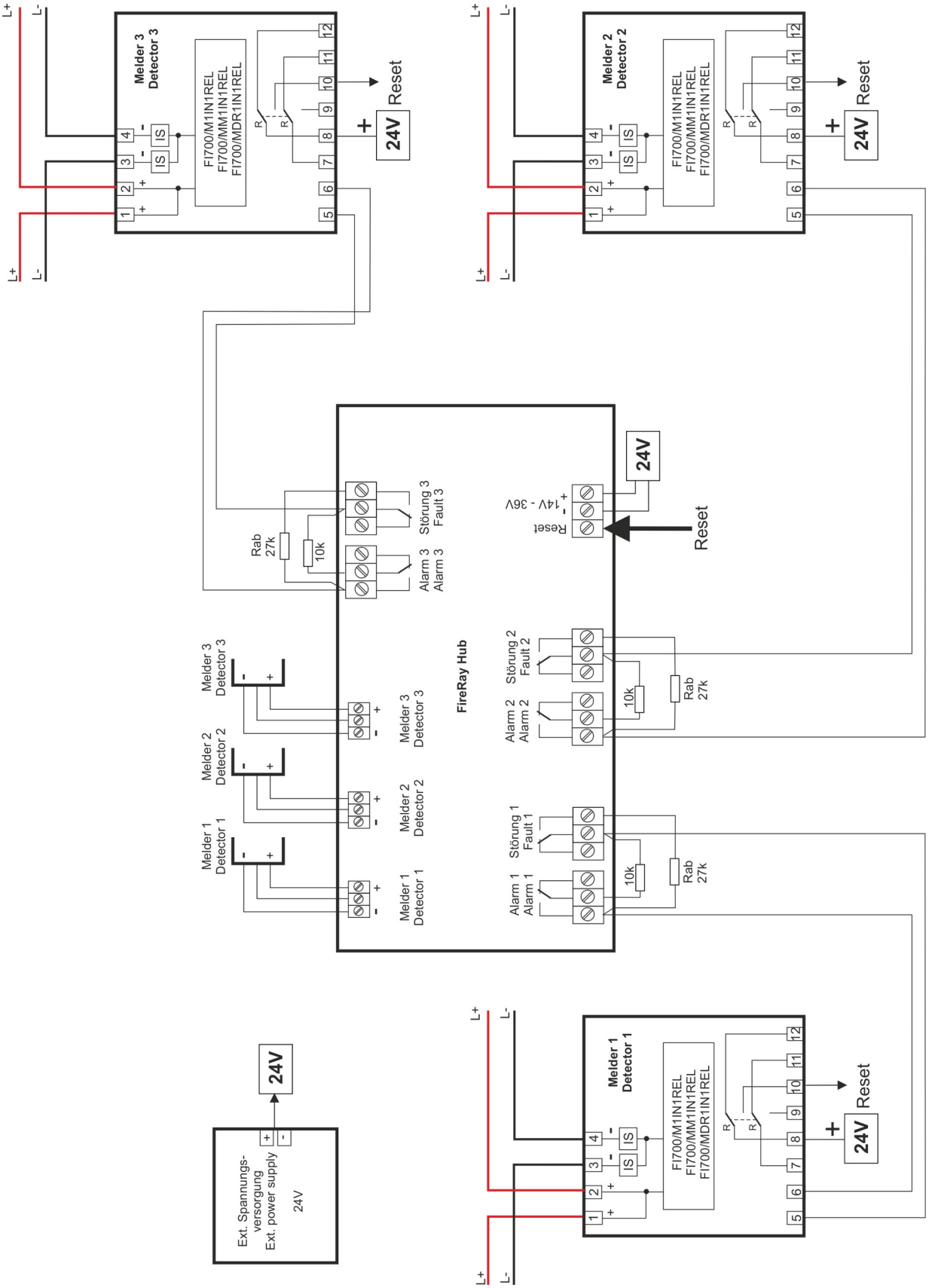
3.8.31 Beam Smoke Detector FireRay-Hub – FI700/M1CZ



For the operation of the beam smoke detector on Control Panels Series BC216/BC600, a firmware from calendar week 12 / 2013 or later is to be used. If an older firmware is used, the beam smoke detector will be deactivated if one of the two modules is disabled!

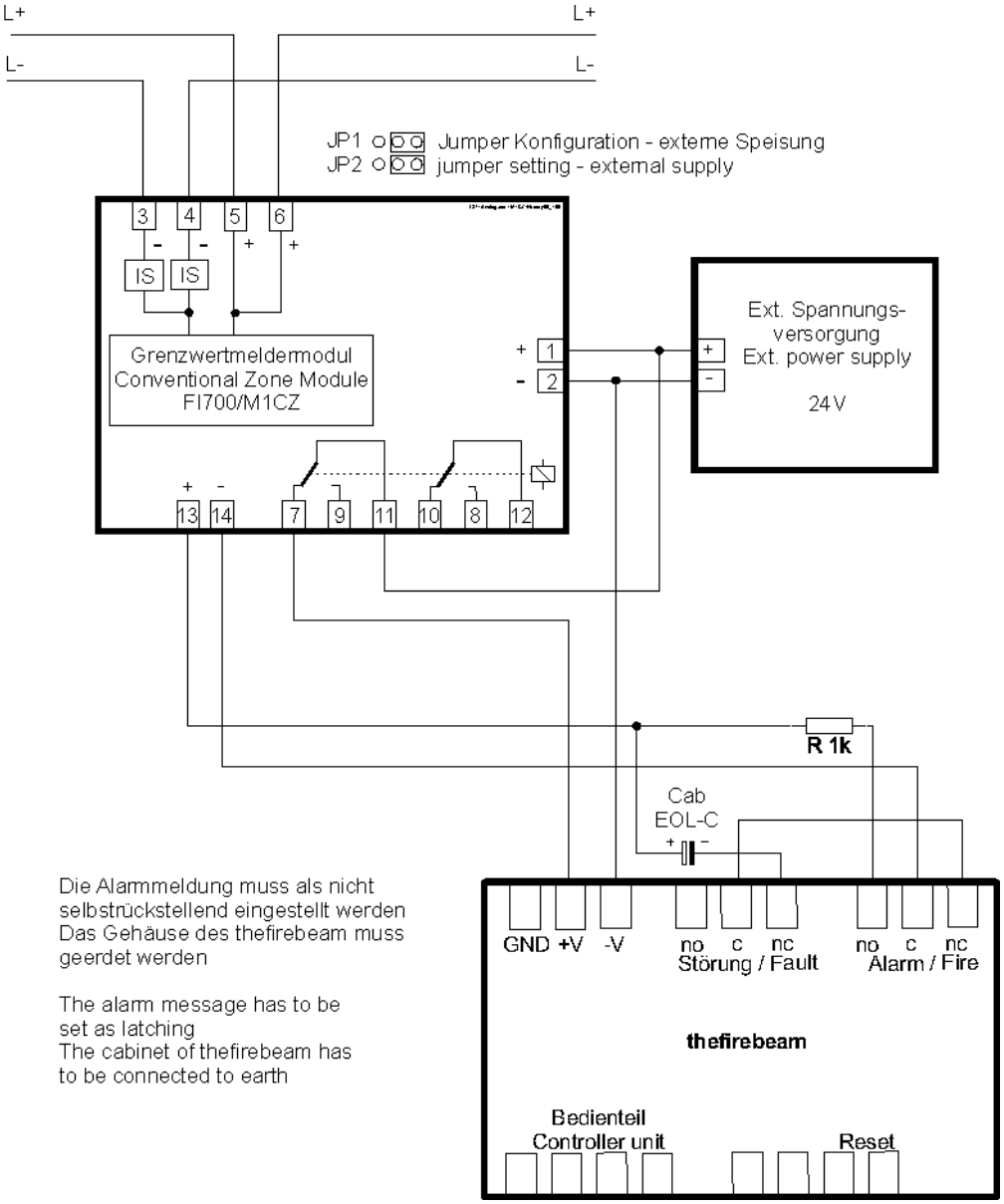
If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

3.8.32 Beam Smoke Detector FireRay-Hub – FI700/M1IN1REL



This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.33 Beam Smoke Detector thefirebeam plus - FI700/M1CZ



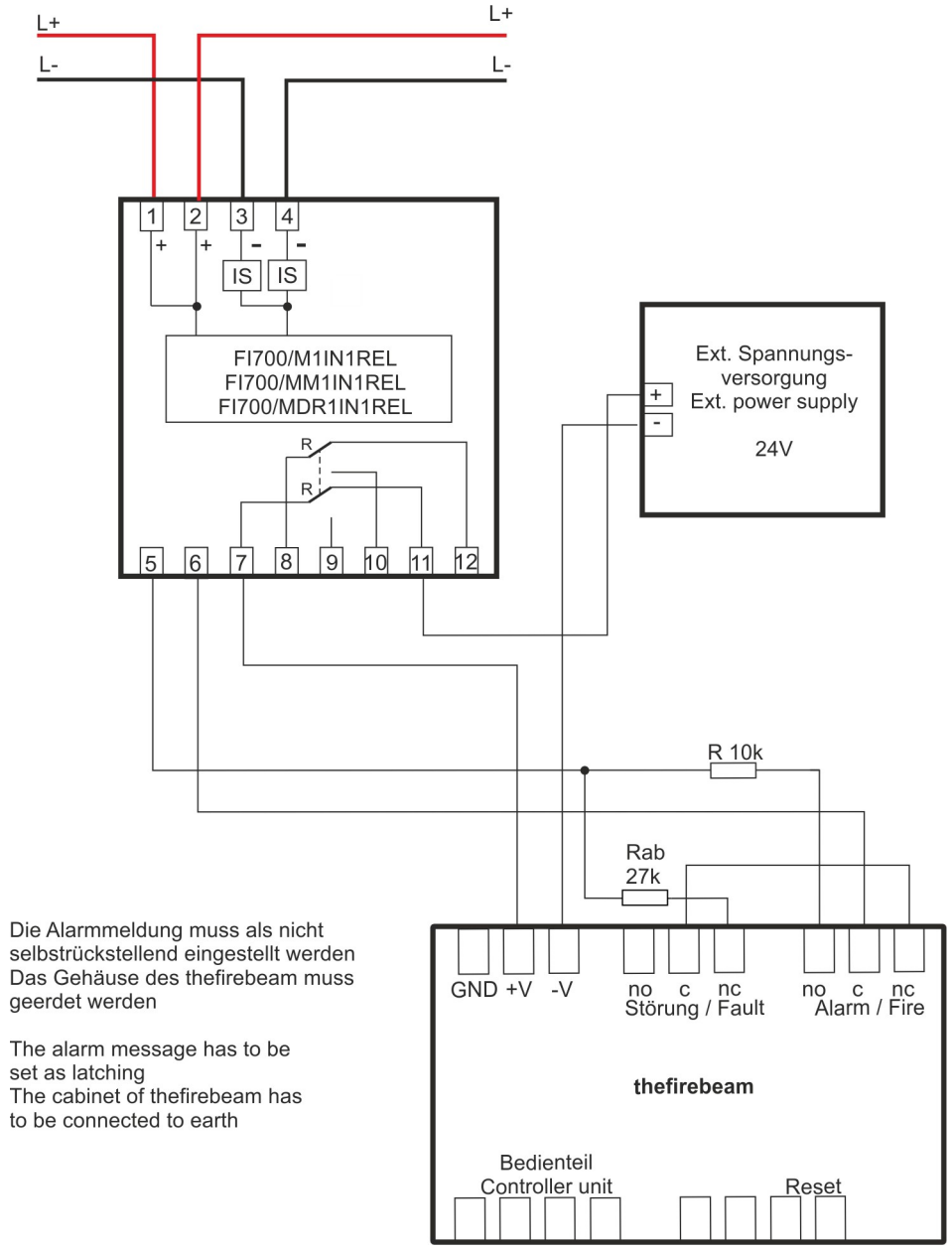
Die Alarmmeldung muss als nicht selbstrückstellend eingestellt werden
Das Gehäuse des thefirebeam muss geerdet werden

The alarm message has to be set as latching
The cabinet of thefirebeam has to be connected to earth

After the supply voltage is applied to the detector, the fault relay will still be de-energised for 8s. Therefore, the fire detection control panel may show a temporary fault message after enabling the conventional zone module, after panel reset or after a power-on.

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.34 Beam Smoke Detector thefirebeam plus - FI700/M1IN1REL

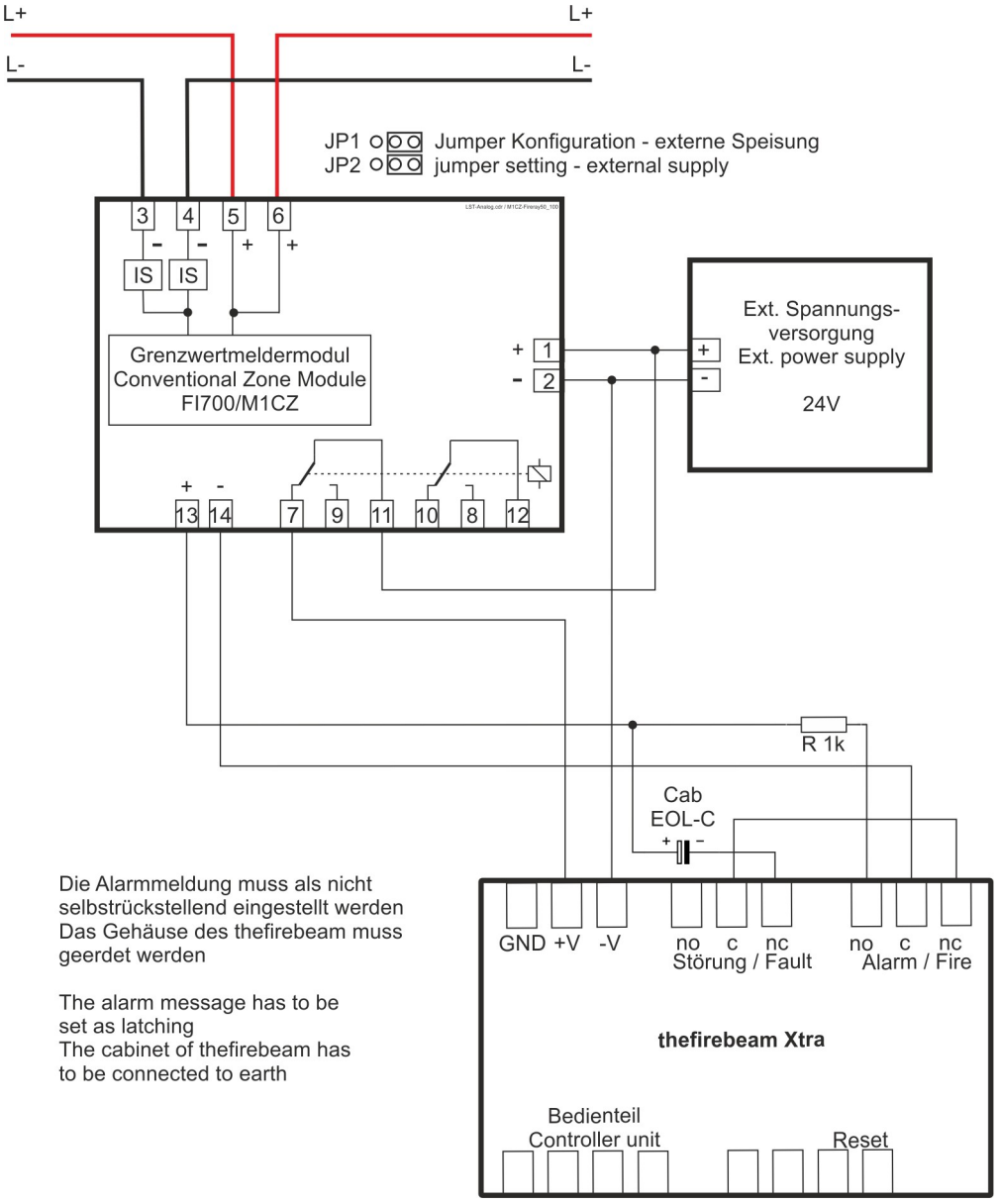


After applying the supply voltage to the detector, the fault relay will remain released for 8 seconds. Therefore, a brief fault can occur on the fire detection control panel after a control panel reset and after power ON.

If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

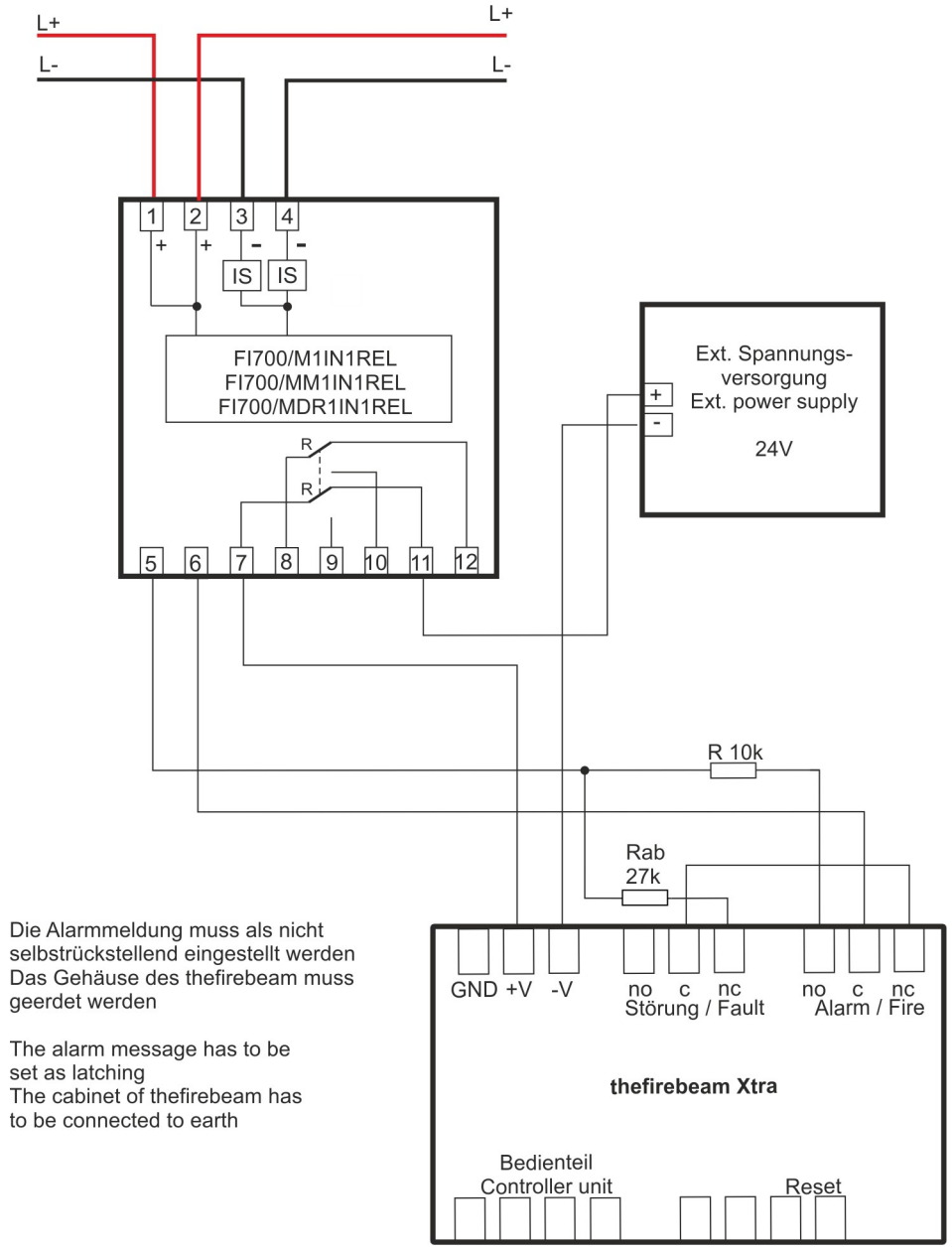
3.8.35 Beam Smoke Detector thefirebeam Xtra – FI700/M1CZ



After applying the supply voltage to the detector, the fault relay will remain released for 8 seconds. Therefore, a brief fault can occur on the fire detection control panel after the enablement of the conventional zone module, after a control panel reset and after power ON.

If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

3.8.36 Beam Smoke Detector thefirebeam Xtra – FI700/M1IN1REL

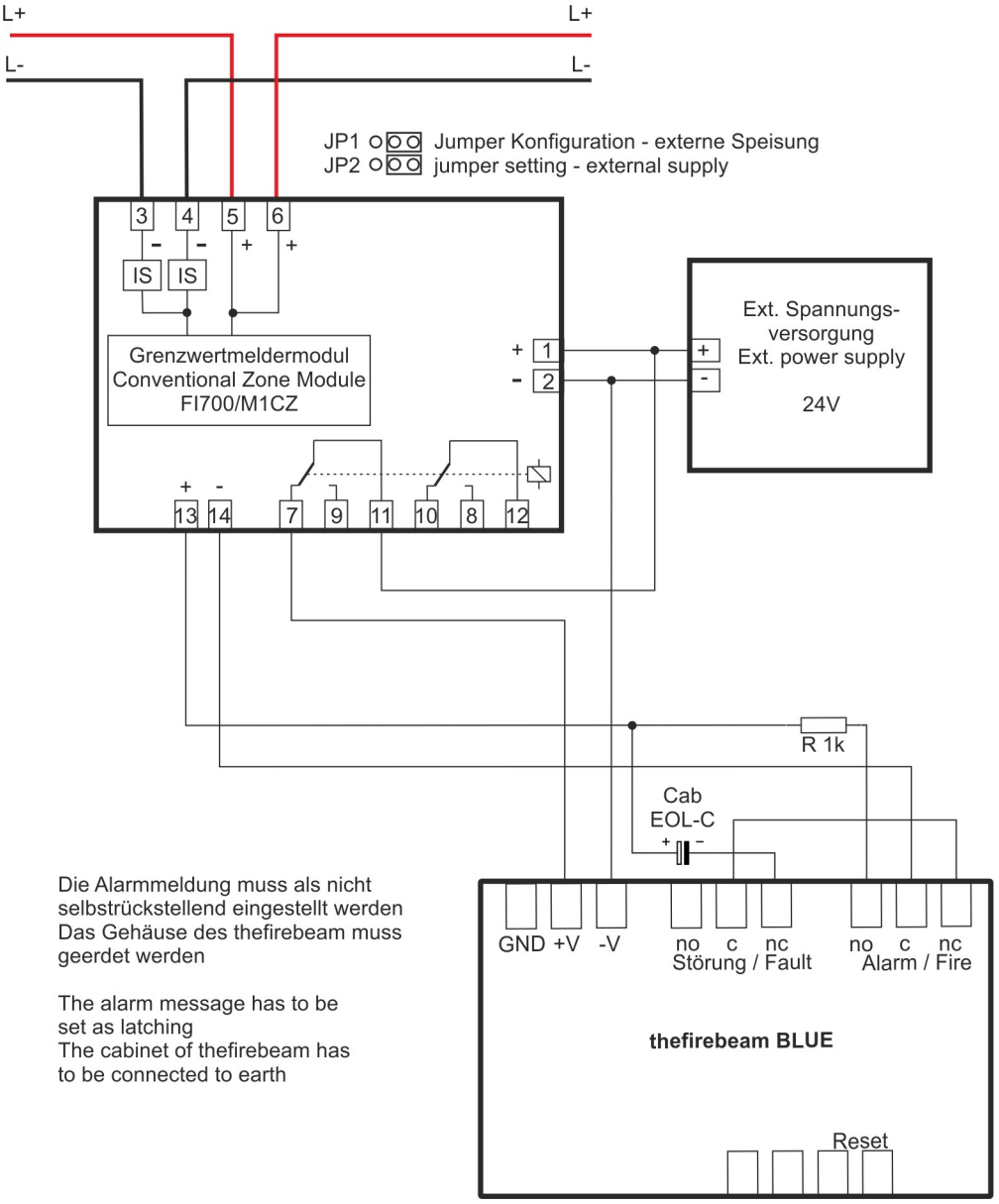


After applying the supply voltage to the detector, the fault relay will remain released for 8 seconds. Therefore, a brief fault can occur on the fire detection control panel after the enablement of the conventional zone module, after a control panel reset and after power ON.

If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

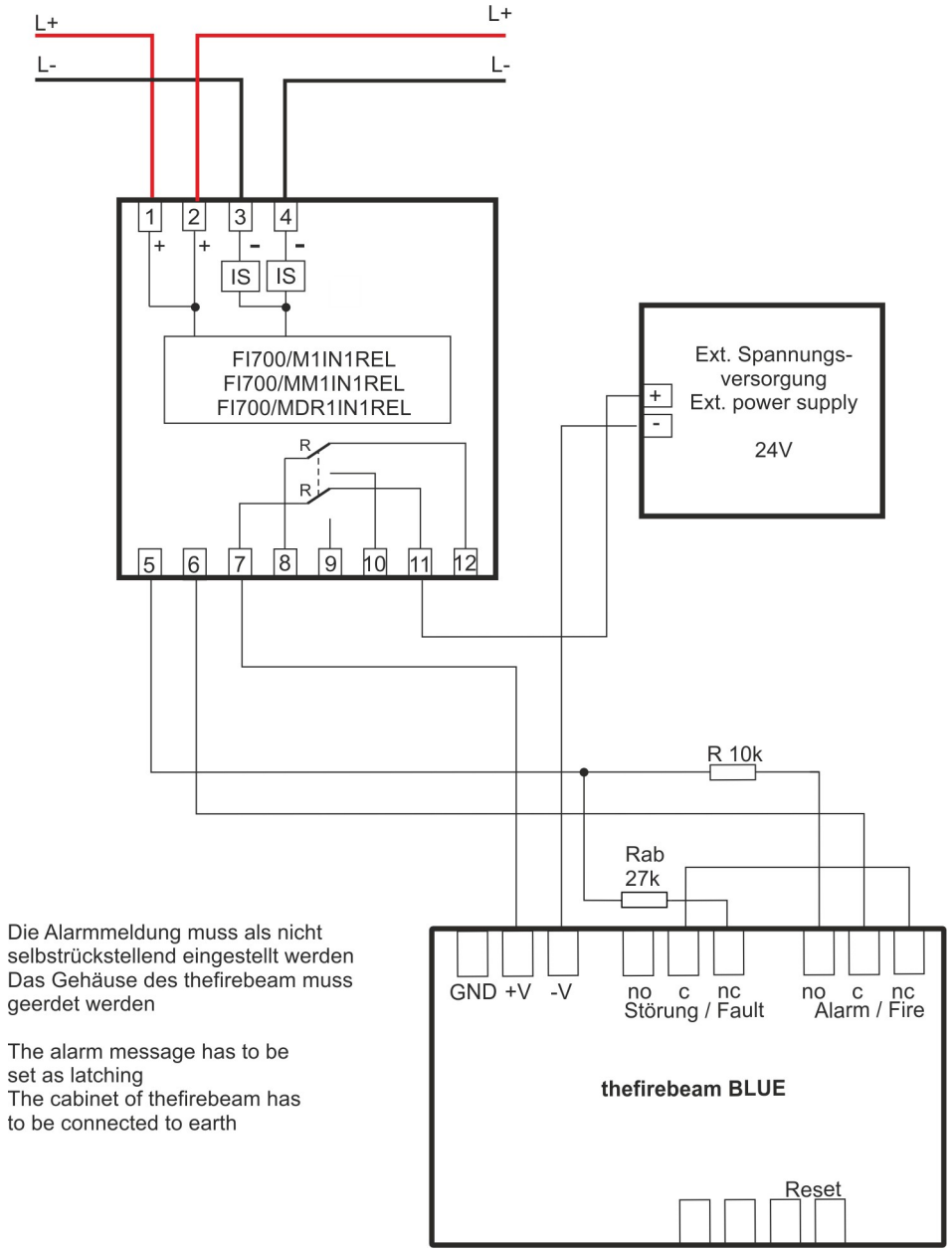
3.8.37 Beam Smoke Detector thefirebeam BLUE – FI700/M1CZ



After applying the supply voltage to the detector, the fault relay will remain released for 8 seconds. Therefore, a brief fault can occur on the fire detection control panel after the enablement of the conventional zone module, after a control panel reset and after power ON.

If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

3.8.38 Beam Smoke Detector thefirebeam BLUE – FI700/M1IN1REL

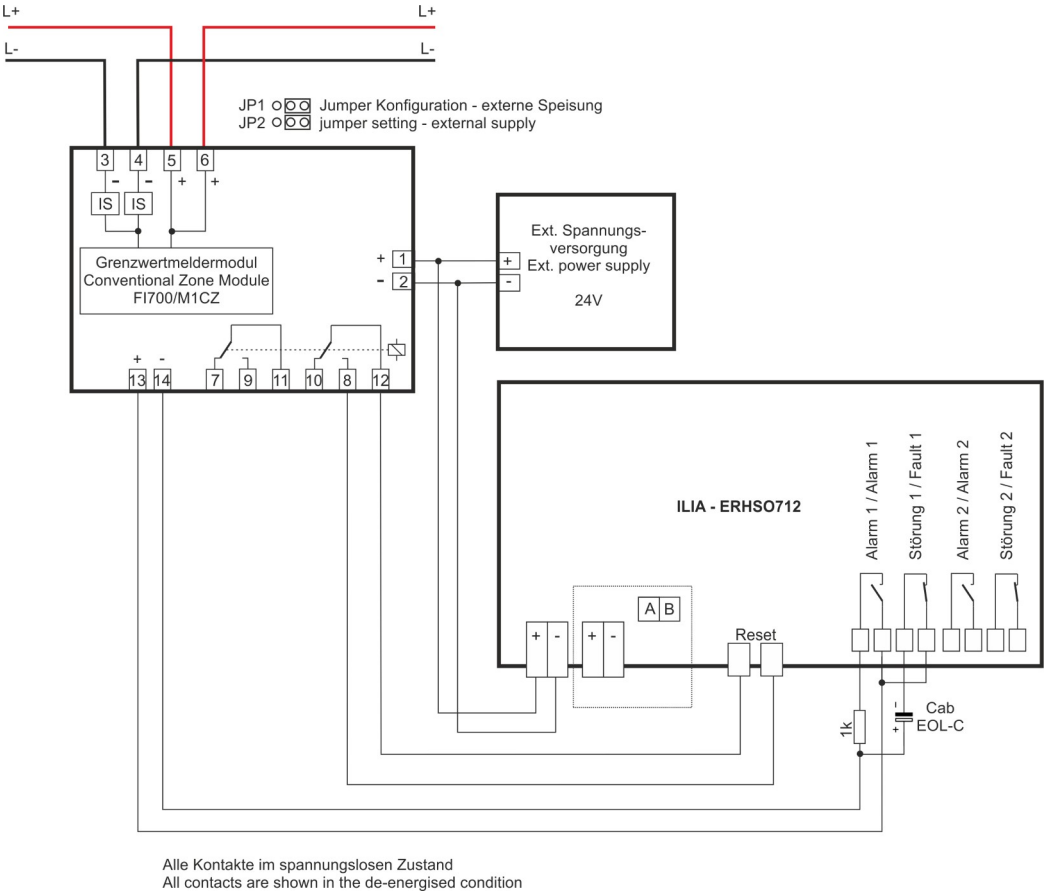


After applying the supply voltage to the detector, the fault relay will remain released for 8 seconds. Therefore, a brief fault can occur on the fire detection control panel after a control panel reset and after power ON.

If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

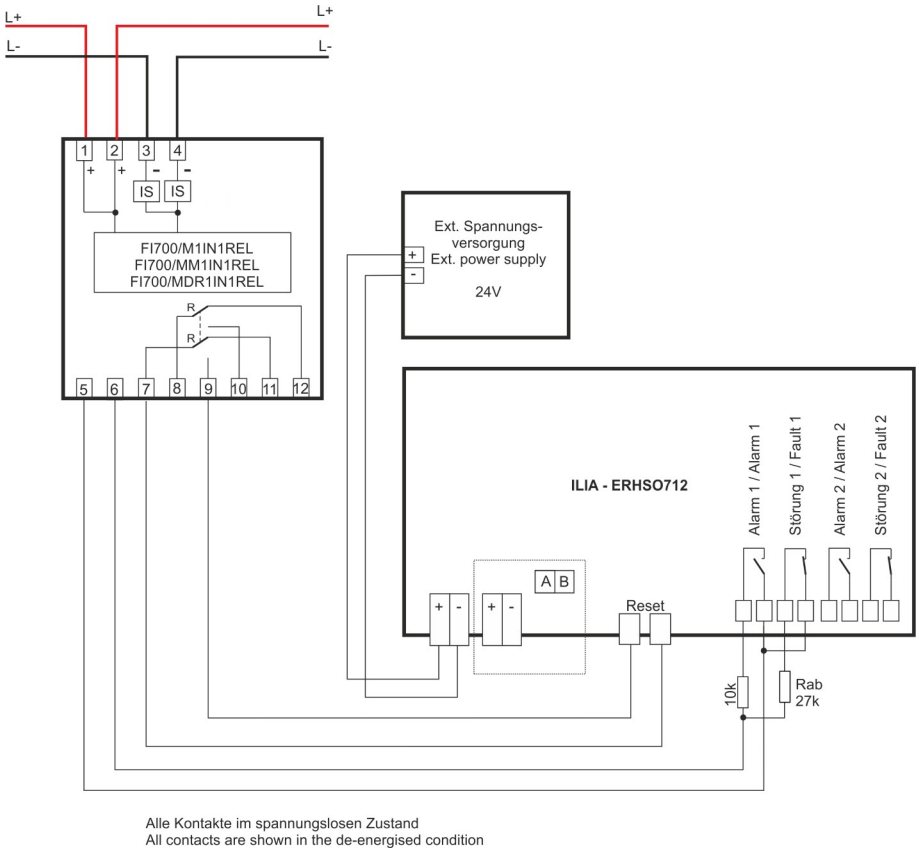
This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.39 Beam Smoke Detector ERHSO712 – FI700/M1CZ



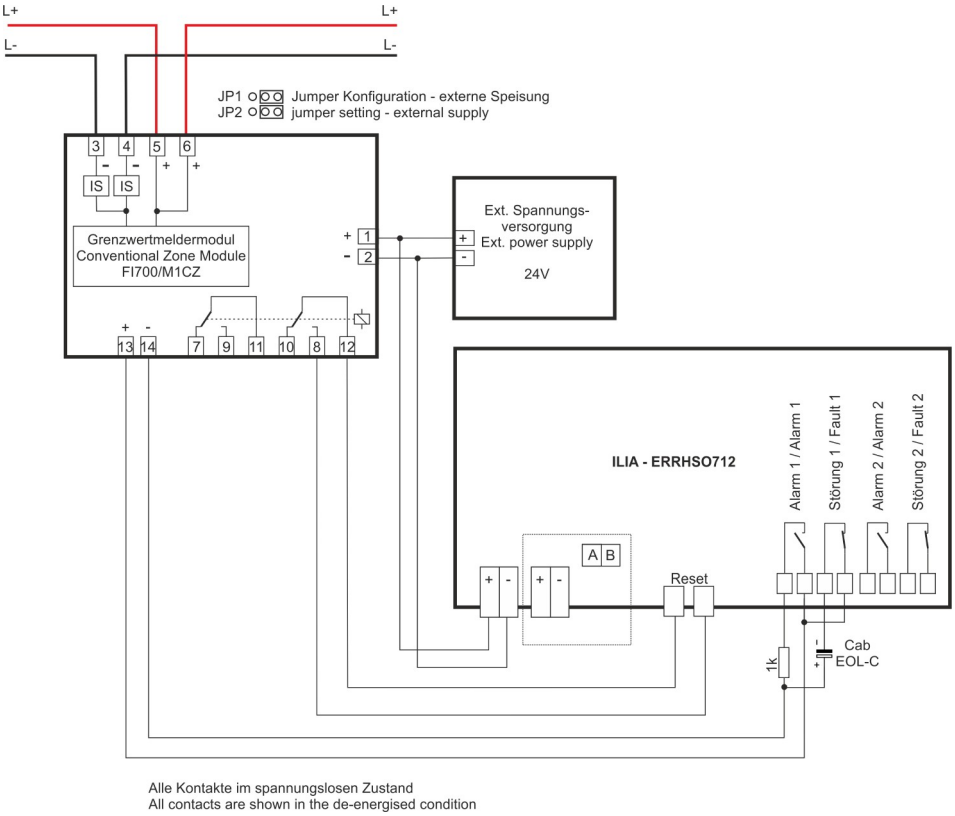
If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

3.8.40 Beam Smoke Detector ERHSO712 – FI700/M1IN1REL



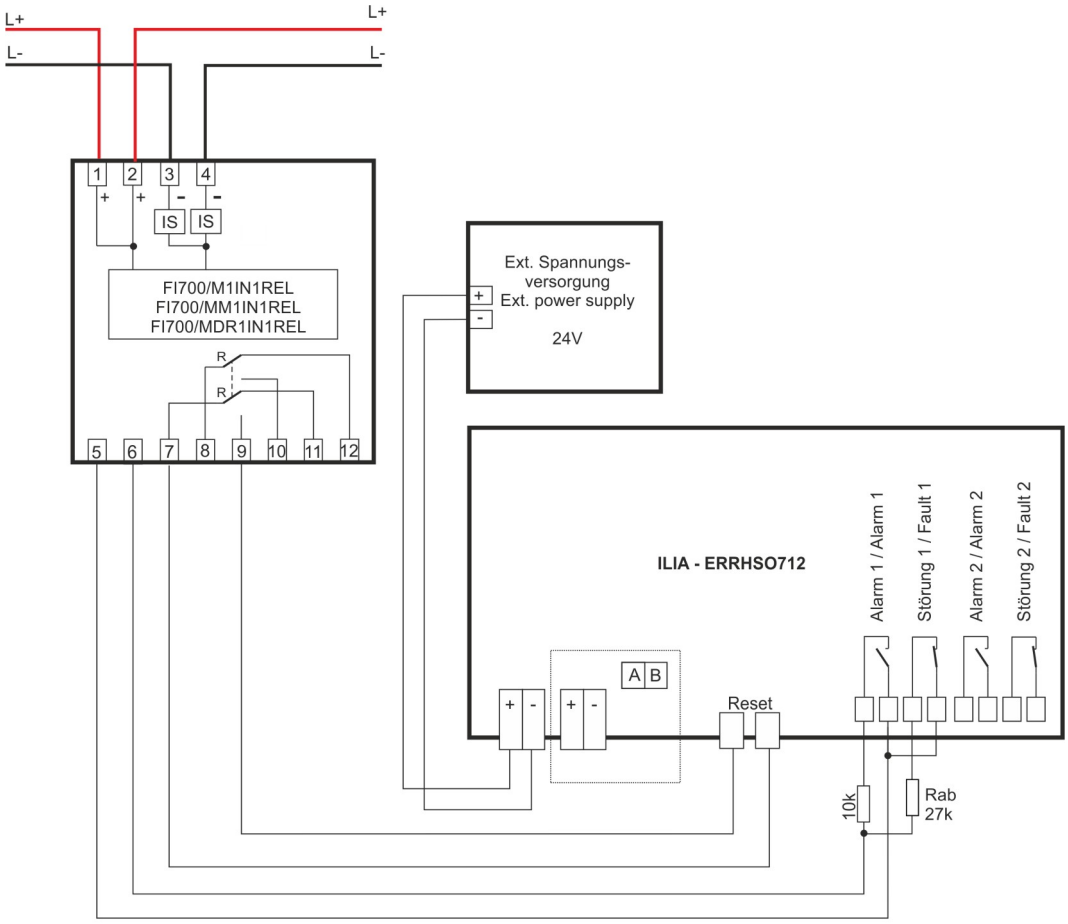
This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.41 Beam Smoke Detector ERRHSO712 – FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

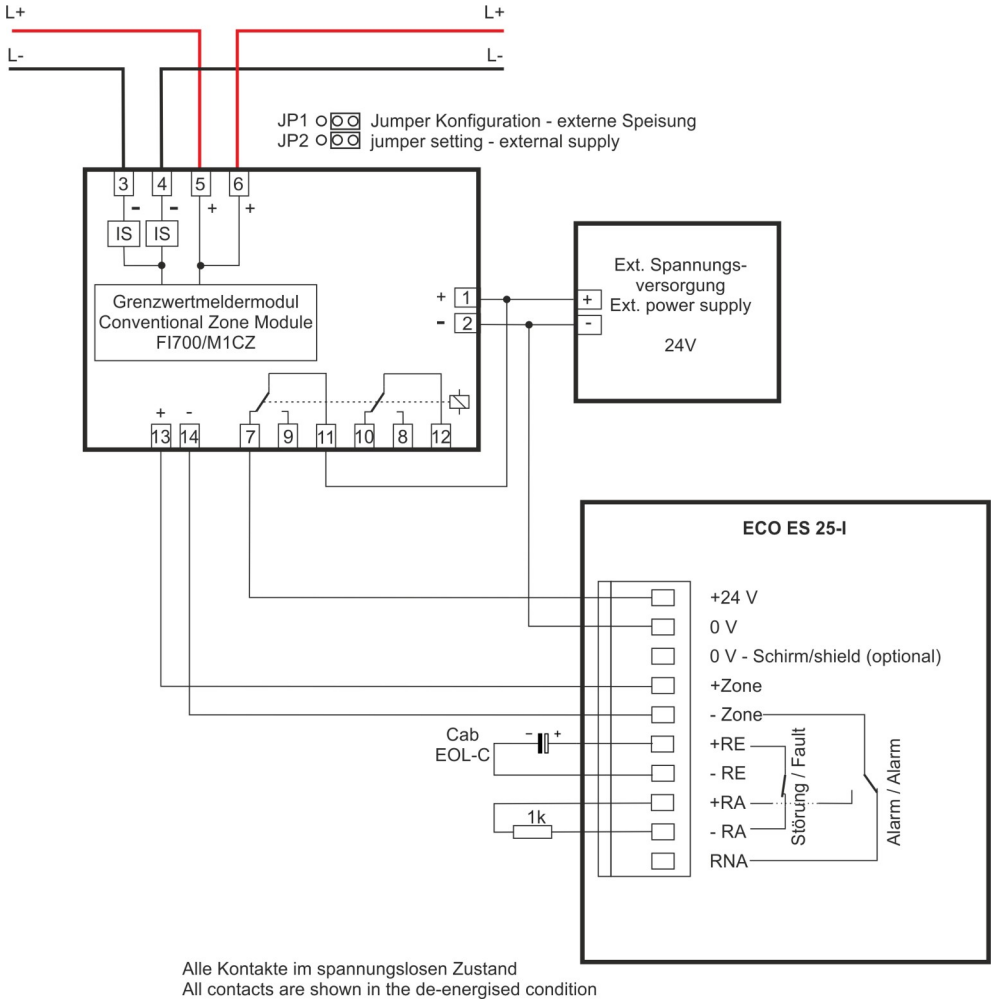
3.8.42 Beam Smoke Detector ERRHSO712 – FI700/M1IN1REL



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

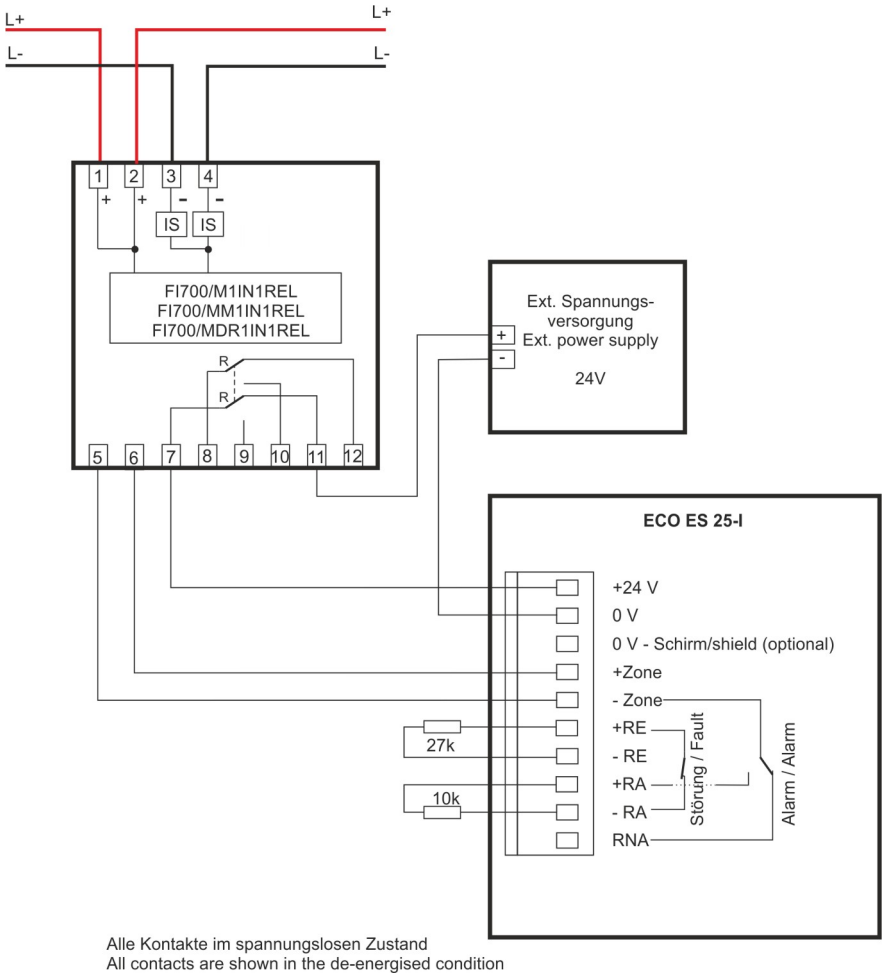
This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.43 Beam Smoke Detector ECO ES 25-I – FI700/M1CZ



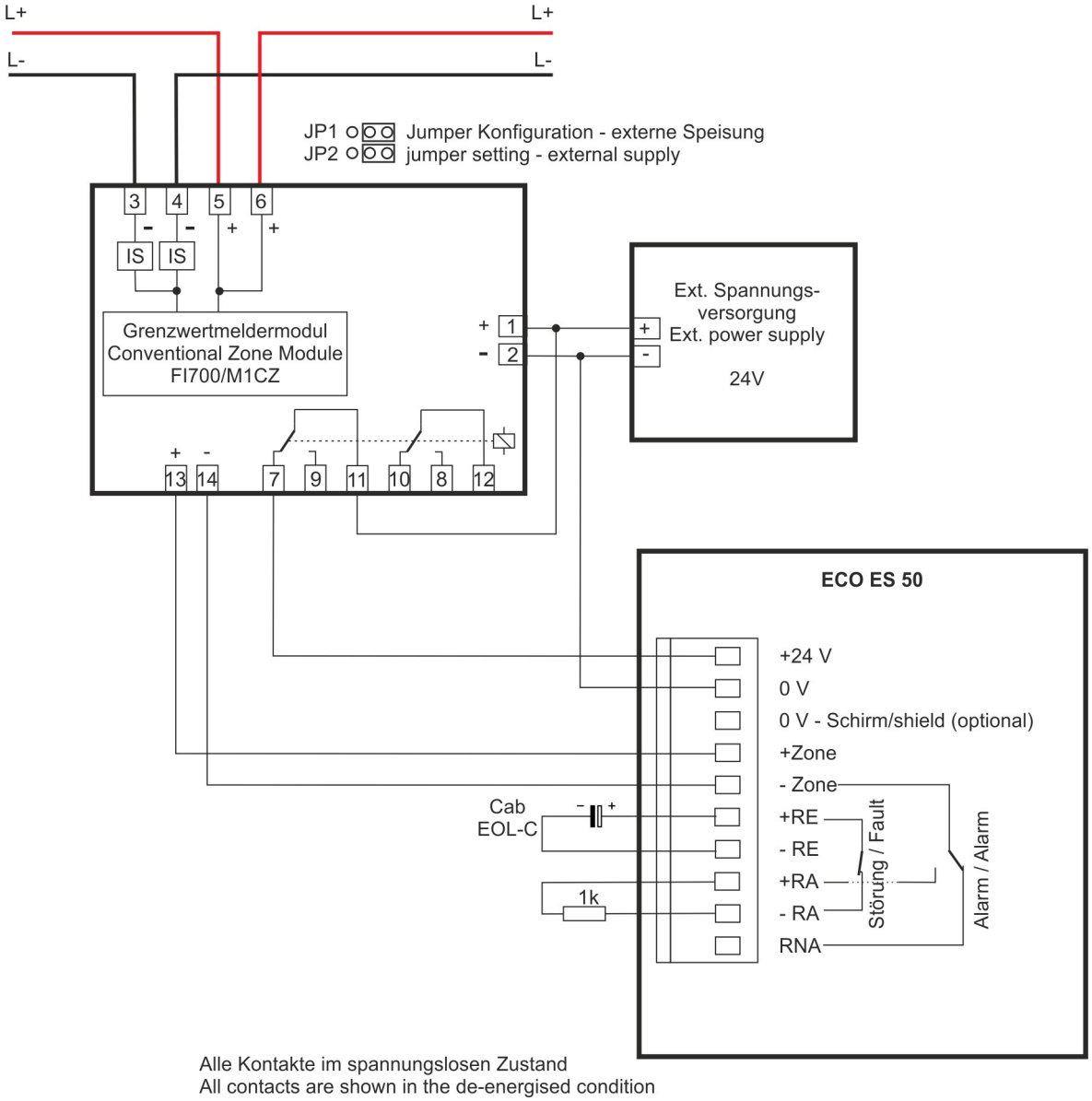
If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

3.8.44 Beam Smoke Detector ECO ES 25-I – FI700/M1IN1REL



This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

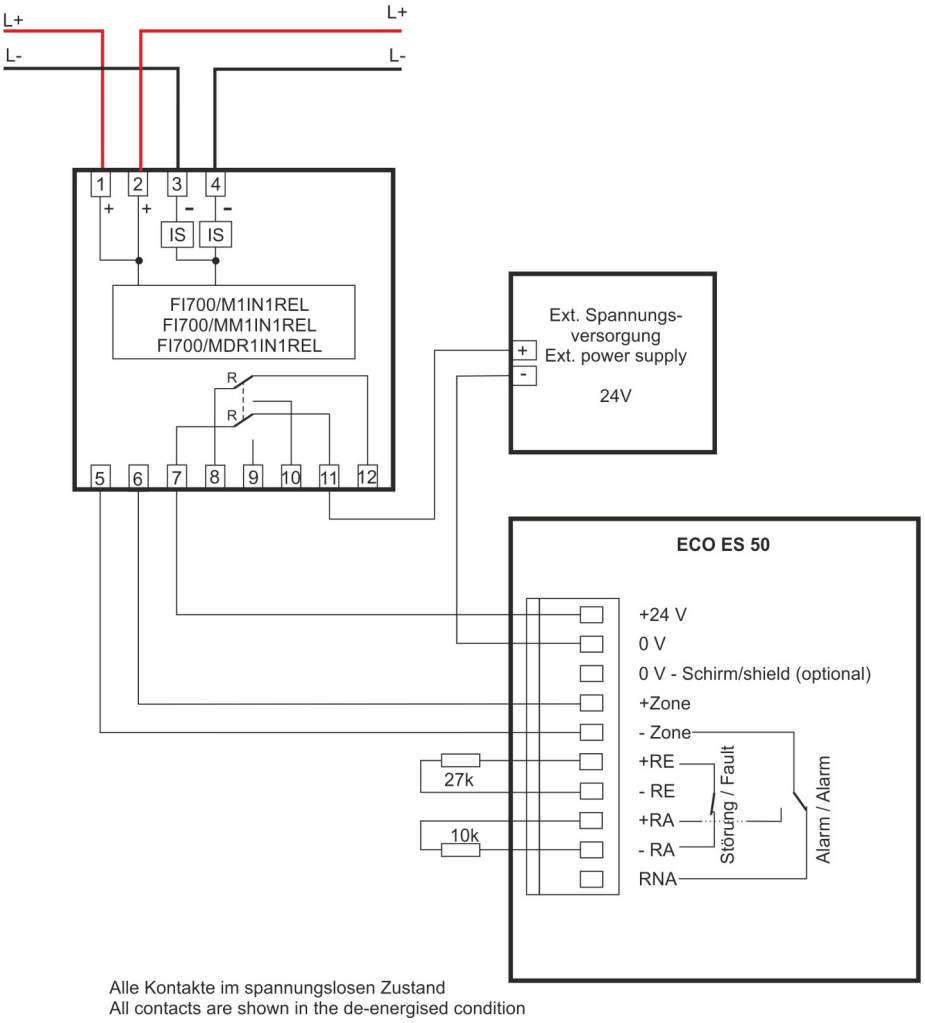
3.8.45 Beam Smoke Detector ECO ES 50-I – FI700/M1CZ



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

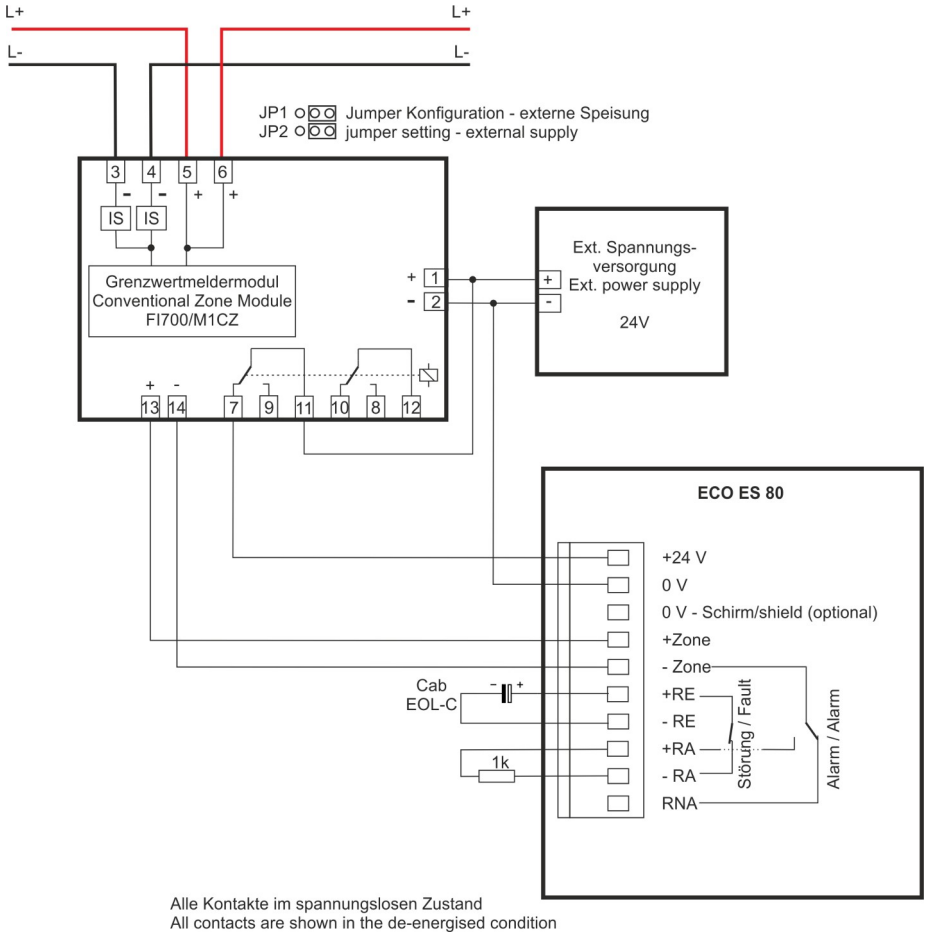
If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

3.8.46 Beam Smoke Detector ECO ES 50-I – FI700/M1IN1REL



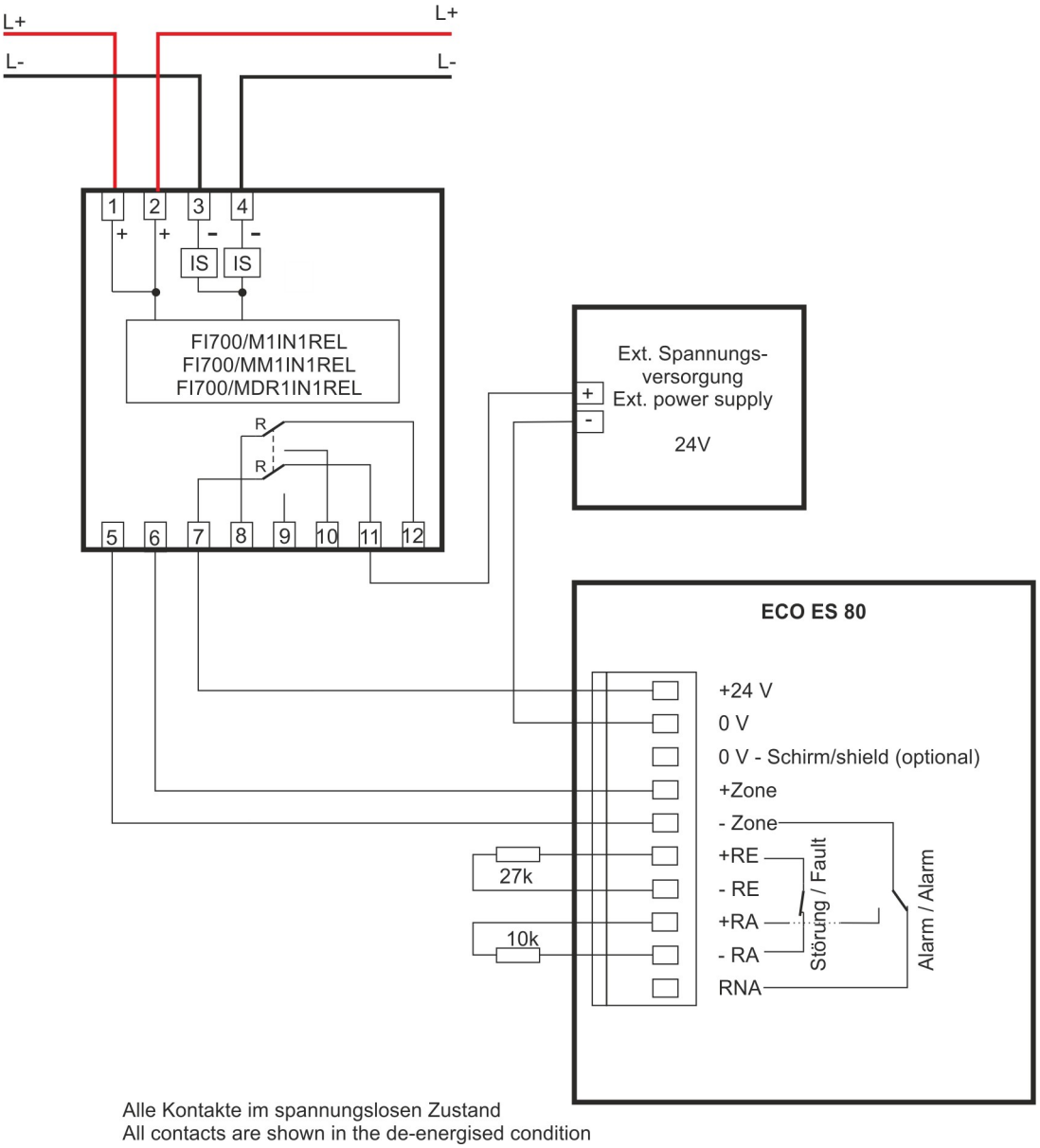
This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.47 Beam Smoke Detector ECO ES 80-I – FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations have to be observed.

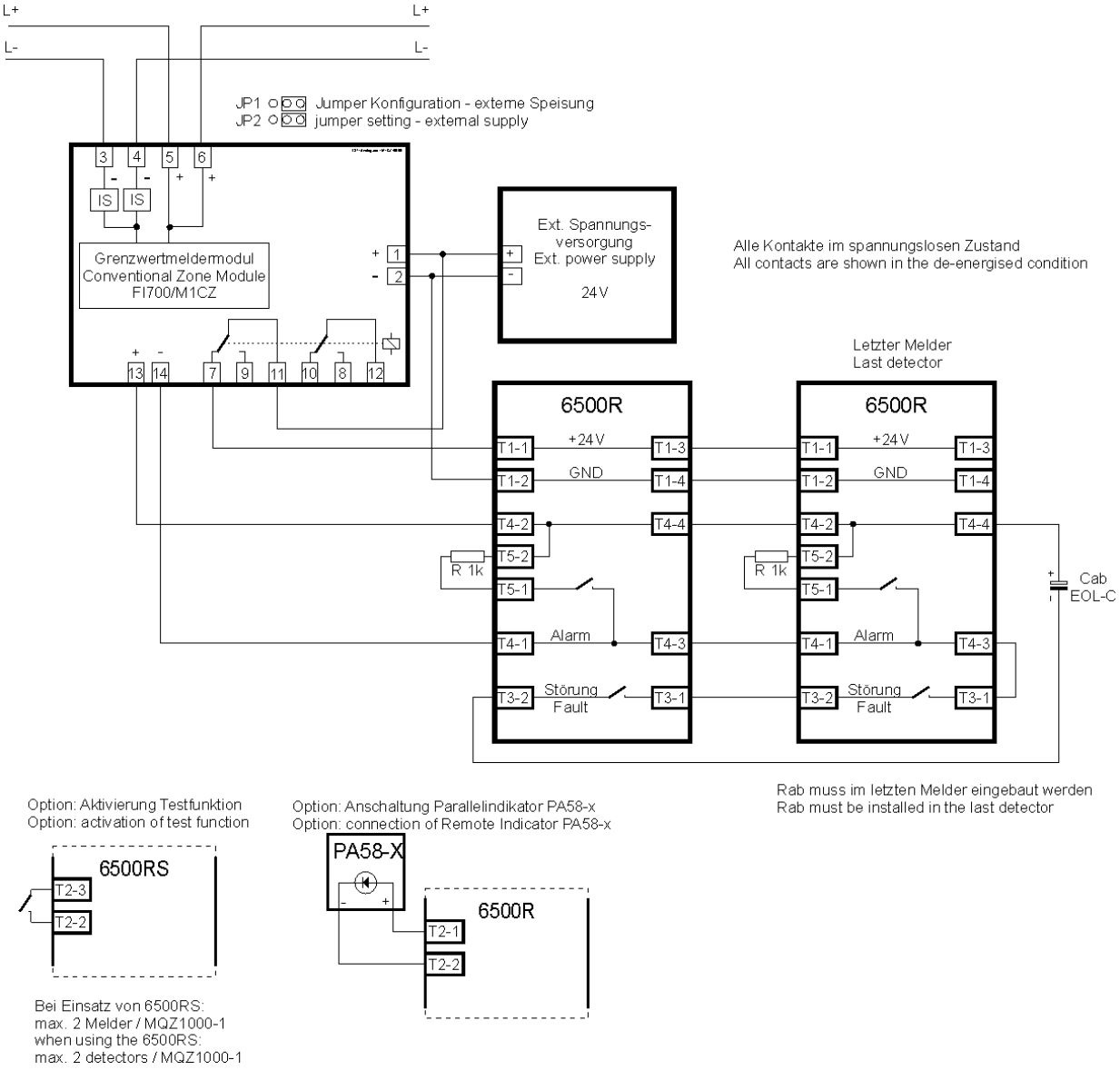
3.8.48 Beam Smoke Detector ECO ES 80-I – FI700/M1IN1REL



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

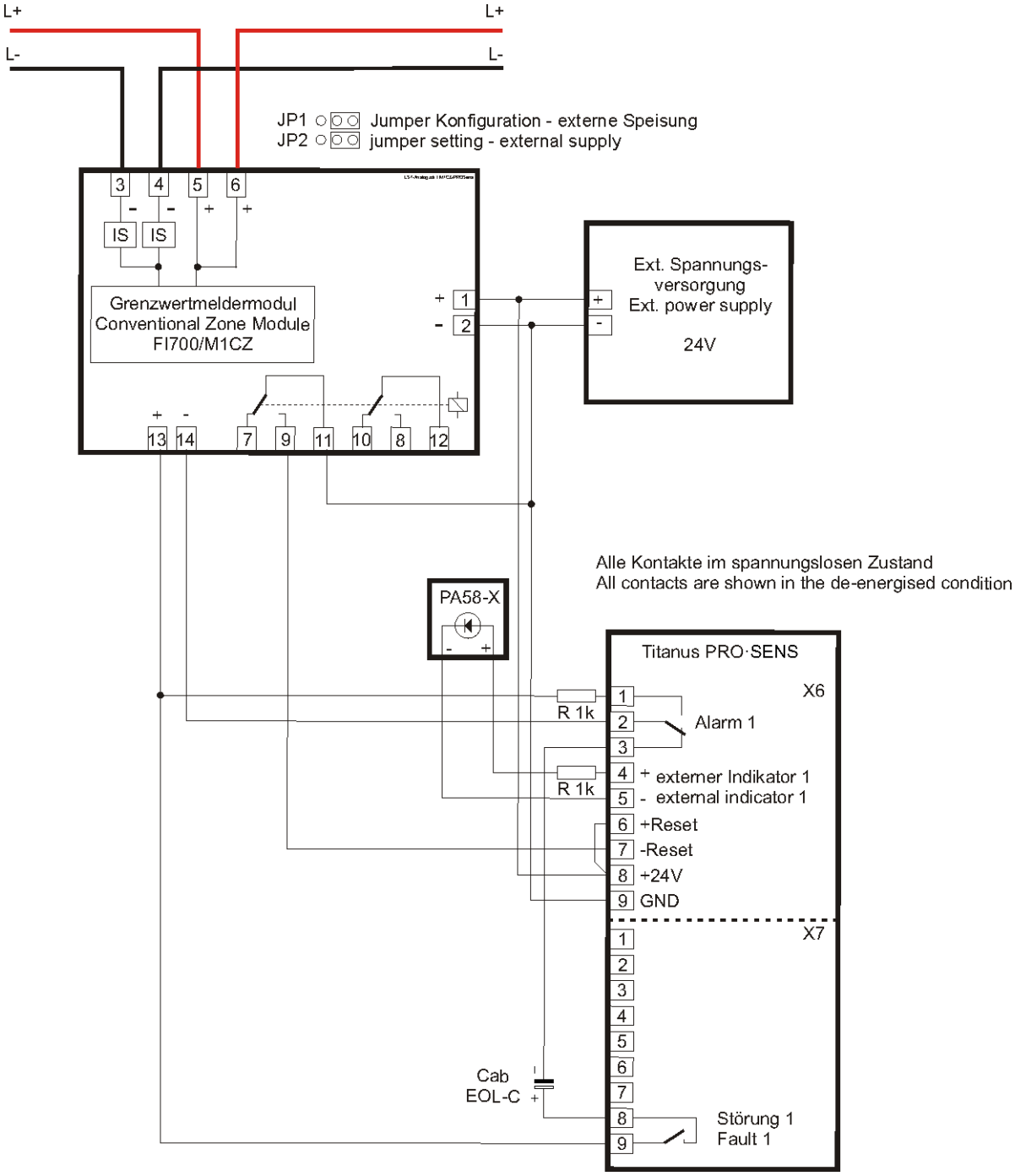
This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.49 Beam Smoke Detectors 6500R and 6500RS



An alarm verification according to EN 54-2 Type A is not permissible (in the case of the BC600, the alarm verification is set through the properties of the zone, and in the case of the BC216 it is set through the type of zone).

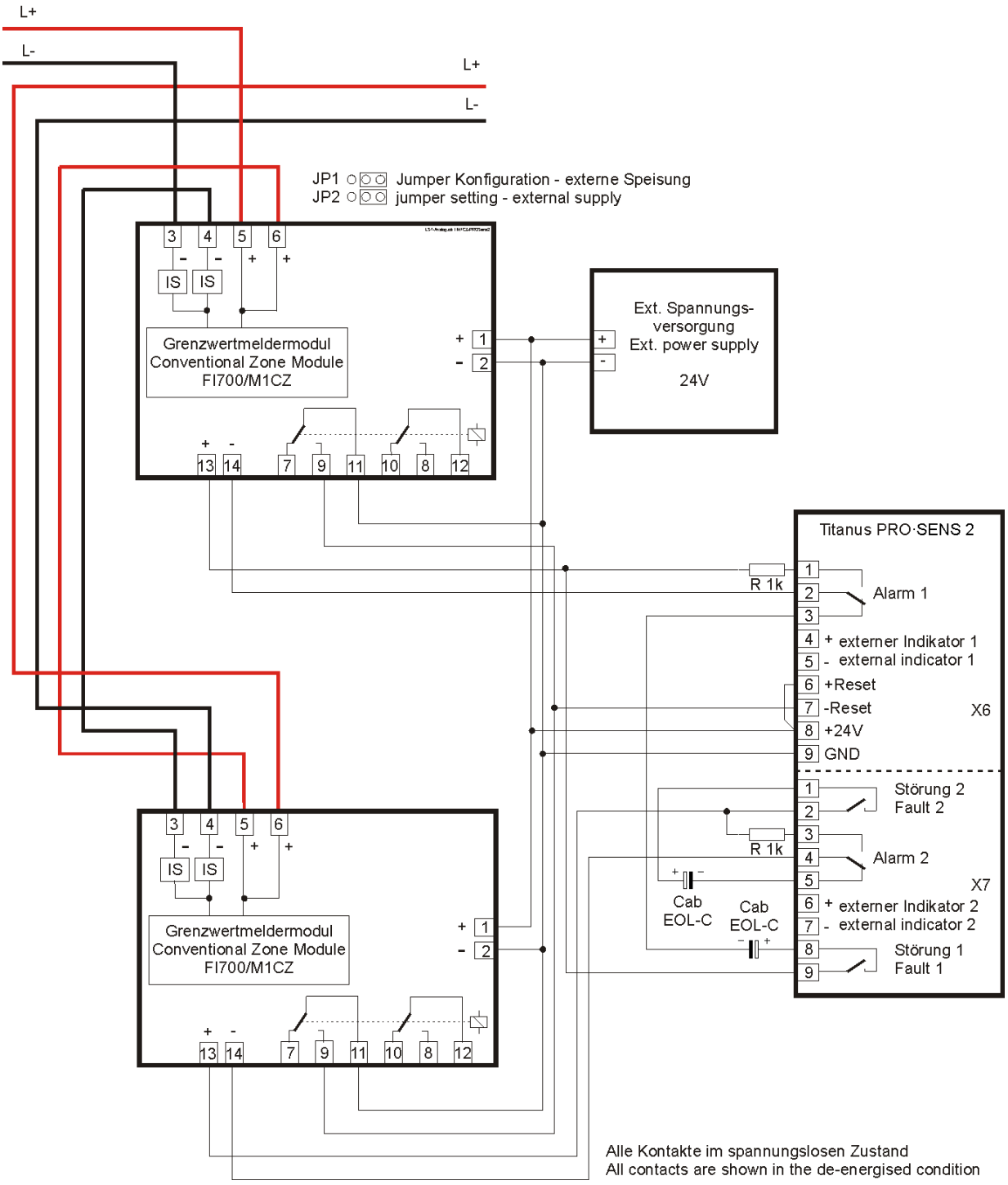
3.8.50 Aspirating smoke detector Titanus PRO·SENS – TP-1/A with one detector module



On pin connector JU2/3 (main printed circuit board), the jumper has to be set to position 1-2, which means that the fault relay is set to operate as NORMALLY OPEN contact.

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.51 Aspirating smoke detector Titanus PRO·SENS – TP1/A with 2 detector modules

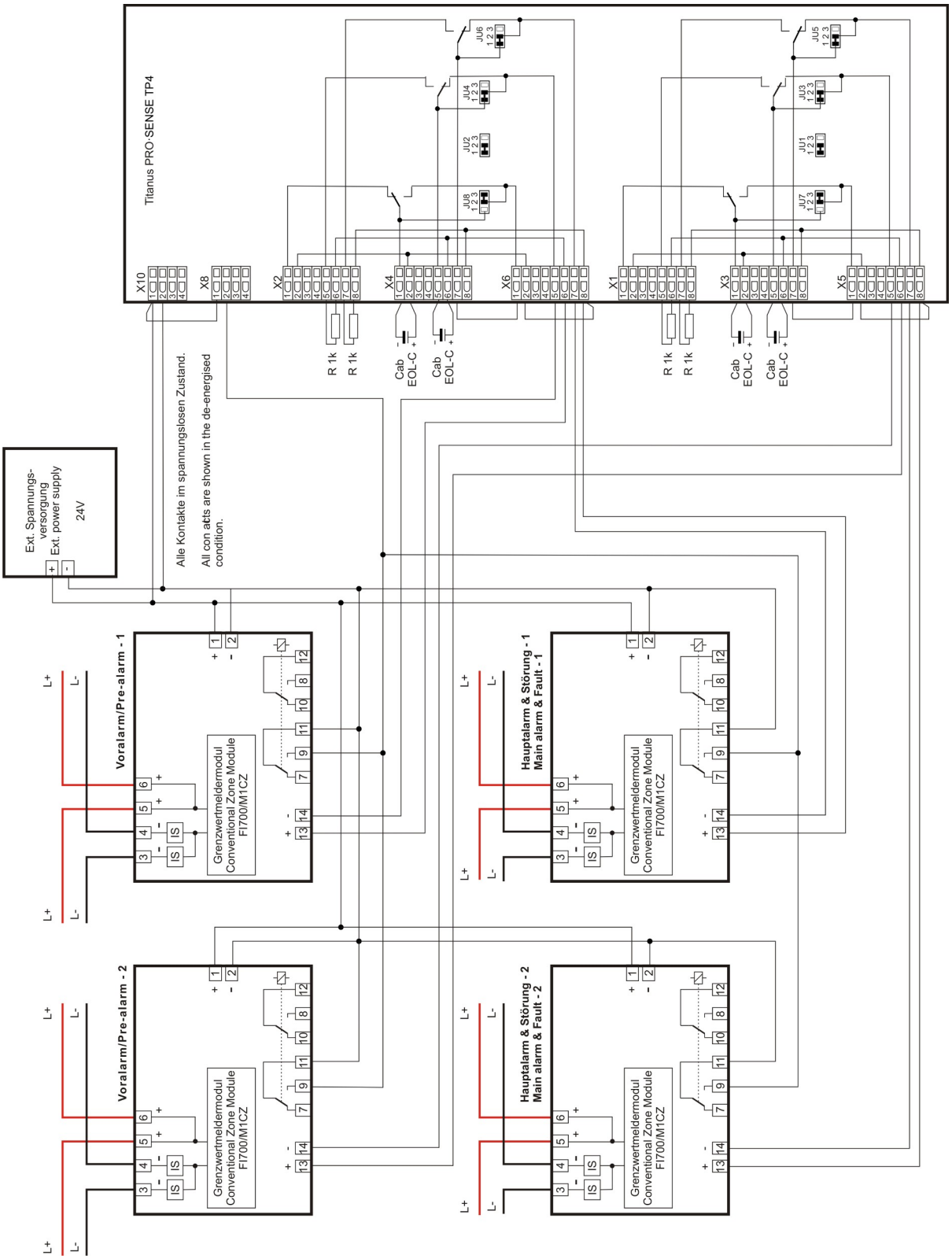


On pin connector JU2/3 (main printed circuit board), the jumper has to be set to position 1-2, which means that the fault relay is set to operate as NORMALLY OPEN contact.

For the operation of the aspirating smoke detector on Control Panels Series BC216 and BC600, a firmware from calendar week 12 / 2013 or later is to be used. If an older firmware is used, the aspirating smoke detector will be deactivated if one of the two modules is disabled!

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

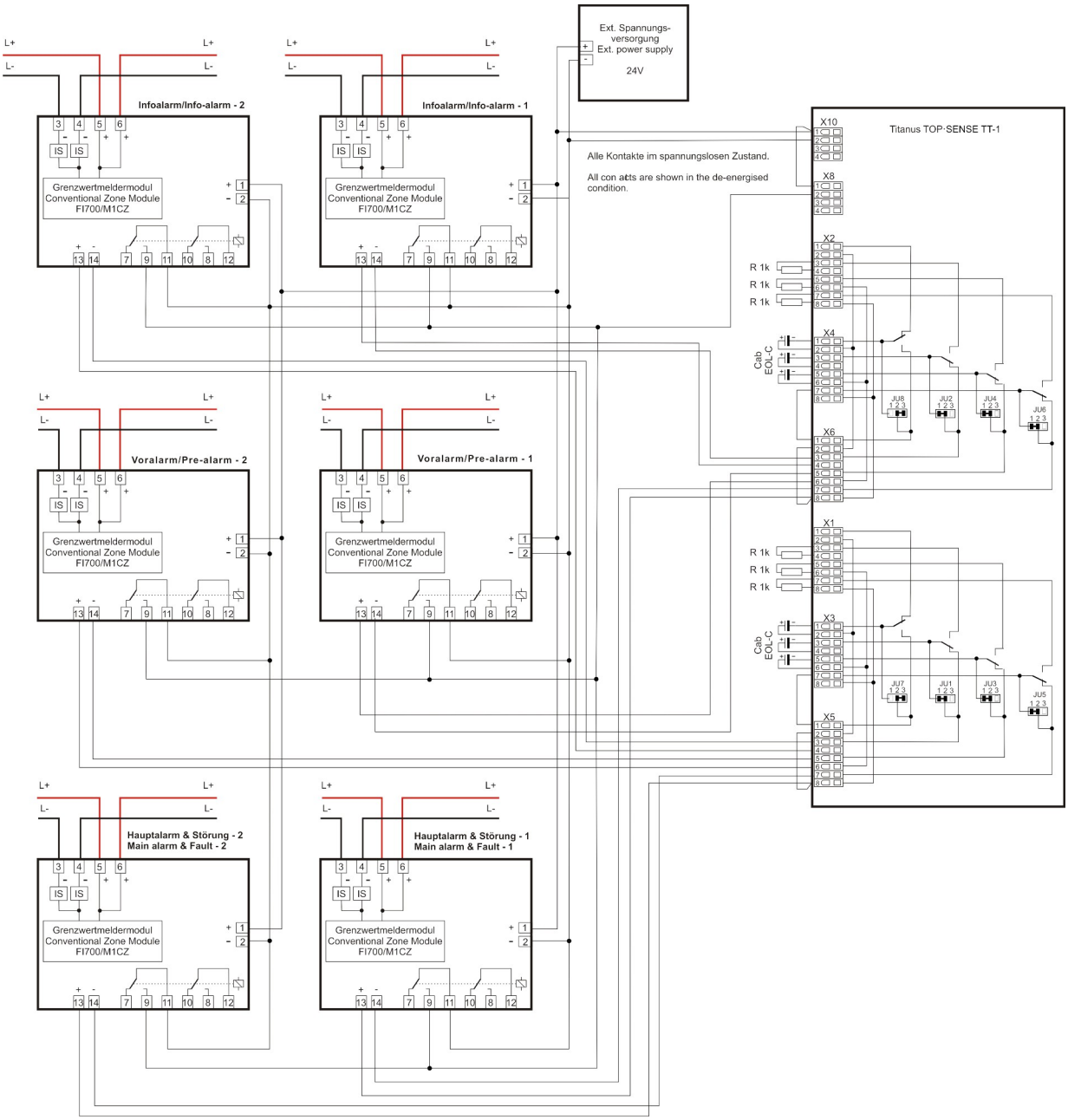
3.8.52 Aspirating smoke detector Titanus PRO SENS – TP-4 with 2 detector modules



For the operation of the aspirating smoke detector on Control Panels Series BC216 and BC600, a firmware from calendar week 12 / 2013 or later is to be used, and the reset output of the conventional zone module is to be set to Pulsed signal. If an older firmware is used, the aspirating smoke detector will be deactivated if one of the two modules is disabled!

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

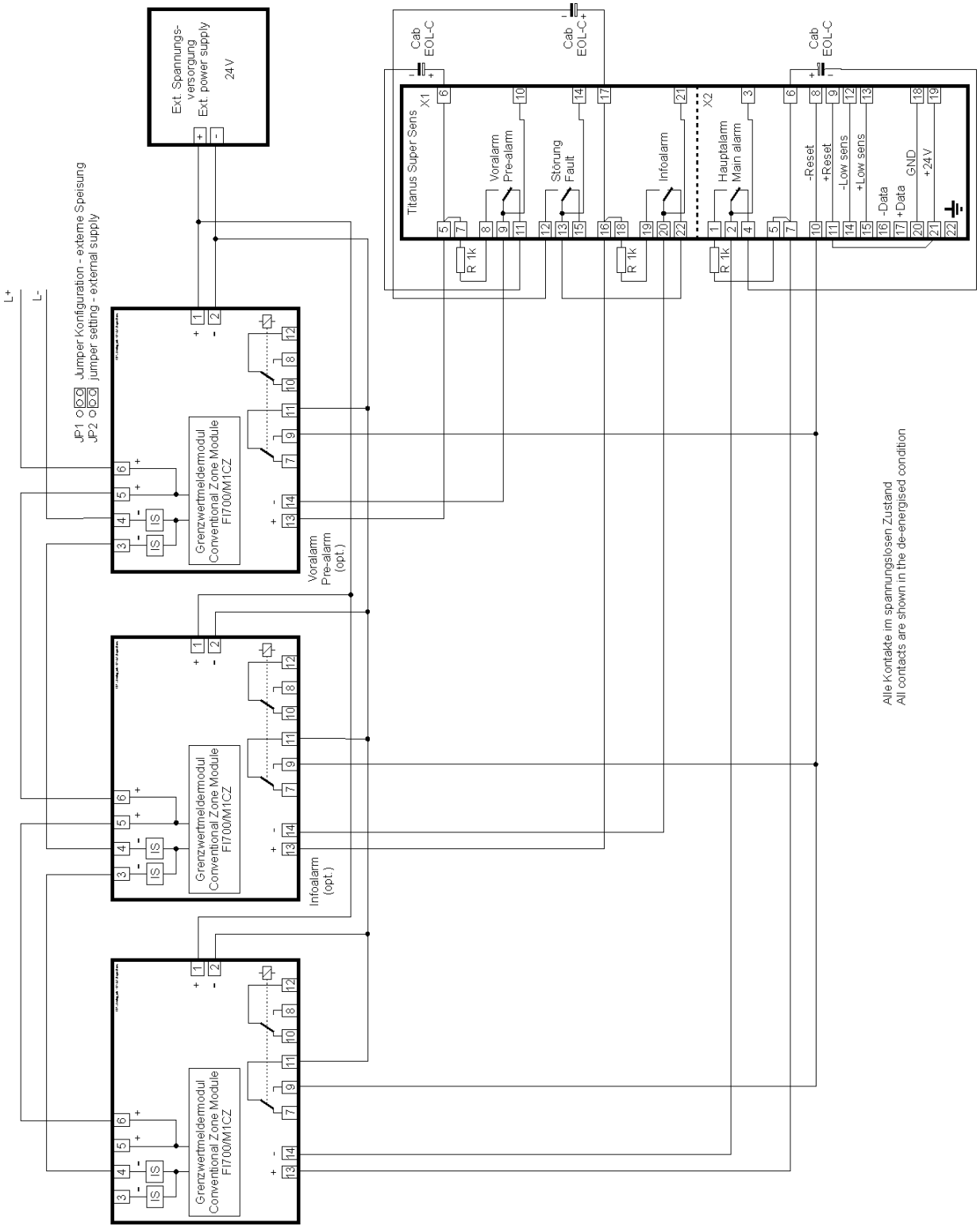
3.8.53 Aspirating smoke detector Titanus TOP SENS – TT-1 with 2 detector modules



For the operation of the aspirating smoke detector on Control Panels Series BC216 and BC600, a firmware from calendar week 12 / 2013 or later is to be used, and the reset output of the conventional zone module is to be set to Pulsed signal. If an older firmware is used, the aspirating smoke detector will be deactivated if one of the two modules is disabled!

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.54 Aspirating smoke detector Titanus Super Sens – T-SS

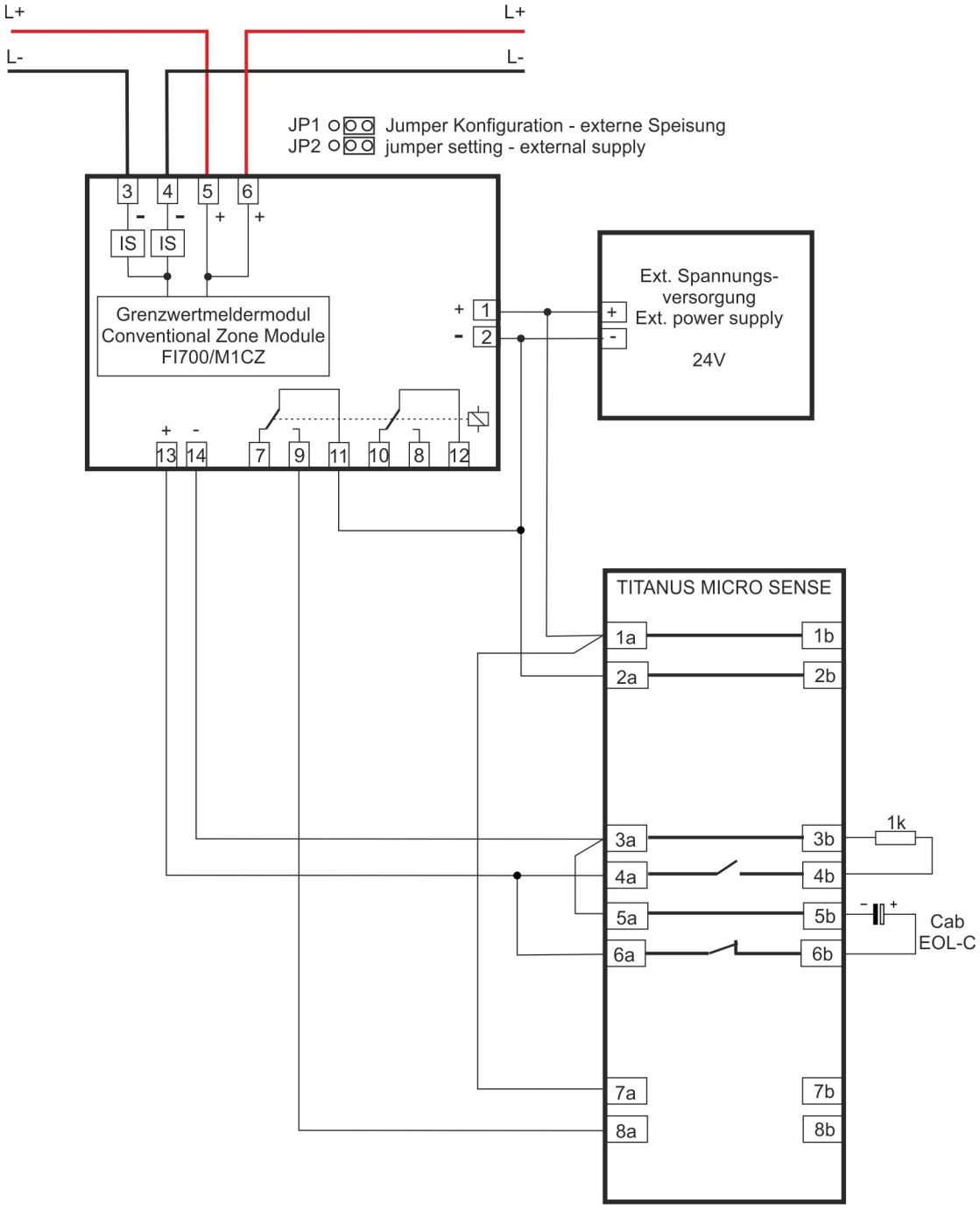


On pin connector JU2/3 (main printed circuit board), the jumper has to be set to position 1-2. In this way, the fault relay is set to operate as NORMALLY OPEN contact.

For the operation of the aspirating smoke detector on Control Panels Series BC216/BC600, a firmware from calendar week 12 / 2013 or later is to be used, and the reset output of the conventional zone module is to be set to Pulsed signal. If an older firmware is used, the aspirating smoke detector will be deactivated if one of the two modules is disabled!

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

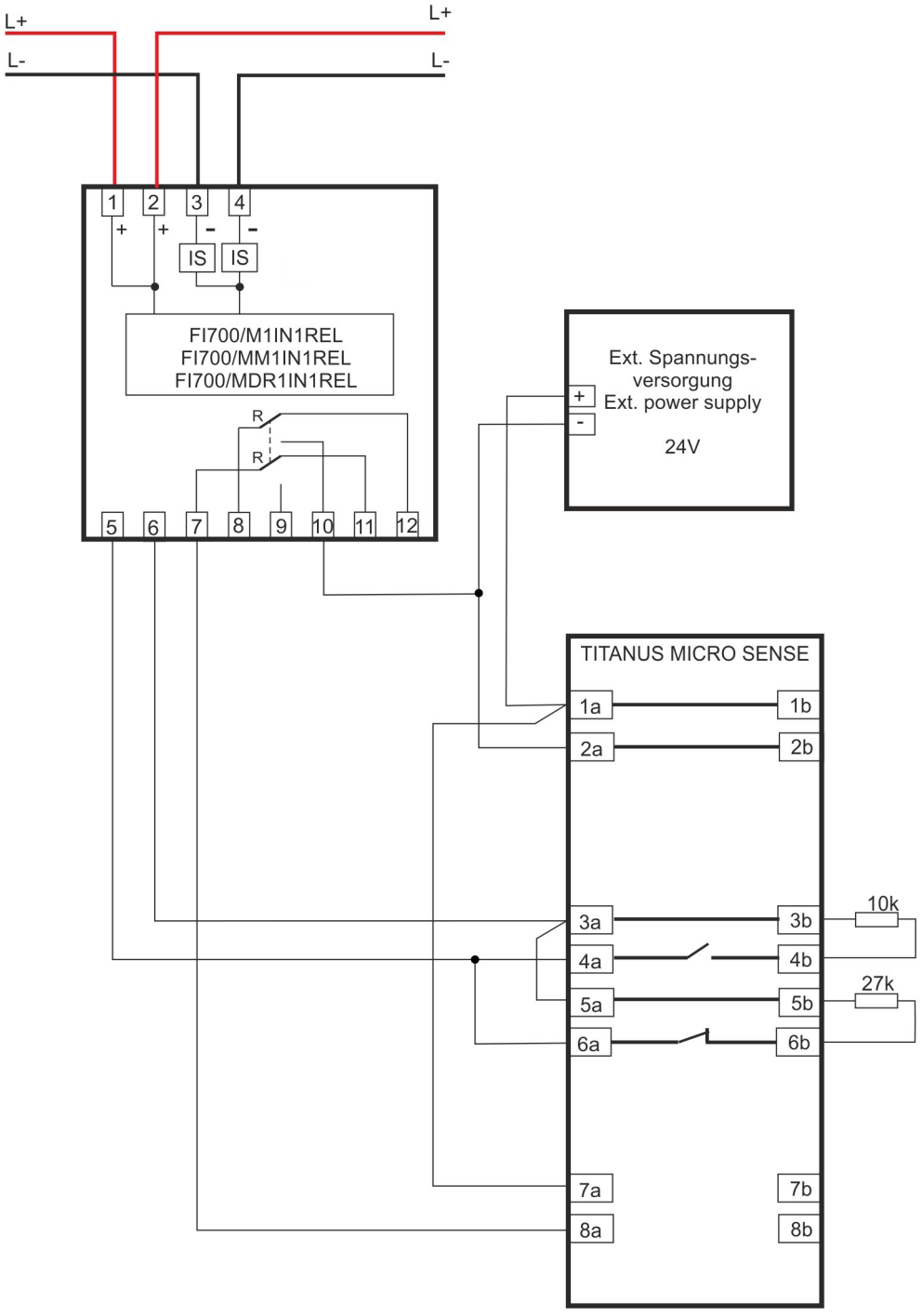
3.8.55 Aspirating smoke detector Titanus MICRO SENSE – FI700/M1CZ



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

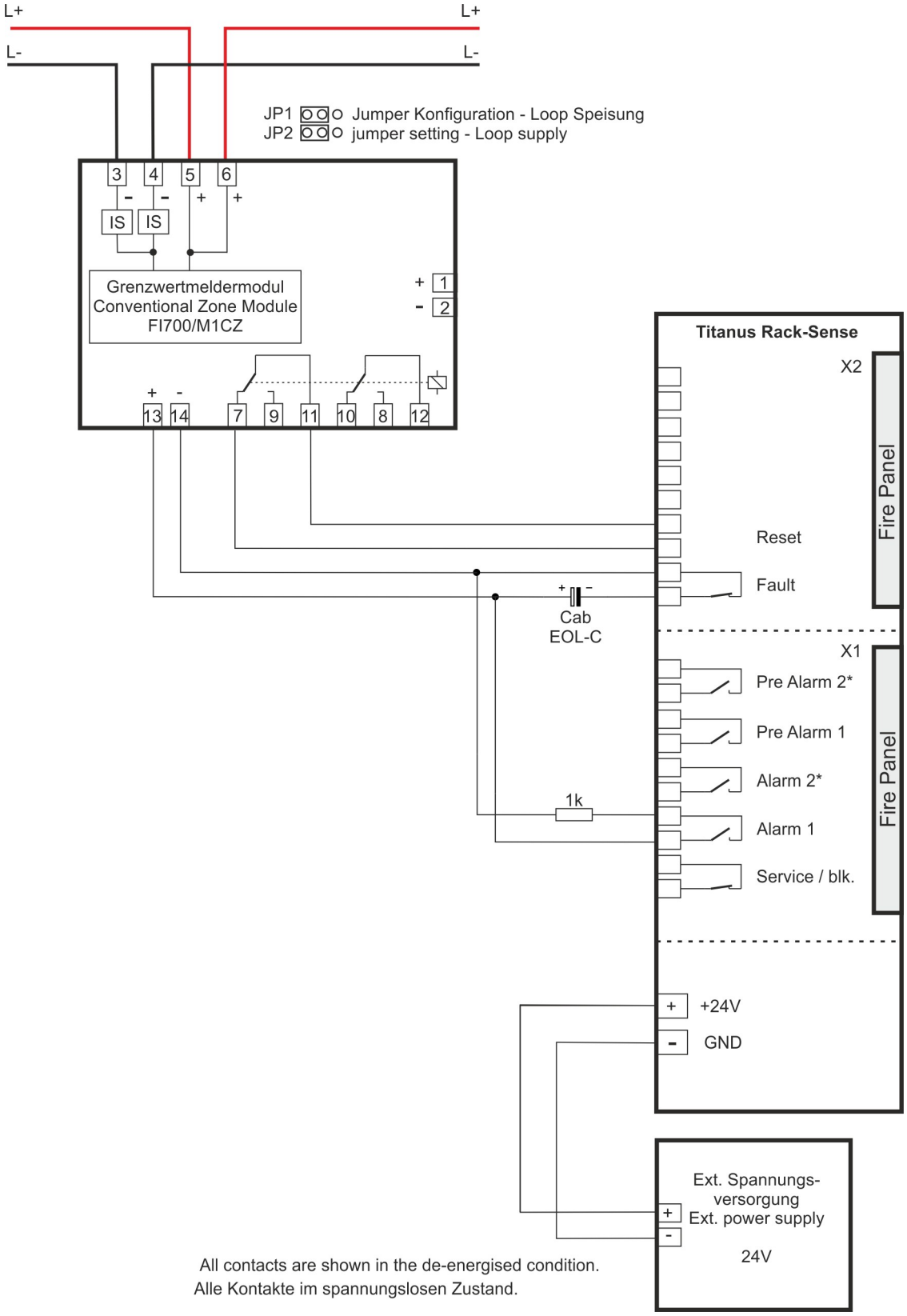
3.8.56 Aspirating smoke detector Titanus MICRO SENSE – FI700/M1IN1REL



Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

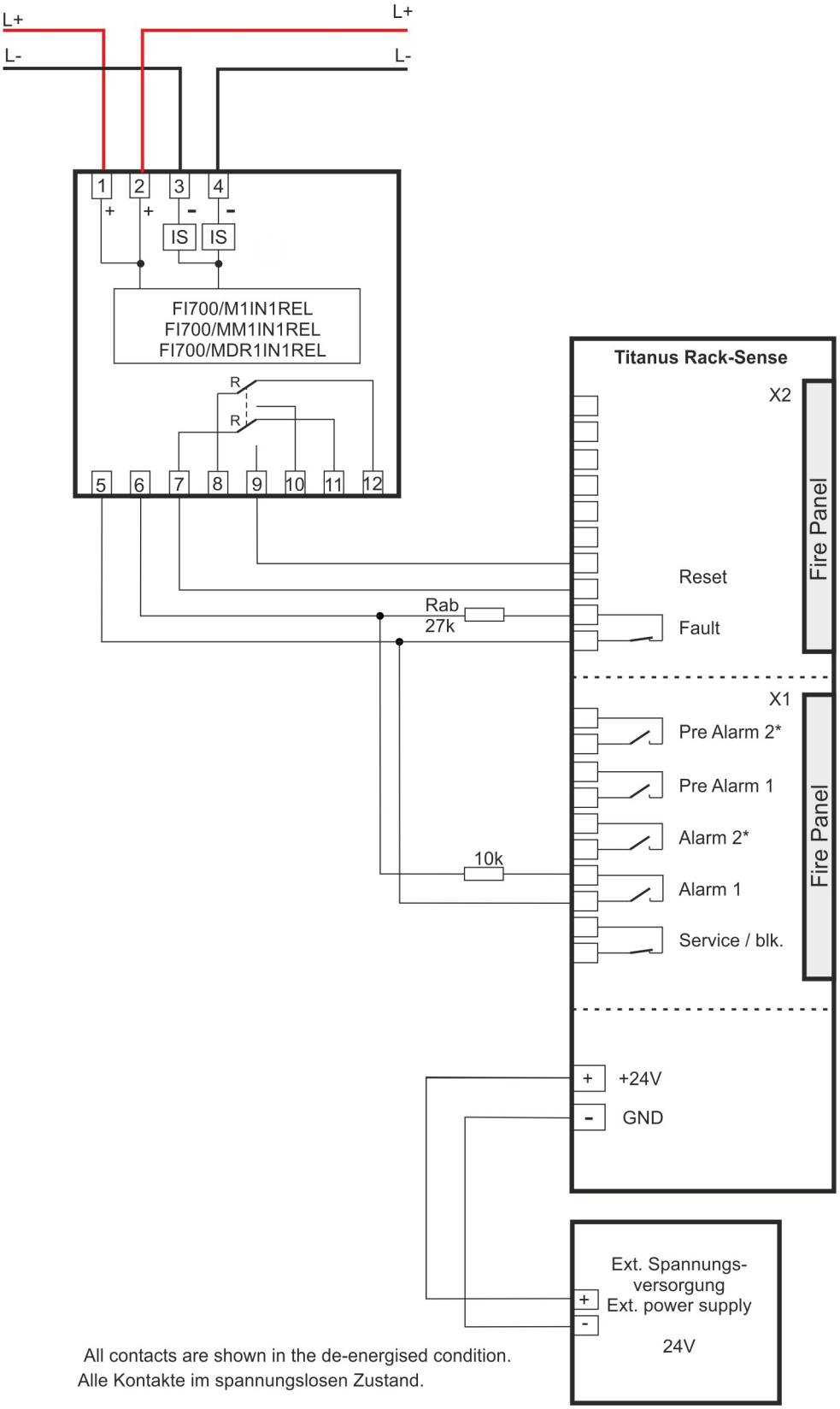
This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.57 Aspirating smoke detector Titanus RACK SENSE – FI700/M1CZ



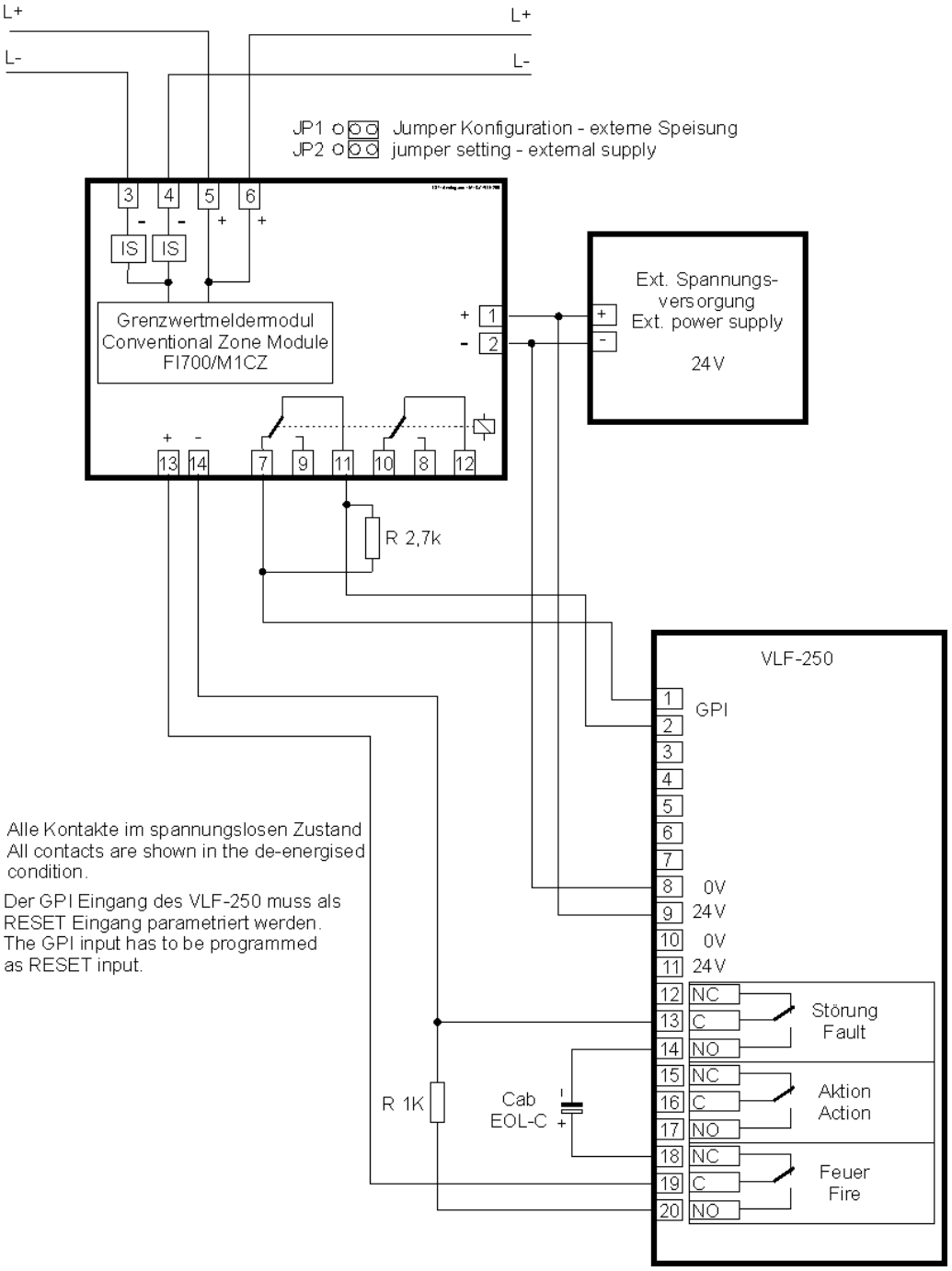
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.58 Aspirating smoke detector Titanus RACK SENSE – FI700/M1IN1REL



This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.59 Smoke Aspiration System Vesda VLF-250 / VLF-500

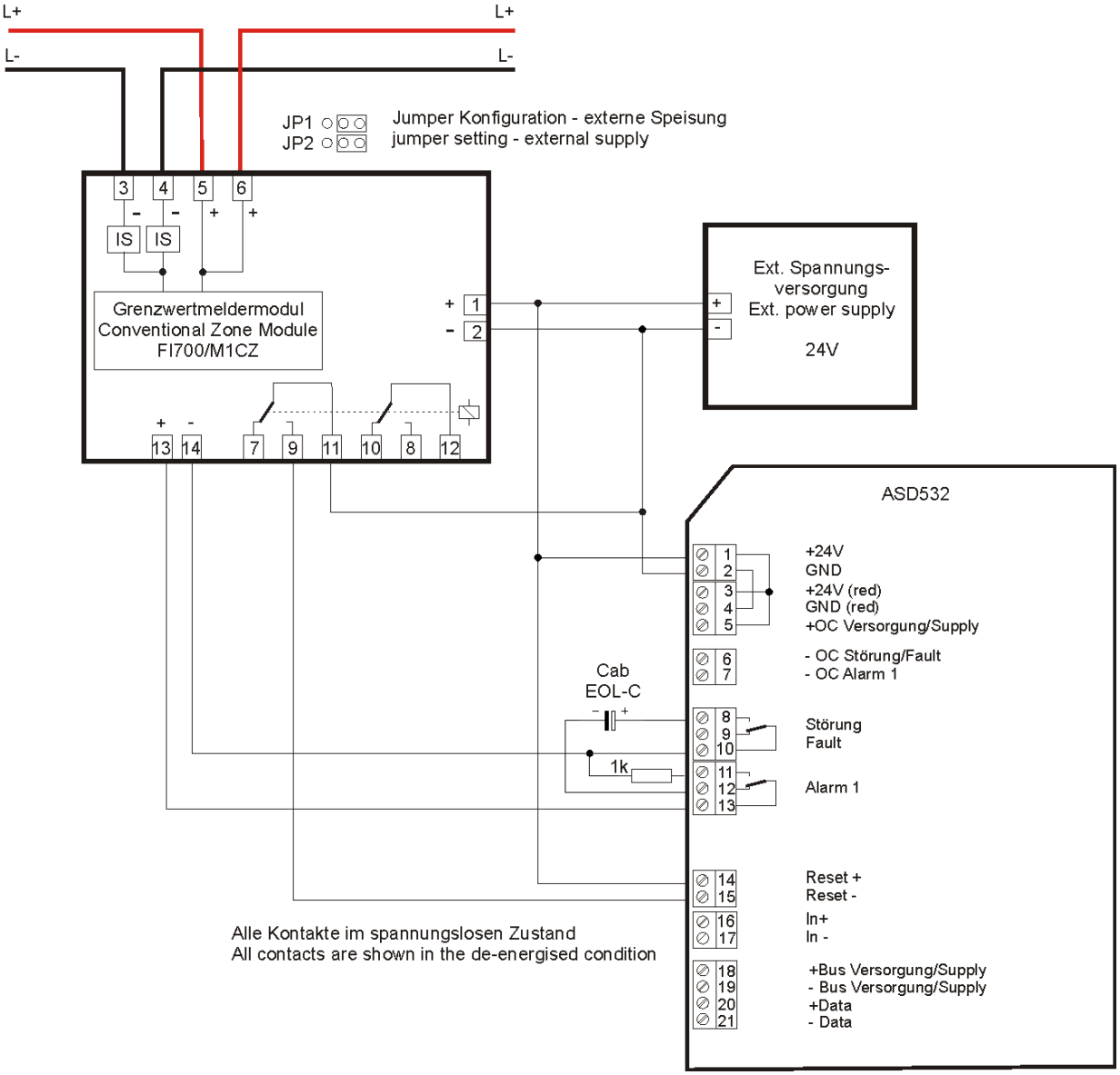


You need a special software for the setup and commissioning of the Smoke Aspiration System Vesda VLF-250 / VLF-500.

The Smoke Aspiration System Vesda VLF-500 has the same terminal configuration as the VLF-250.

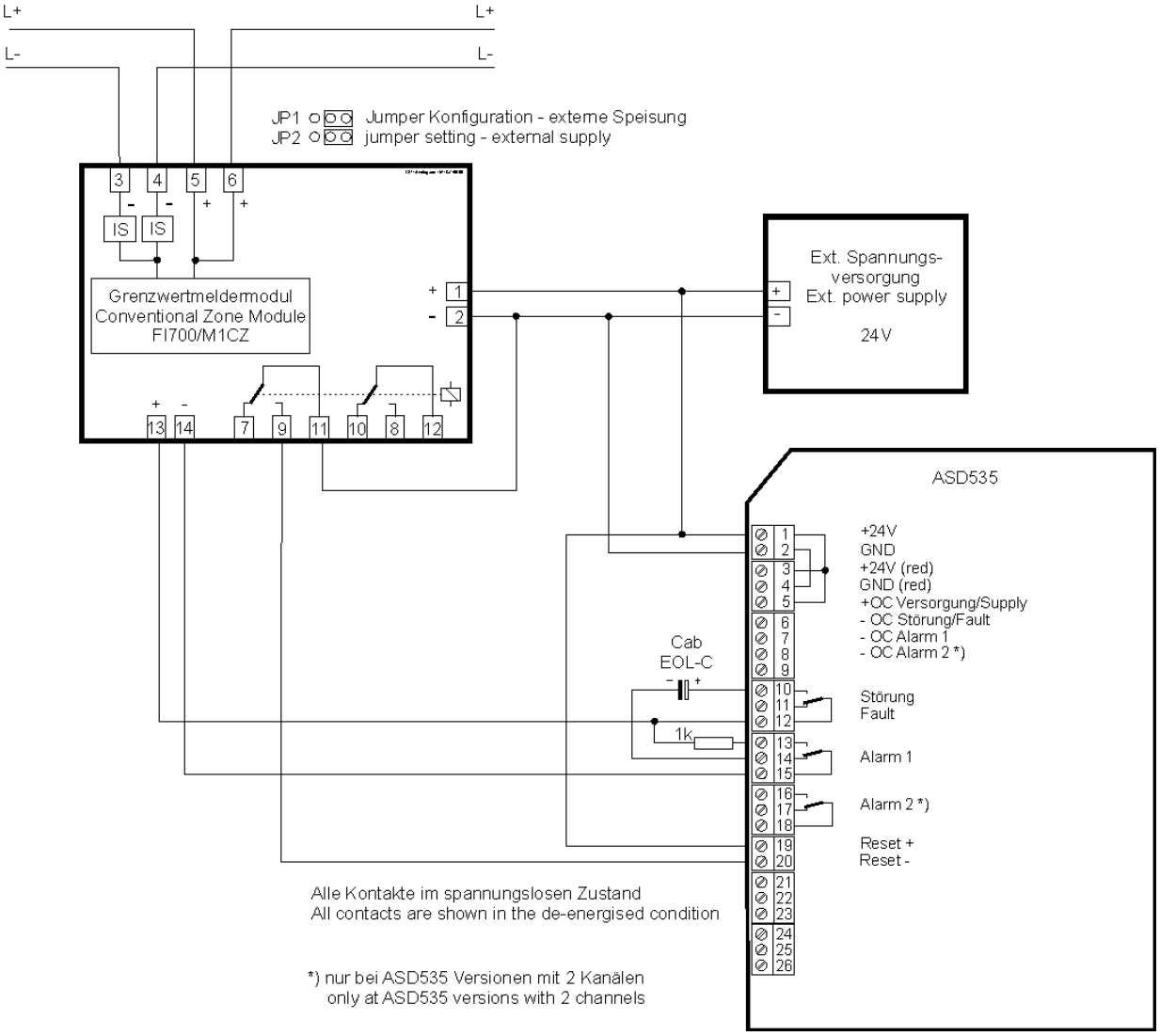
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.60 Smoke Aspiration System ASD532 - FI700/M1CZ



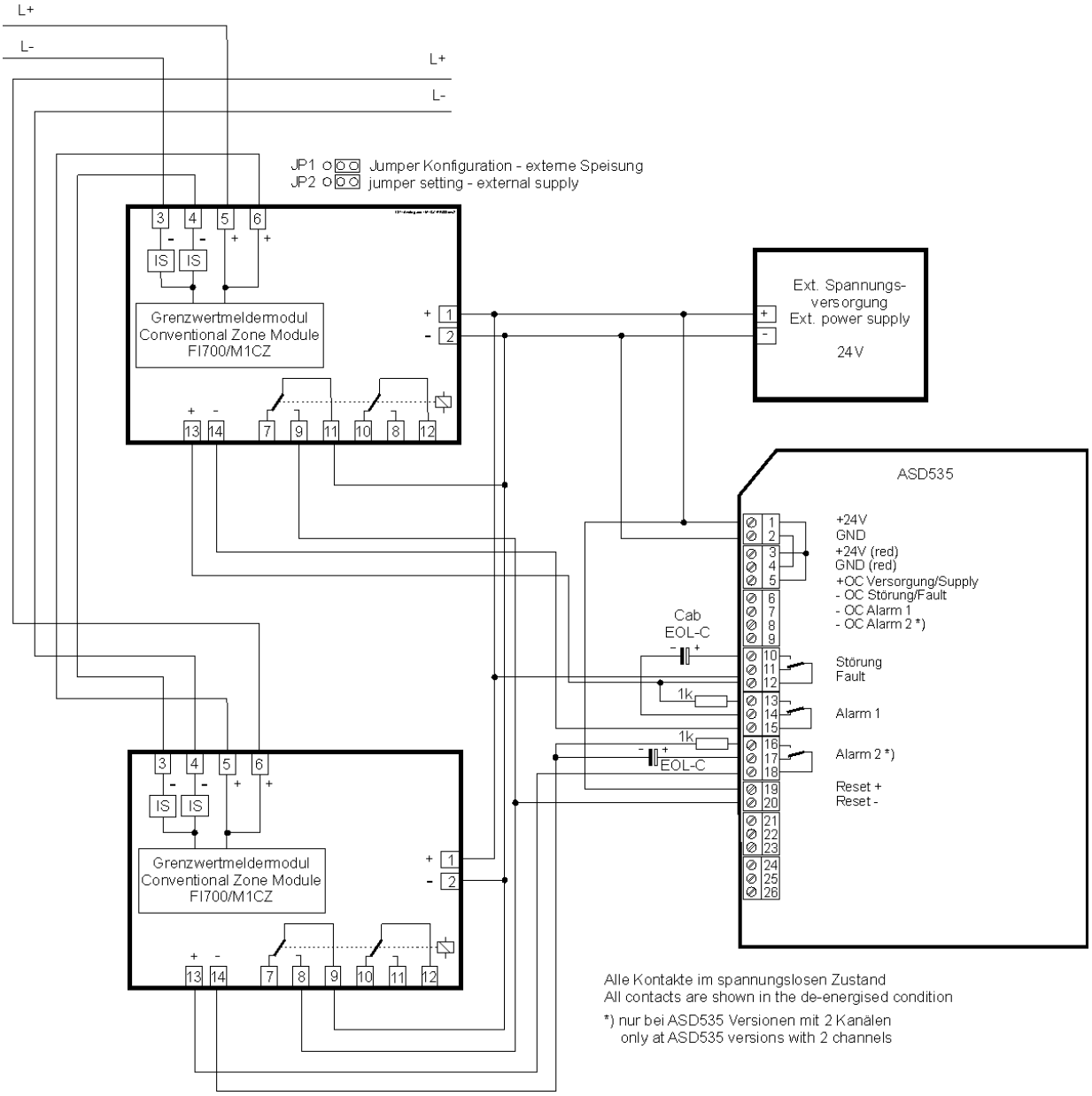
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.61 Smoke Aspiration System ASD535 with one channel - FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

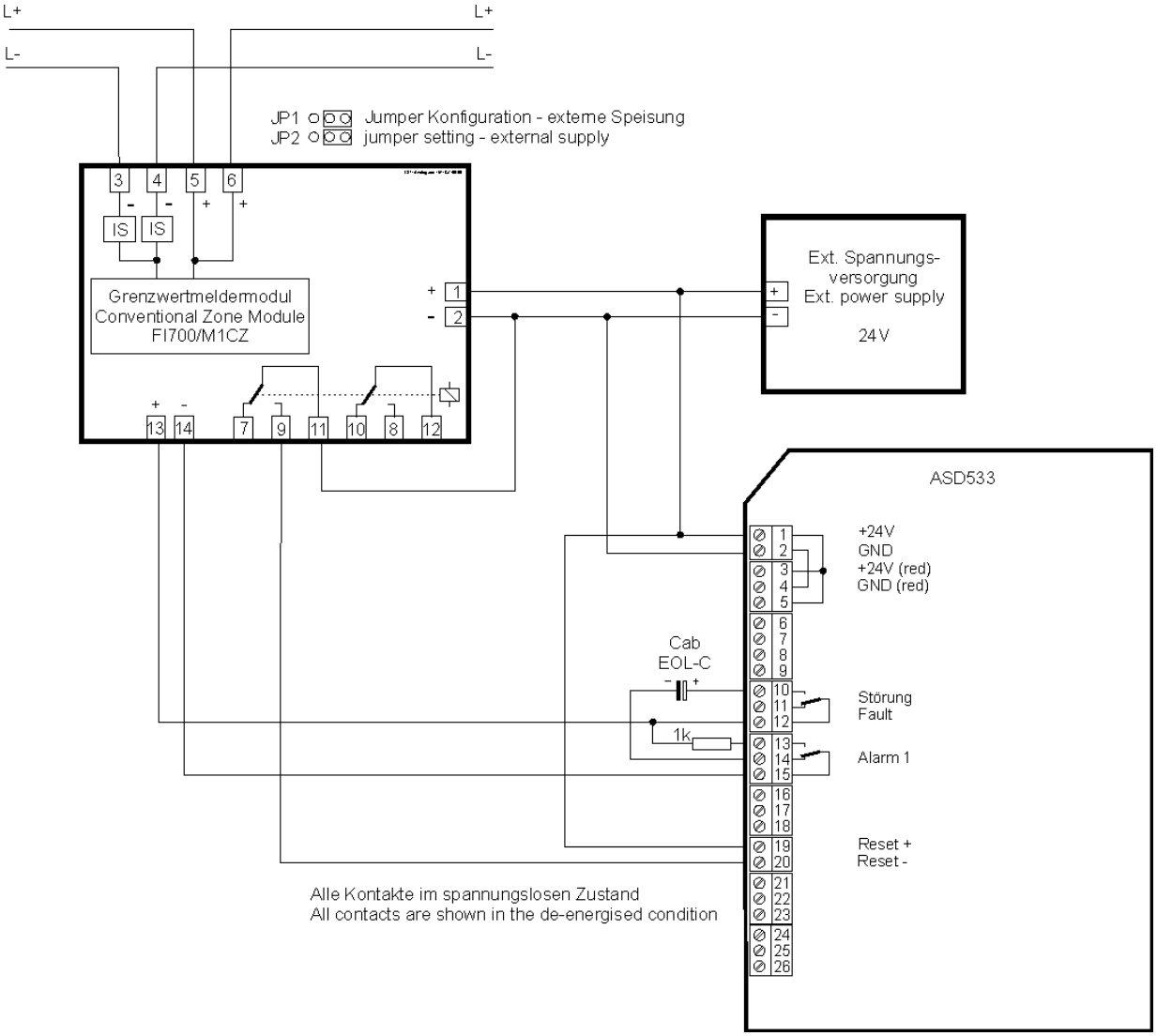
3.8.62 Smoke Aspiration System ASD535 with two channels



For the operation of the aspirating smoke detector on Control Panels Series BC216 and BC600, a firmware from calendar week 12 / 2013 or later is to be used, and the reset output of the conventional zone module is to be set to Pulsed signal. If an older firmware is used, the aspirating smoke detector will be deactivated if one of the two modules is disabled!

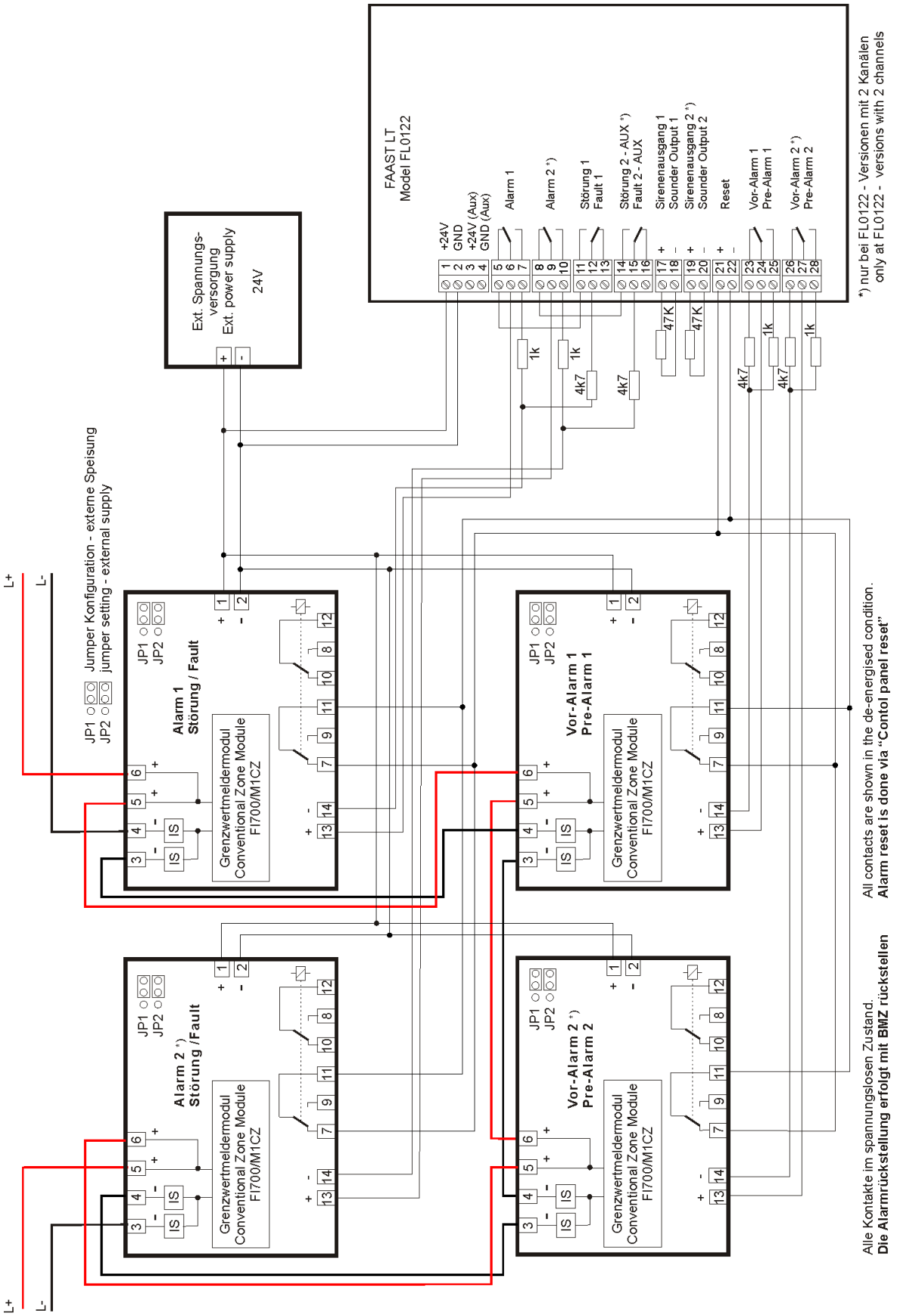
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.63 Smoke Aspiration System ASD533



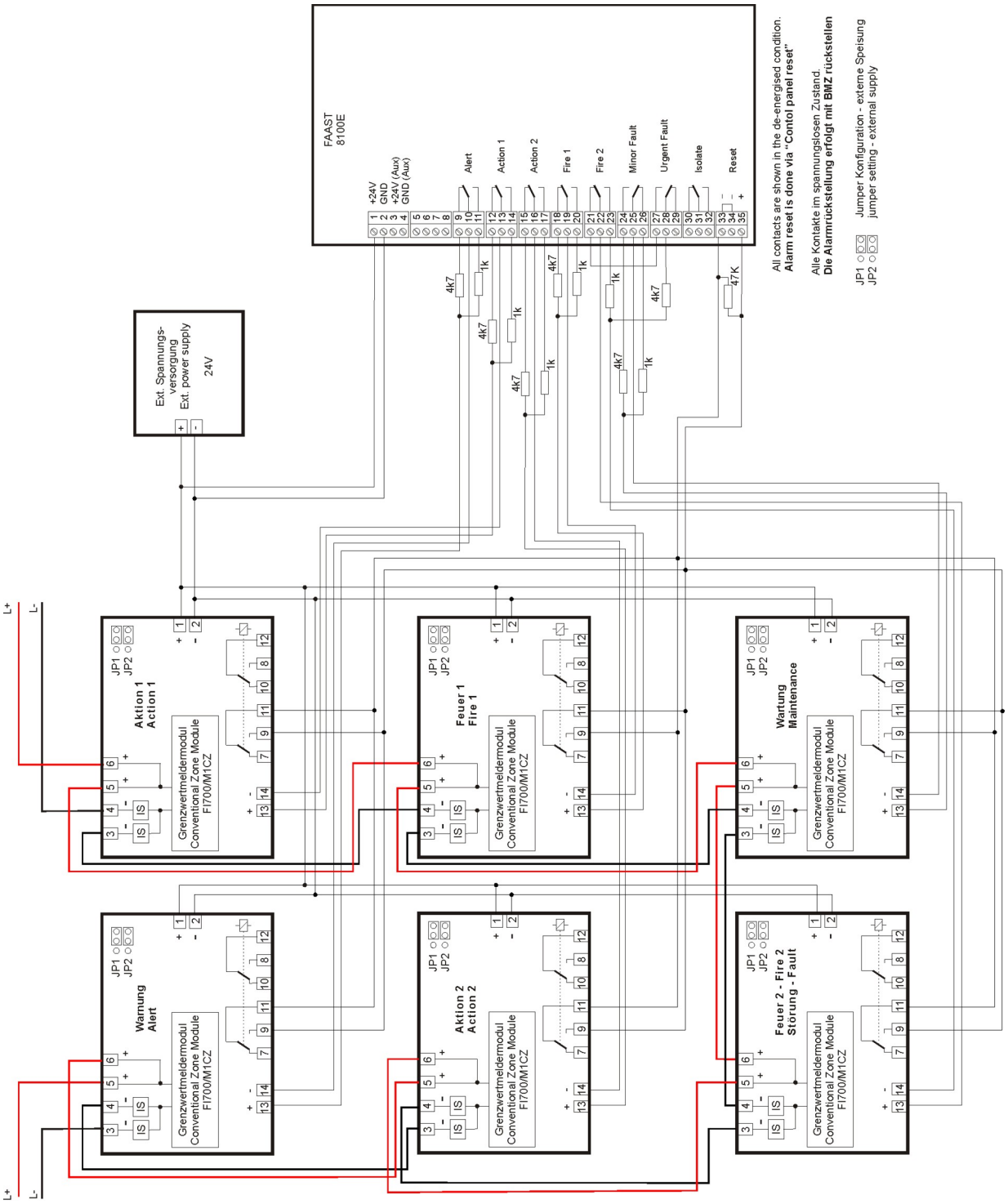
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.64 Smoke Aspiration System FAAST LT – Model FL0122



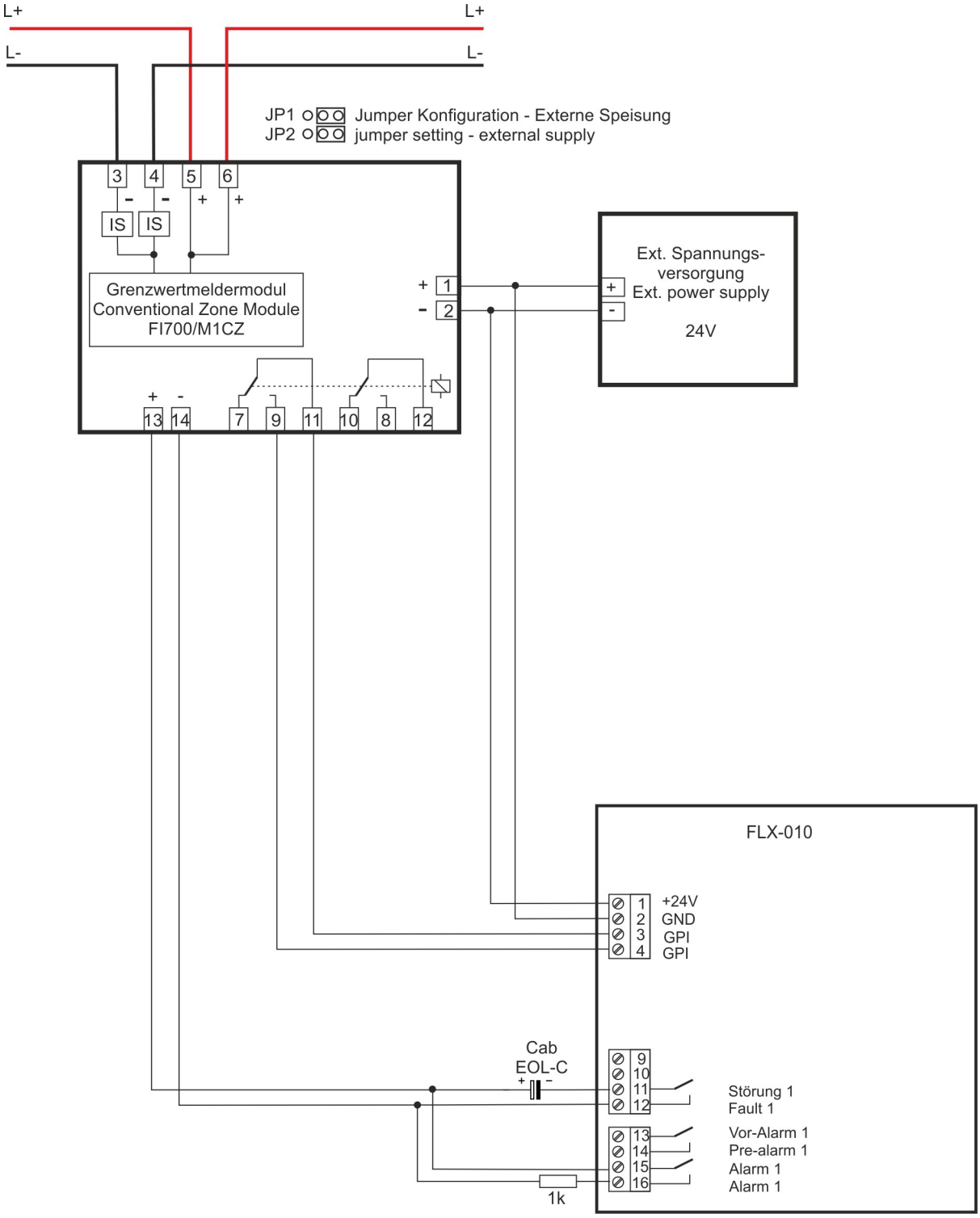
For the operation of the smoke aspiration system on Control Panels Series BC216 and BC600, a firmware from calendar week 12 / 2013 or later is to be used. If an older firmware is used, the smoke aspiration system will be deactivated if one of the two modules is disabled!

3.8.65 Smoke Aspiration System FAAST 8100E



For the operation of the smoke aspiration system on Control Panels Series BC216 and BC600, a firmware from calendar week 12 / 2013 or later is to be used. If an older firmware is used, the smoke aspiration system will be deactivated if one of the two modules is disabled!

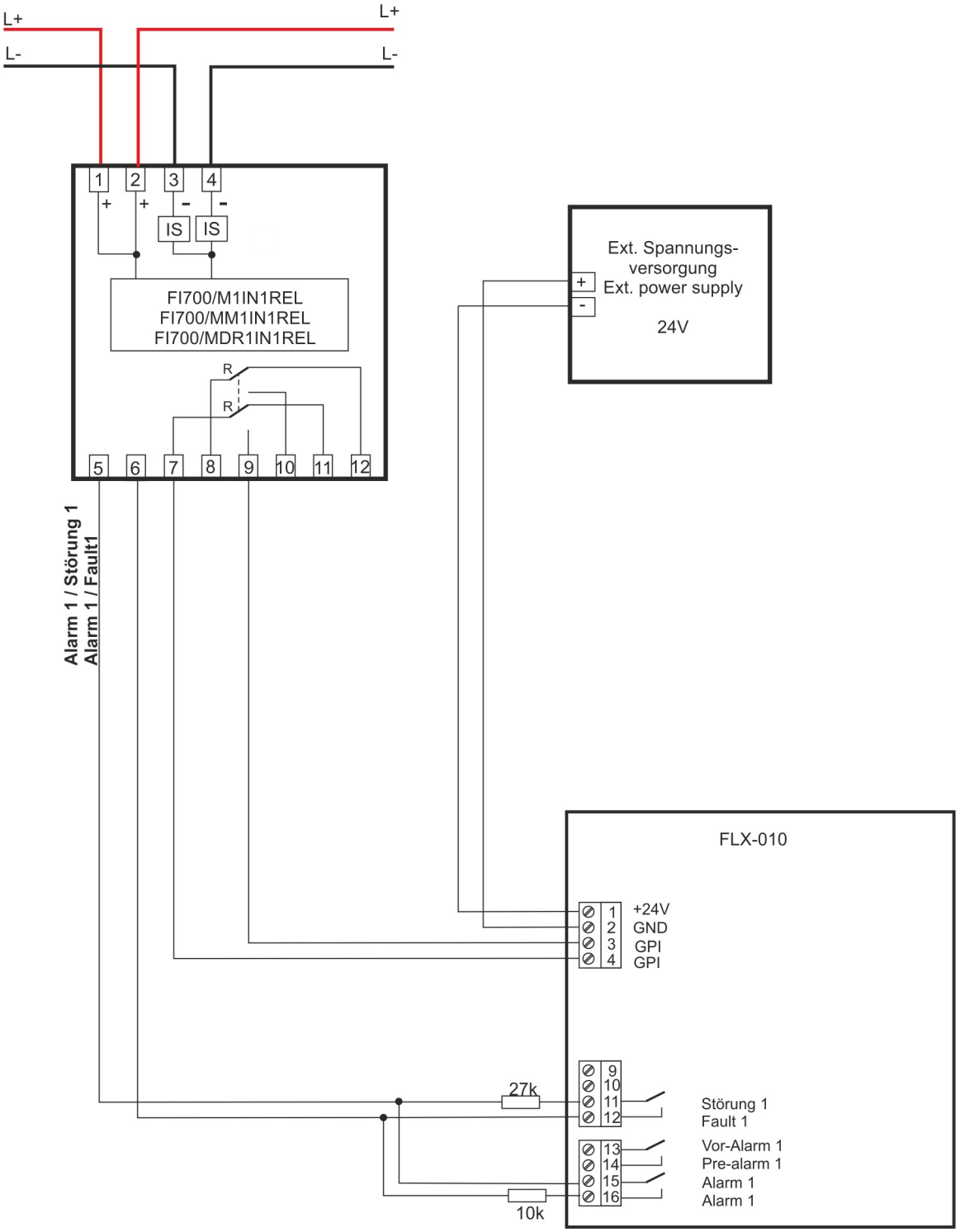
3.8.66 Aspirating smoke detector FLX-010 – FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

According to the installation instructions, the conditions alarm, pre-alarm and fault only allow their property Latched or Unlatched to be set jointly.
If "Latched" has been set, every message must be deleted with a control panel reset.

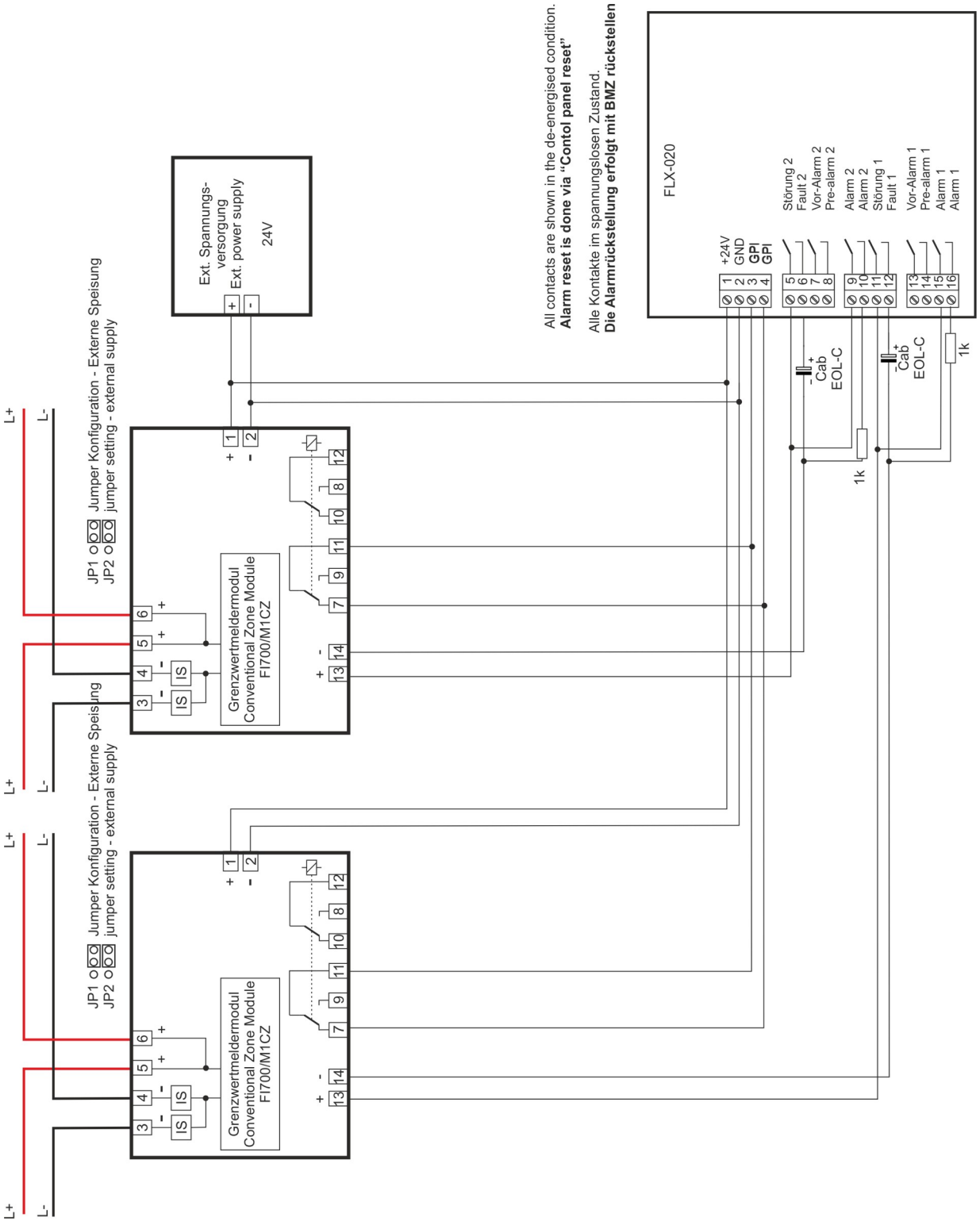
3.8.67 Aspirating smoke detector FLX-010 – FI700/M1IN1REL



According to the installation instructions, the conditions alarm, pre-alarm and fault only allow their property Latched or Unlatched to be set jointly.
If "Latched" has been set, every message must be deleted with a control panel reset.

This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

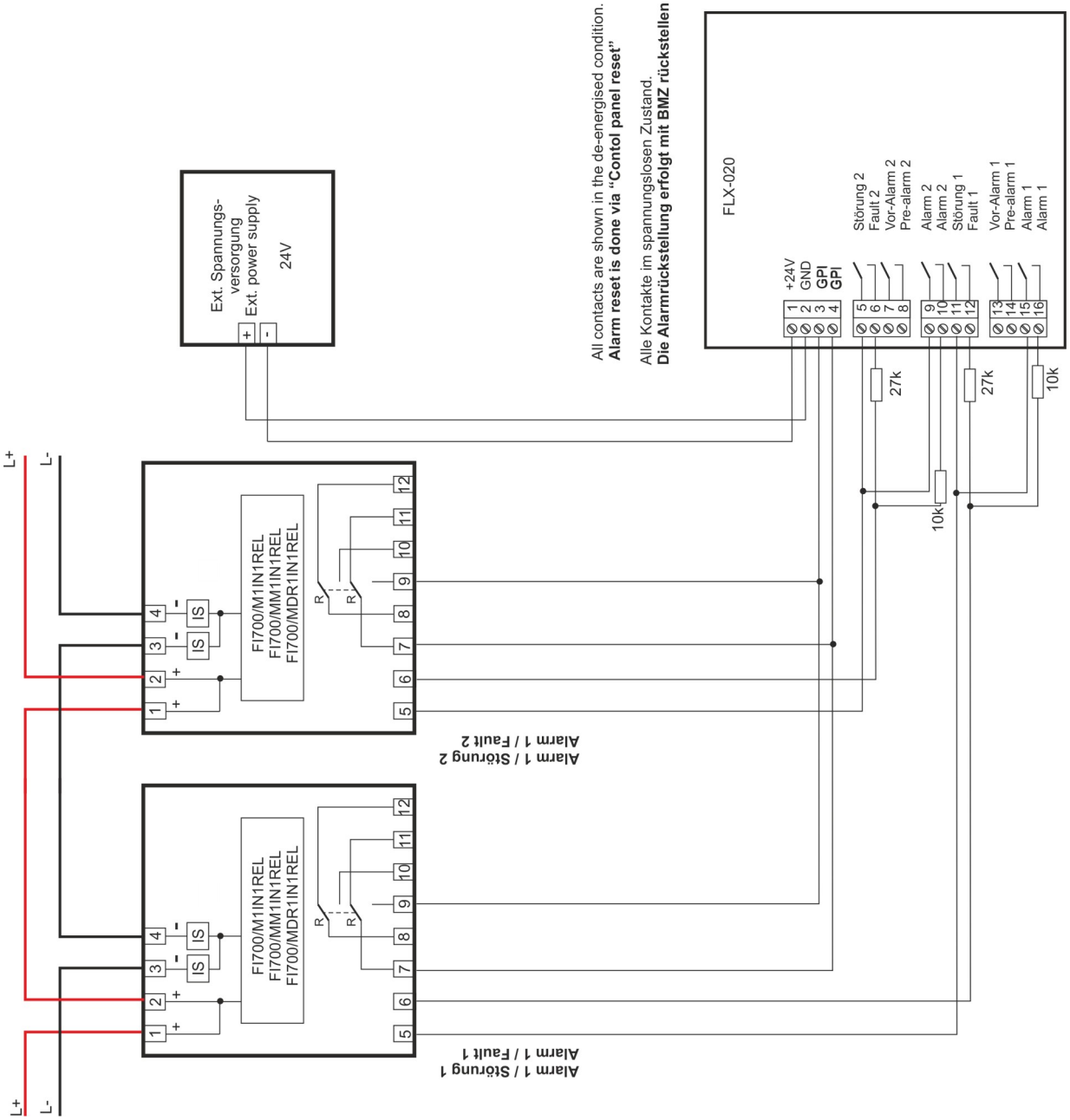
3.8.68 Aspirating smoke detector FLX-020 – FI700/M1CZ



According to the installation instructions, the conditions alarm, pre-alarm and fault only allow their property Latched or Unlatched to be set jointly.
If "Latched" has been set, every message must be deleted with a control panel reset.

This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

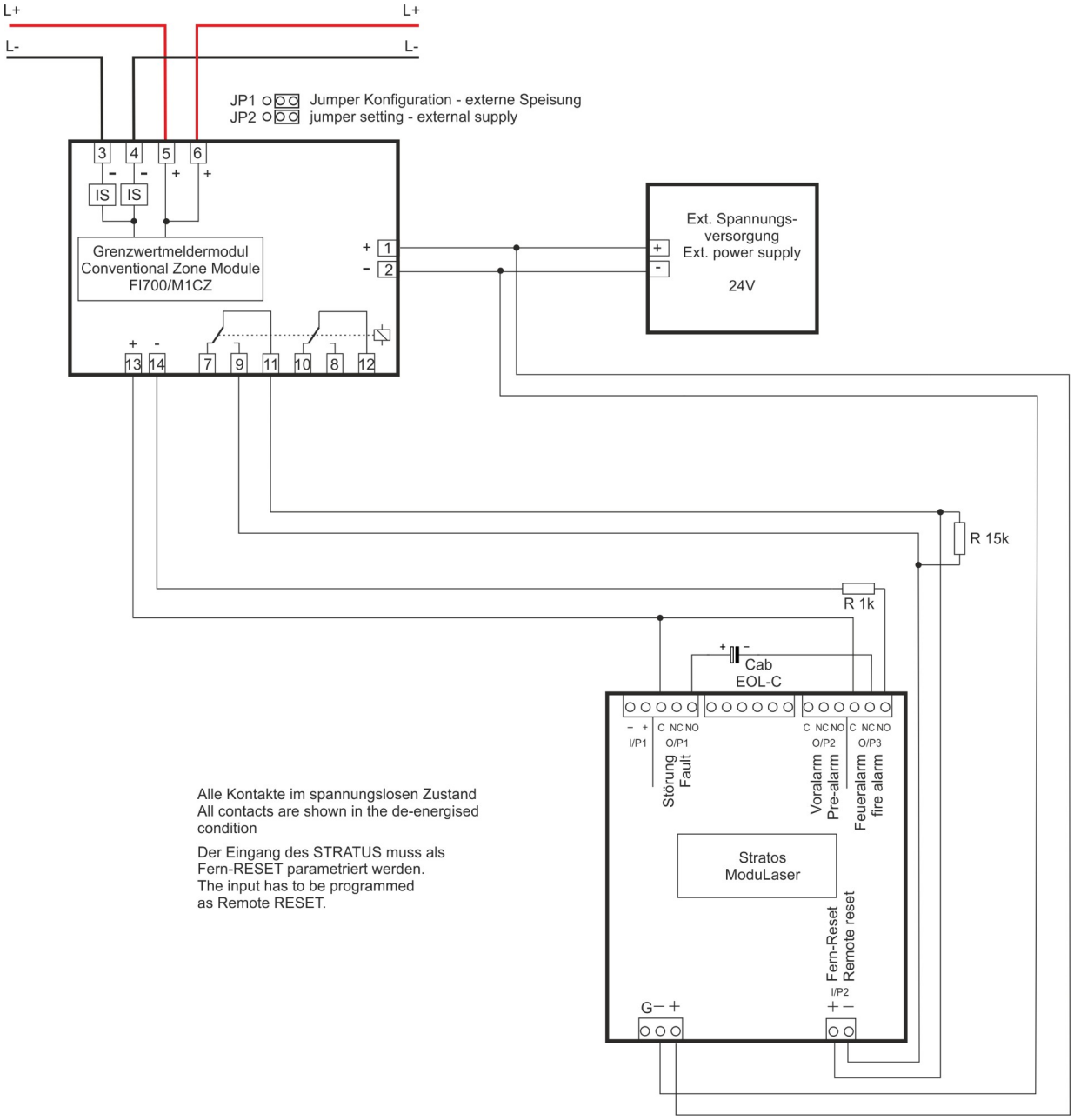
3.8.69 Aspirating smoke detector FLX-020 – FI700/M1IN1REL



According to the installation instructions, the conditions alarm, pre-alarm and fault only allow their property Latched or Unlatched to be set jointly.
If "Latched" has been set, every message must be deleted with a control panel reset.

This connection does not apply to the Fire Detection Control Panels Series BC216. The module output has to be parameterised according to Chapter 3.8.2.4.

3.8.70 Aspirating smoke detector Stratos-ModuLaser - FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

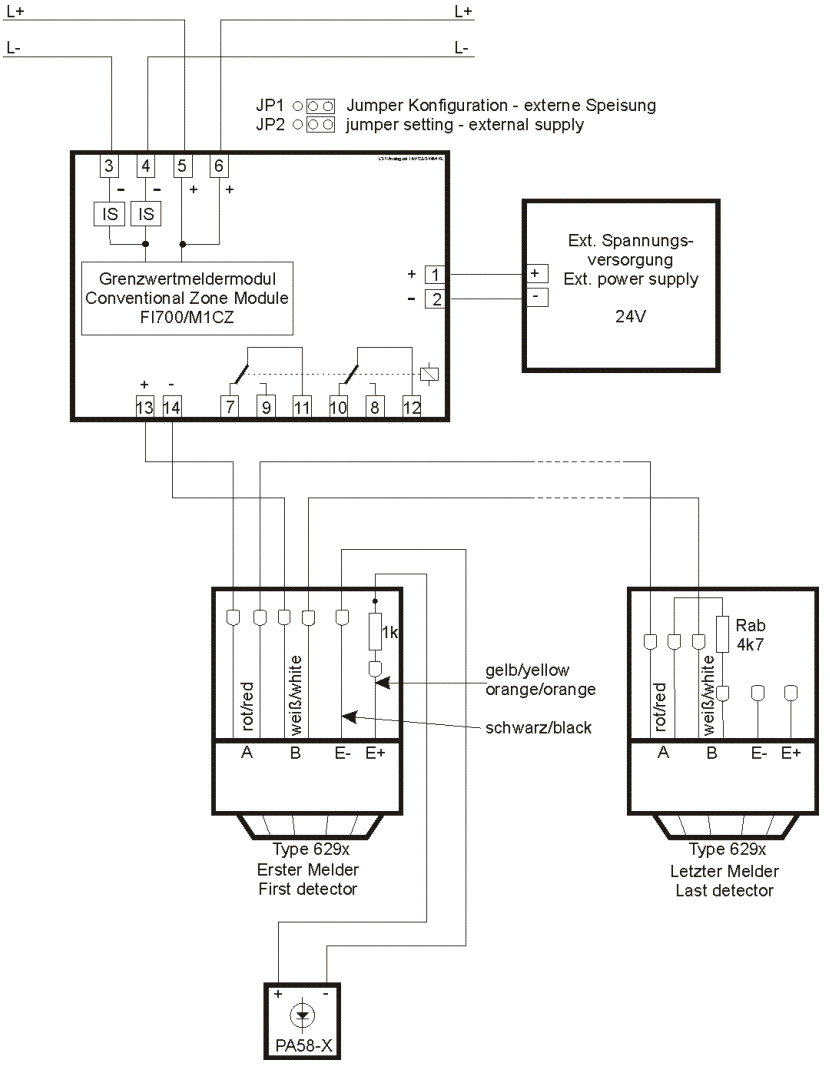
3.8.71 Thermal Detectors 6295, 6296, 6297 and 6298 - FI700/M1CZ

3.8.71.1 Notes

A maximum of 32 detectors 629x may be connected to a conventional zone interface.

Type	EN 54-5 Class
6295	57°C – A2S
6296	72°C – B2
6297	87°C – CS
6298	117°C – ES

3.8.71.2 Connection



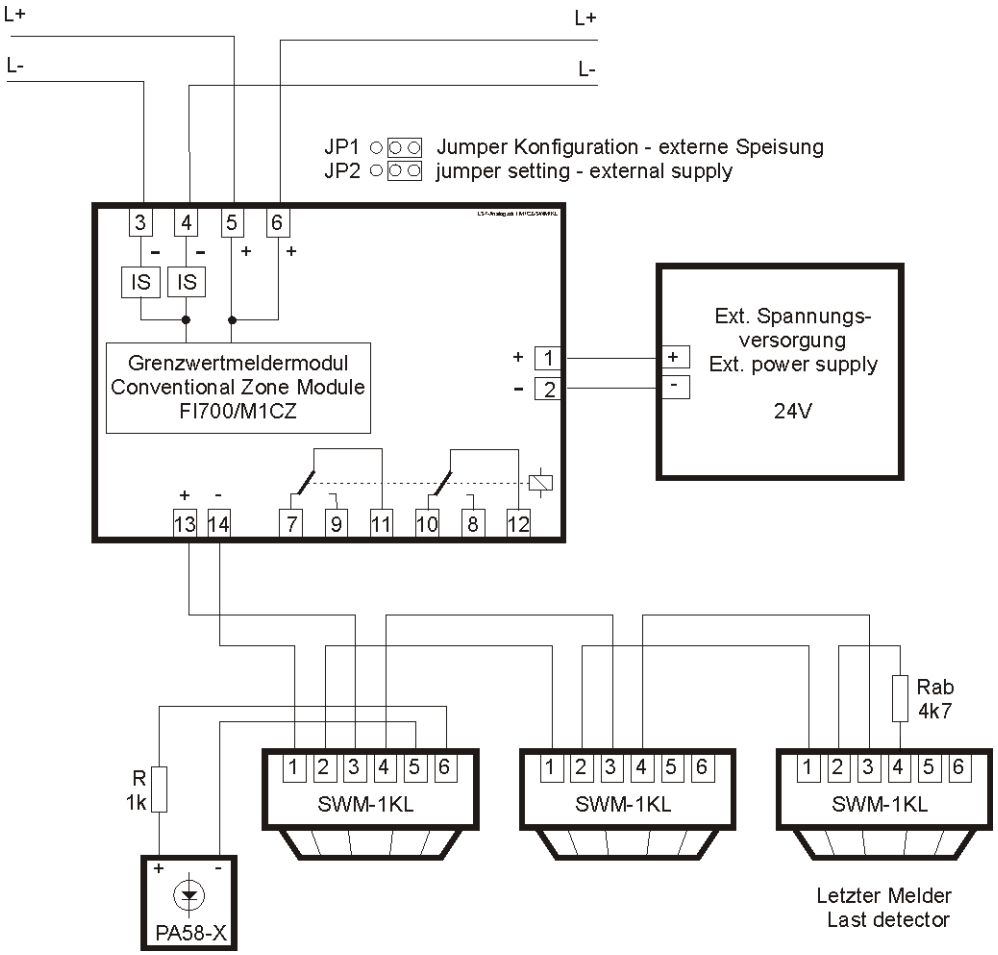
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

Make sure that the temperature resistance of the connection cable is sufficient.

3.8.72 Thermal Max Detector SWM-1KL - FI700/M1CZ

A maximum of 3 detectors SWM-1KL can be connected to a conventional zone module.

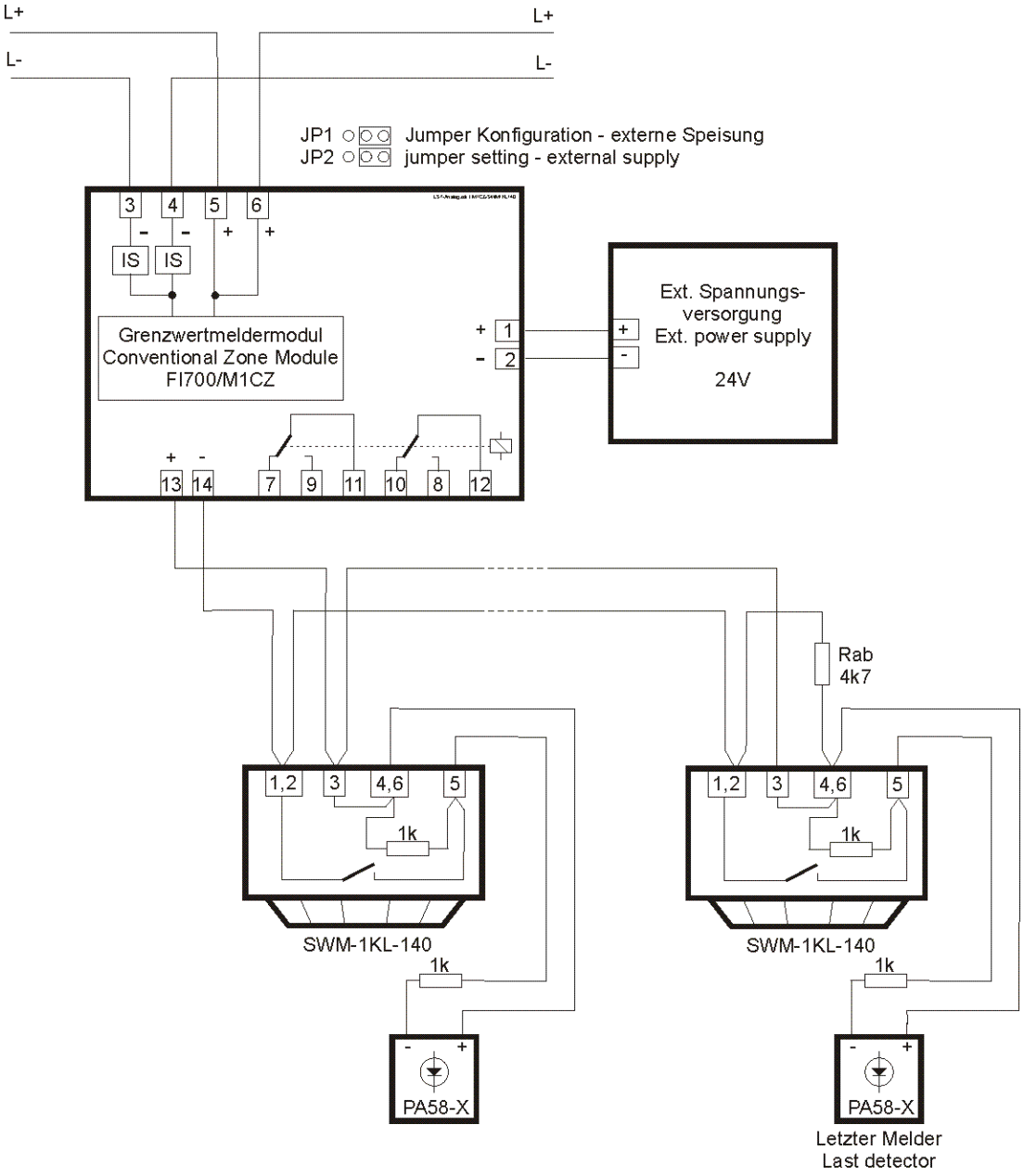
This drawing applies to the 57, 80 and 100°C version.



If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

Make sure that the temperature resistance of the connection cable is sufficient.

3.8.73 Thermal Max Detector SWM-1KL-140 - FI700/M1CZ



If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

Make sure that the temperature resistance of the connection cable is sufficient.

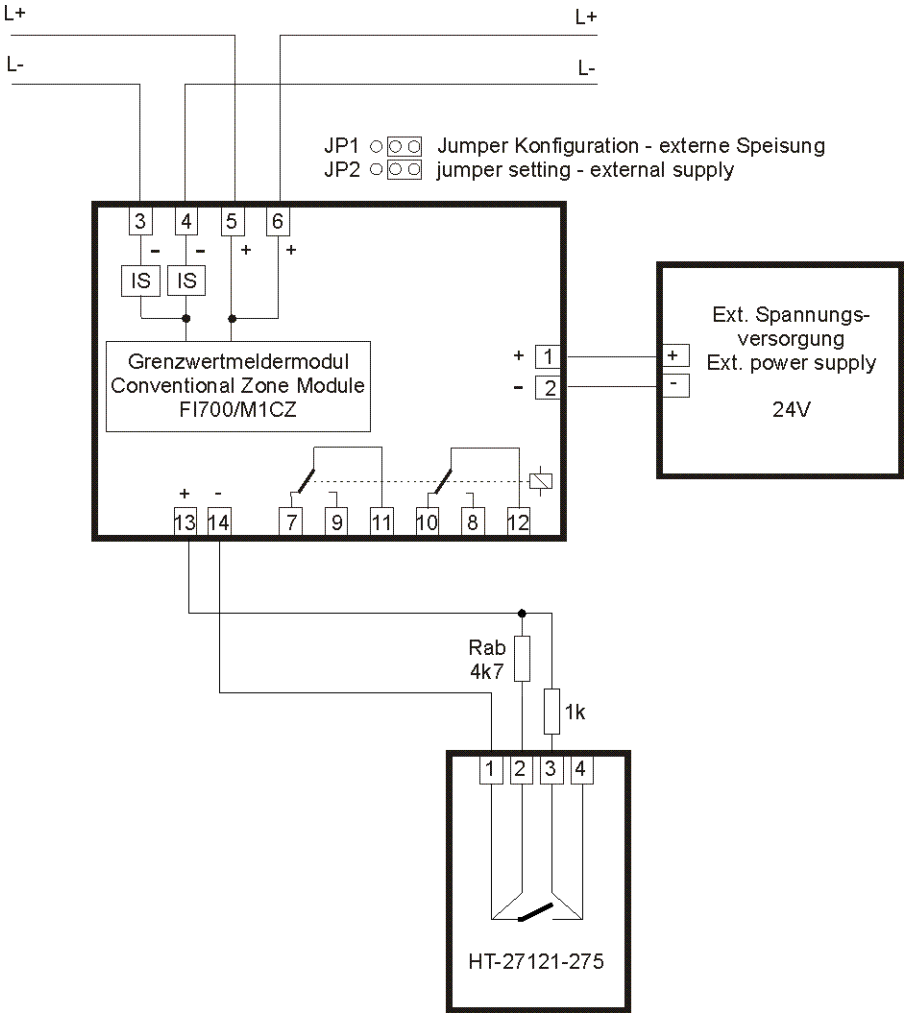
3.8.74 Thermal Max Detector HT-27121-275 - FI700/M1CZ

The number of detectors of a zone is not limited since only a thermally controlled, normally open contact (bimetallic strip) is used. (Quiescent current of the detector = 0 mA).

This detector activates at 135°C (275°F) and does not have a light emitting diode.

This connection also applies analogously to the following detectors, because they also do not have a light emitting diode.

Type	Alarm temperature
27121-0-225	107°C
27121-0-275	135°C
27121-0-325	162°C
27121-0-360	182°C
27121-0-450	232°C
27121-0-600	315°C
27121-0-725	385°C

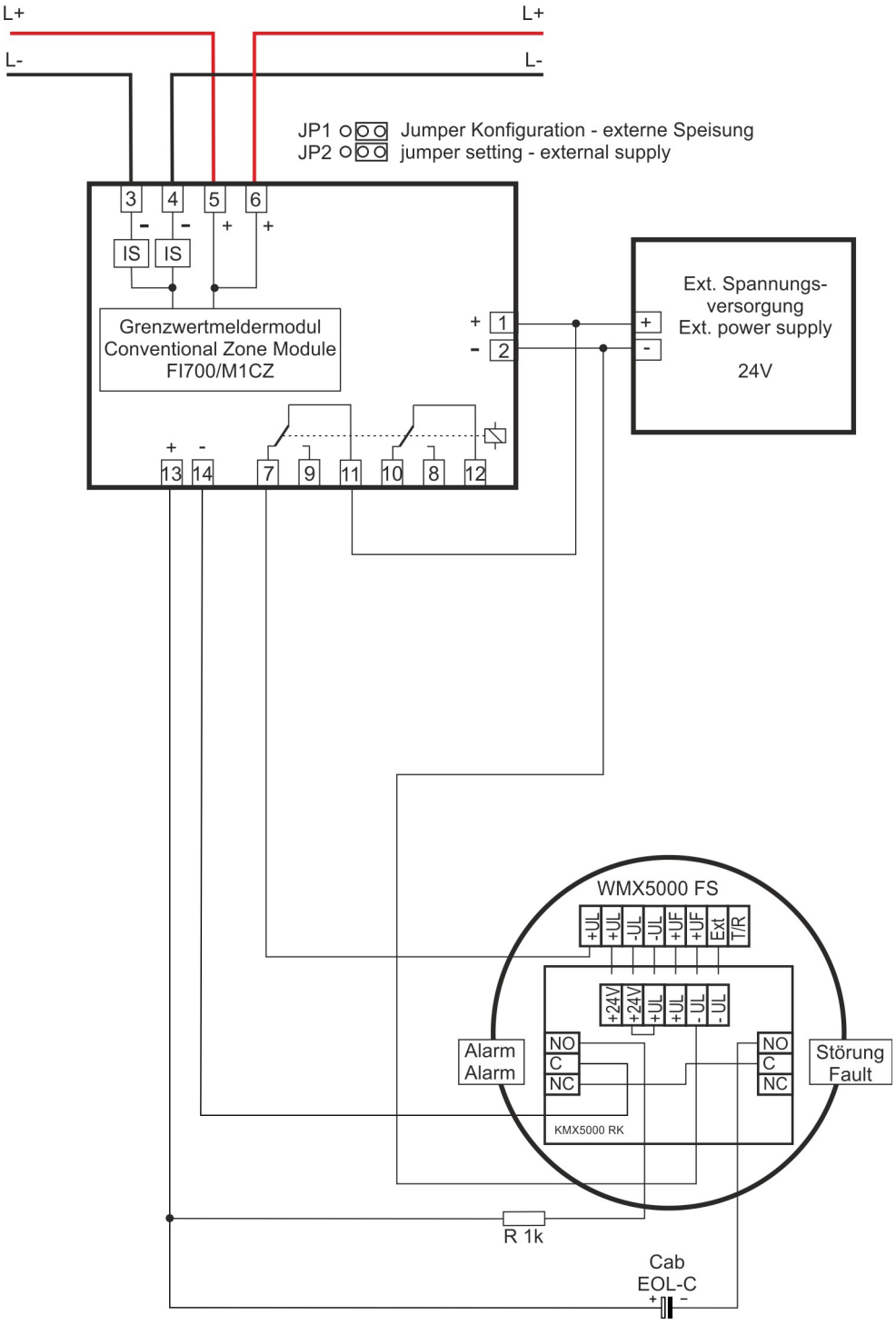


If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

Make sure that the temperature resistance of the connection cable is sufficient.

3.8.75 Thermo-Maximal-Melder WMX5000 FS - FI700/M1CZ

This detector may only be used together with the Relay Module KMX5000 RK.



If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

The reset input T/R must not be used.
Make sure that the connection cable is sufficiently temperature-resistant.

3.9 Connection of contact detectors with monitor modules

By means of monitor modules, contact detectors (e.g., sprinkler contacts, monitoring contacts) can be connected to the fire detection control panel.

3.9.1 Address setting

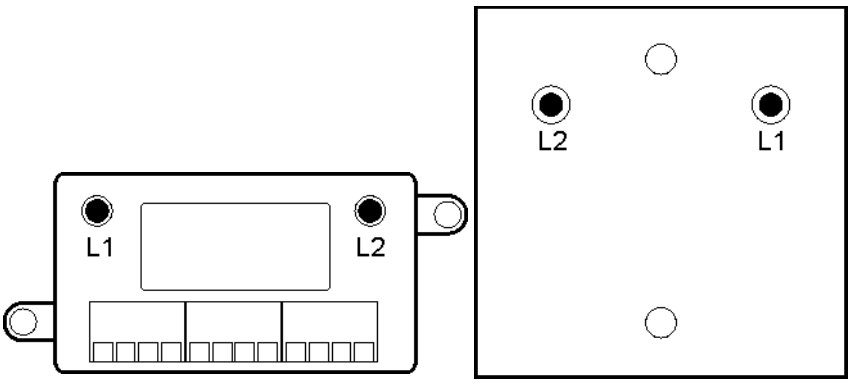
Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements".

3.9.2 Monitor Modules FI700/M1IN, FI700/MM1IN or FI700/MDR1IN

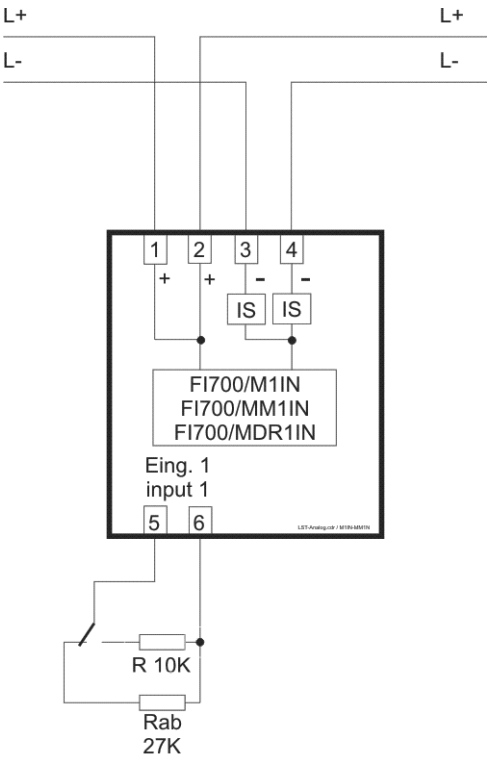
These modules have one supervised input, an integrated isolator and they use one address on the loop.

3.9.2.1 Function of the LED

L1 indicates the condition of the input. It blinks RED in case of activation and illuminates YELLOW in the event of a fault.



3.9.2.2 Connection of the modules FI700/M1IN, FI700/MM1IN, FI700/MDR1IN

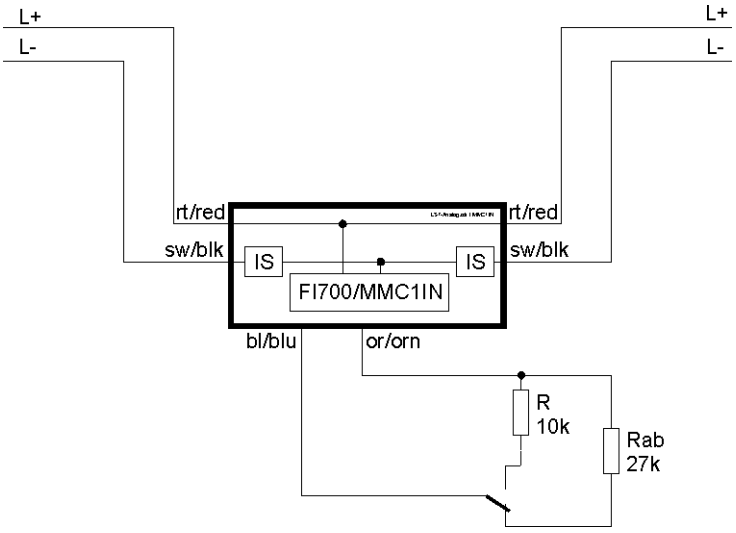


3.9.3 Monitor Module FI700/MMC1IN

This module has one supervised input and an integrated isolator. It uses one address on the loop.

3.9.3.1 Connection

This module has no LED for the indication of its status.



3.10 Control modules

The control modules Series FI700 are each available in two different versions:

- with one supervised output
- with one none-supervised relay output with two separate contacts.

3.10.1 Control modules with supervision

The Control Modules FI700/M1OUT, FI700/MM1OUT and FI700/MDR1OUT are used for the activation of external line-monitored devices (fire controls, acoustical alarming devices, remote indicators, etc.).

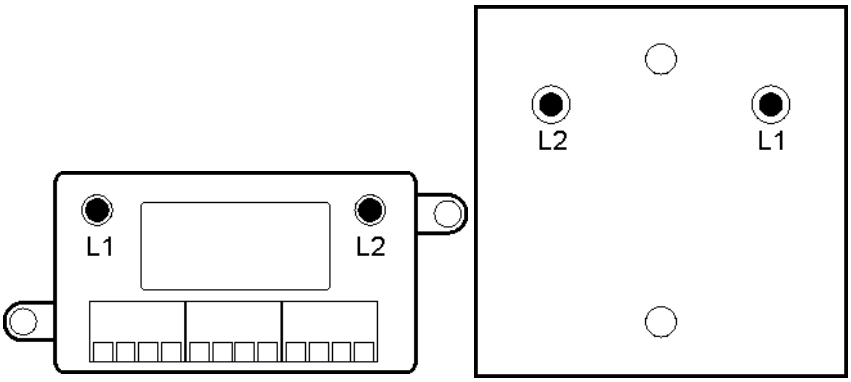
The devices mentioned above must not be powered by the detector circuit (loop). An additional power supply with appropriate power is therefore required!

If the module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

The output of the modules is line-monitored and a bi-coloured LED indicates the condition of the output.

3.10.1.1 Function of the LED

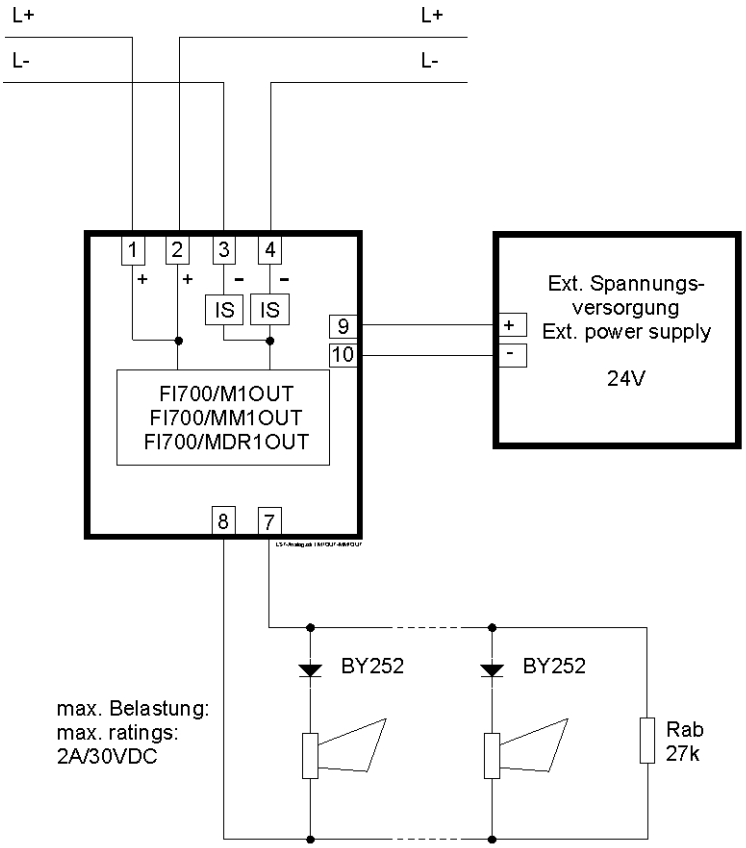
L2 indicates the condition of the output. It illuminates GREEN in case of activation and illuminates YELLOW in the event of a fault (monitored output).



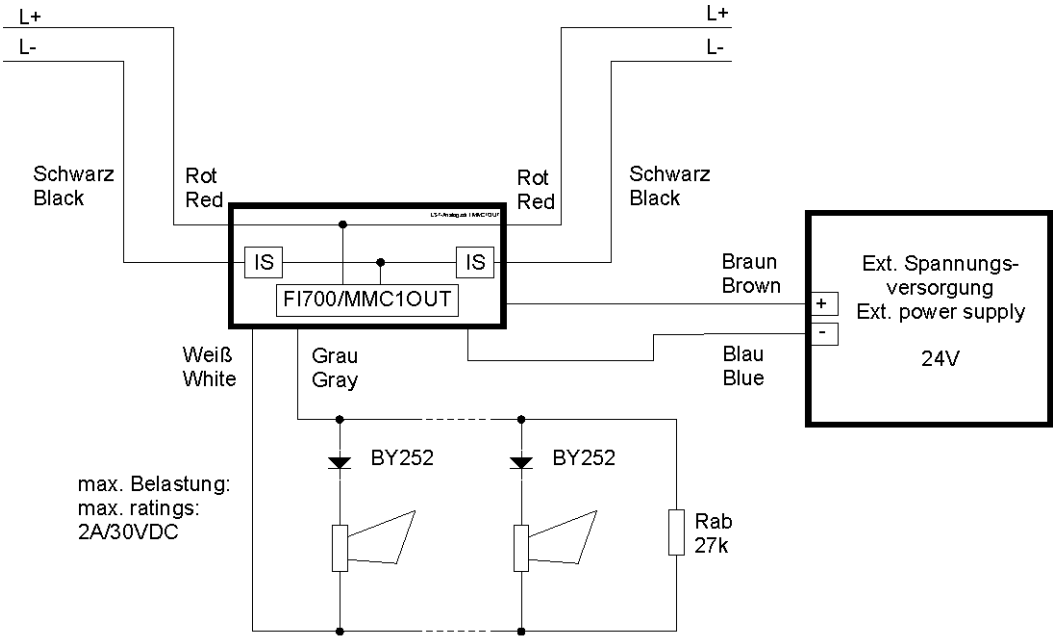
3.10.1.2 Address setting

Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements".

3.10.1.3 Connection of sirens with FI700/M1OUT, FI700/MM1OUT, FI700/MDR1OUT

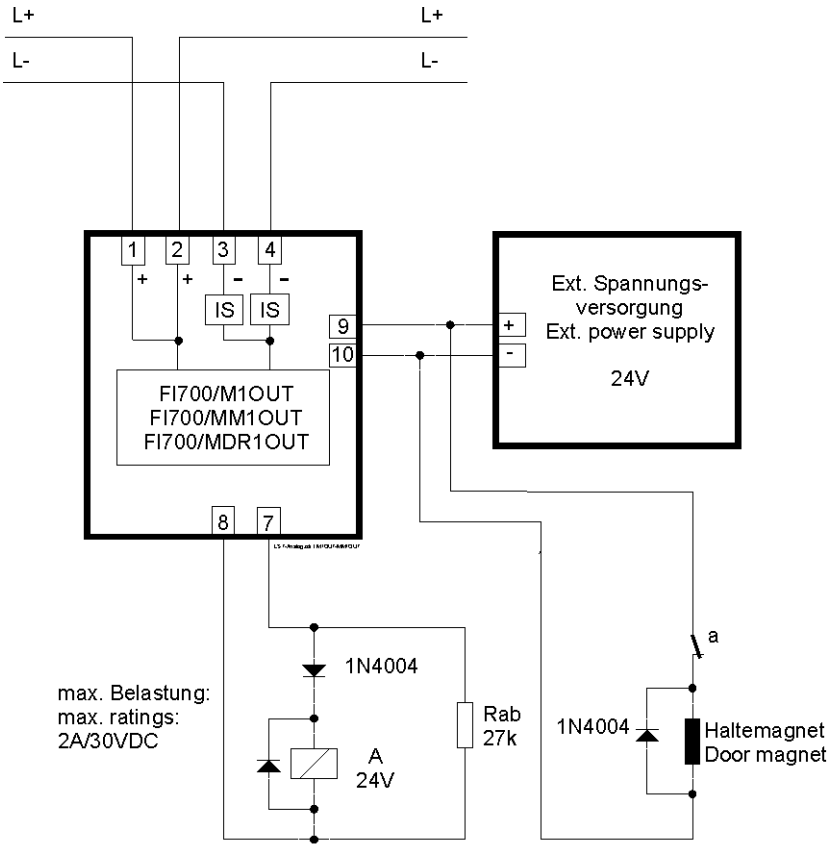


3.10.1.4 Connection of sirens with FI700/MMC1OUT



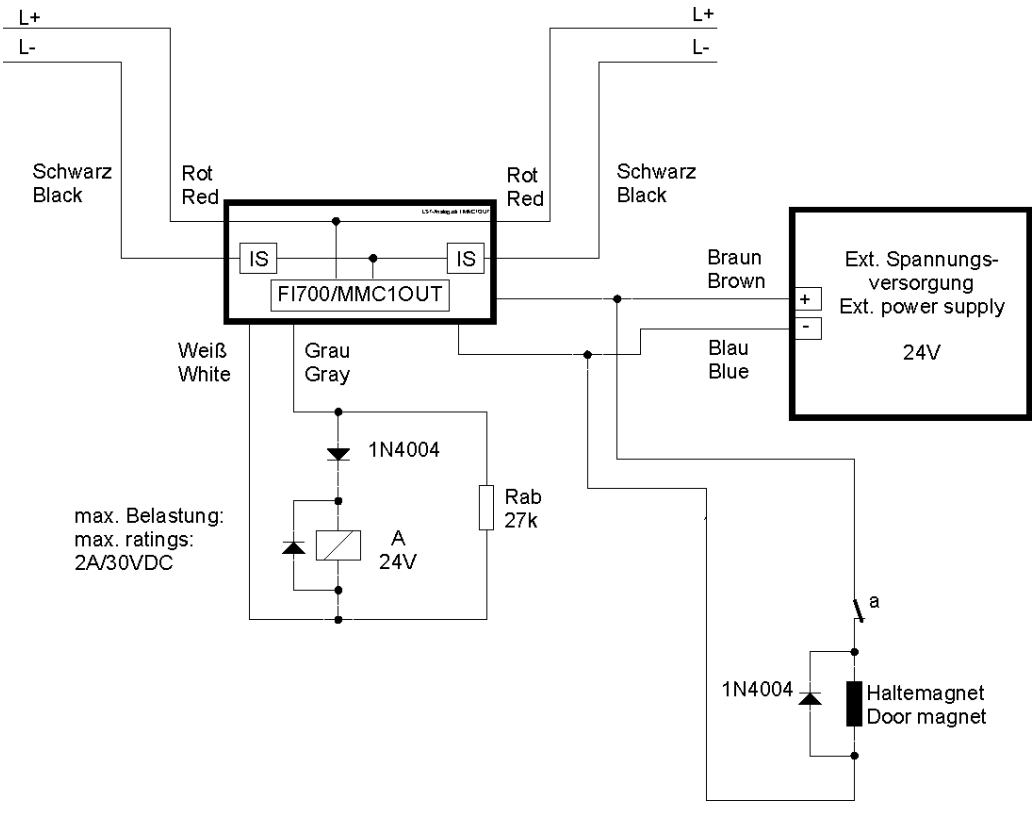
3.10.1.5 Connection of door magnets with FI700/M1OUT, FI700/MM1OUT, FI700/MDR1OUT

The maximum power consumption of the connected devices is only limited by the output power of the additional power supply and the switching capability of the control relay "A".



3.10.1.6 Connection of door magnets with FI700/MMC1OUT

This module has no LED for the indication of its status.



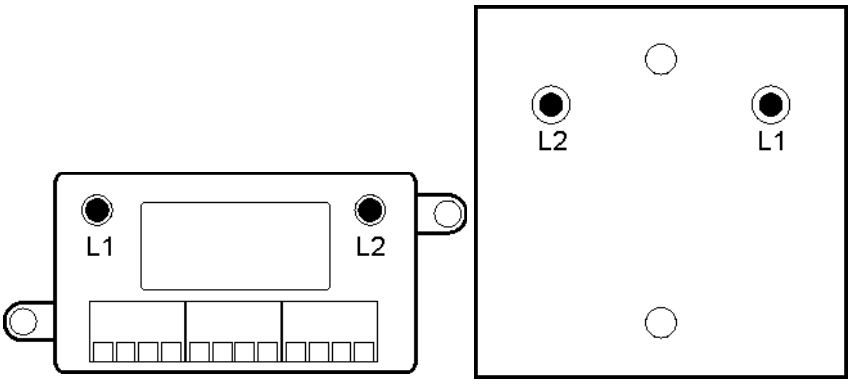
3.10.2 Control modules with relay output

3.10.2.1 Address setting

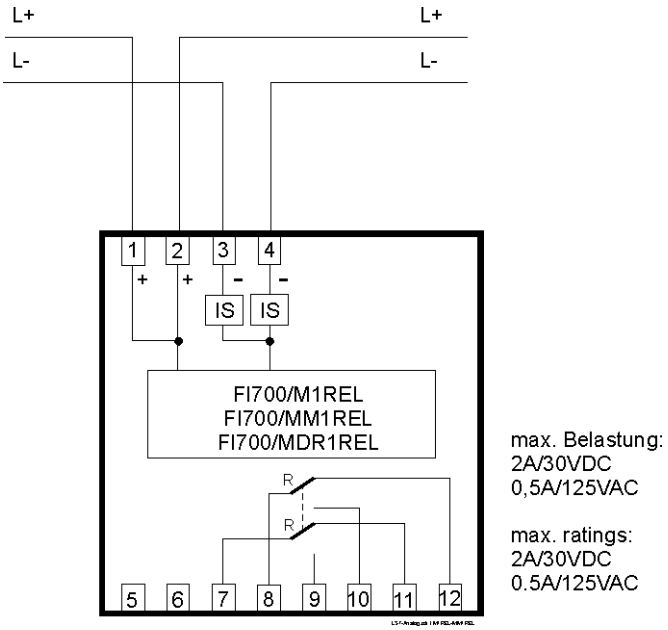
Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements".

3.10.2.2 Function of the LED

L2 indicates the condition of the output. It illuminates GREEN in case of activation.



3.10.2.3 Connection of Control Modules FI700/M1REL, FI700/MM1REL, FI700/MDR1REL

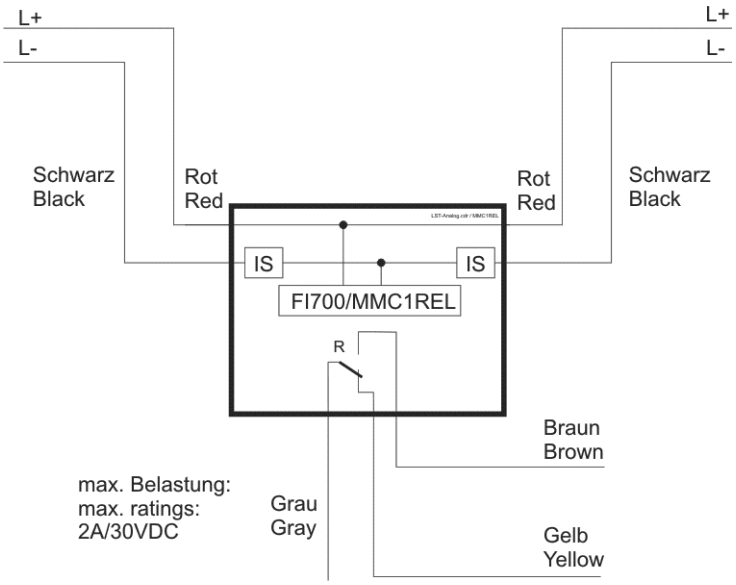


max. Belastung:
2A/30VDC
0,5A/125VAC

max. ratings:
2A/30VDC
0.5A/125VAC

3.10.2.4 Connection of Control Module FI700/MMC1REL

This module has no LED for the indication of its status.



3.11 Combi modules

Depending on the model, these modules can have a different number of inputs and outputs. Each input or output occupies a separate address.

3.11.1 Combi modules with one (1) supervised input and one (1) supervised output

3.11.1.1 Address setting

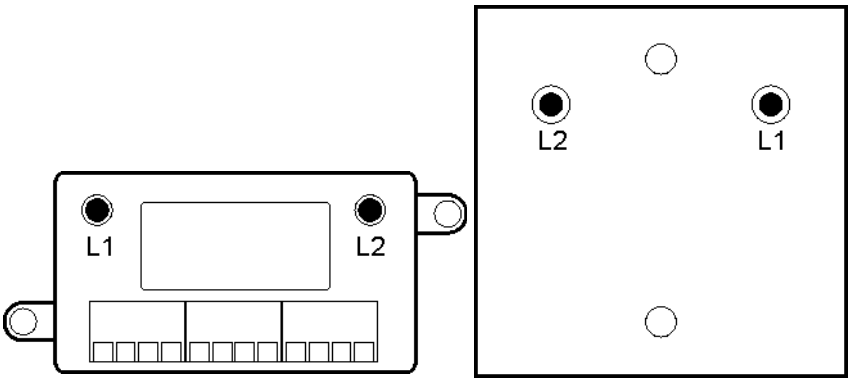
Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements". The input and the output occupy a separate address.

The preset address refers to the input. The output occupies the next higher address.
Input = X; Output = X+1.

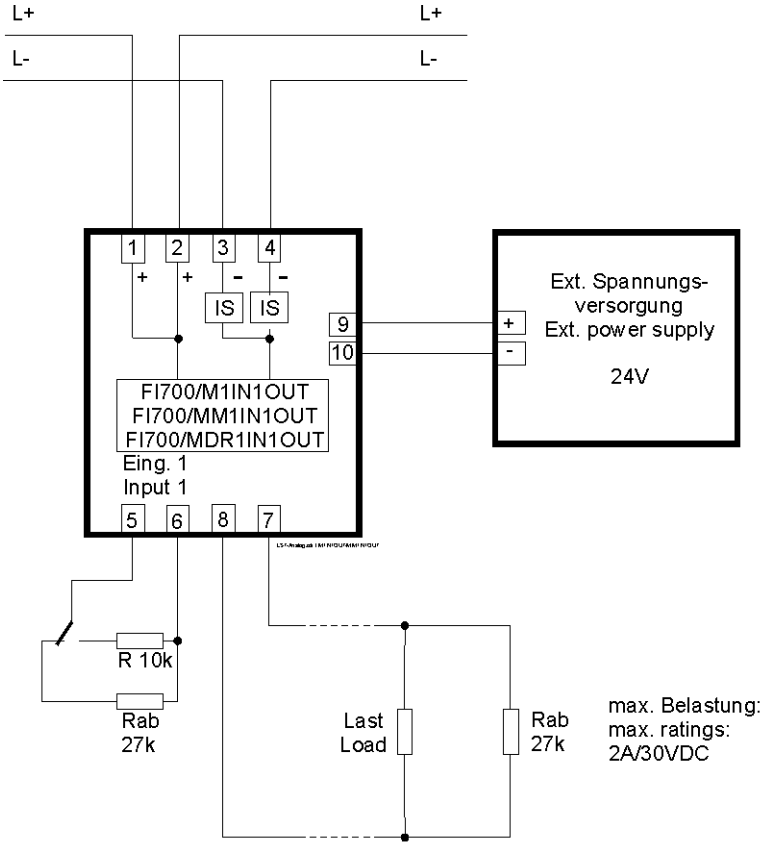
3.11.1.2 Function of the LEDs

L1 indicates the condition of the input. It blinks RED in case of activation and illuminates YELLOW in the event of a fault.

L2 indicates the condition of the output. It illuminates GREEN in case of activation and illuminates YELLOW in the event of a fault (monitored output).



3.11.1.3 Connection of Combi Modules FI700/M1IN1OUT, FI700/MM1IN1OUT, FI700/MDR1IN1OUT



3.11.2 Combi module with one (1) supervised input and one (1) relay output

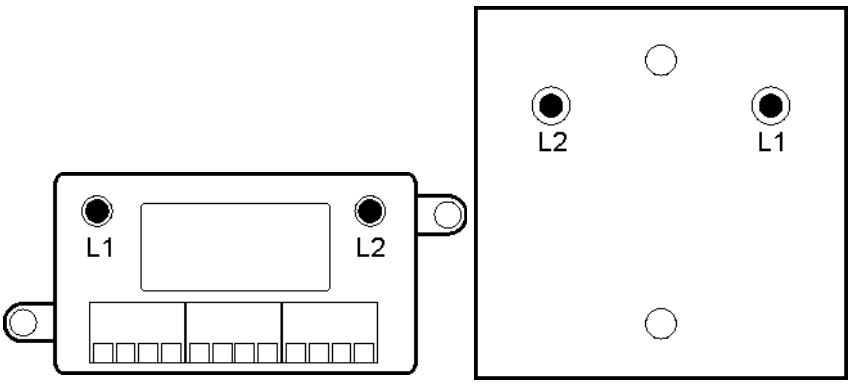
3.11.2.1 Address setting

Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements". The input and the output occupy separate addresses. Both relay contacts will be activated simultaneously.

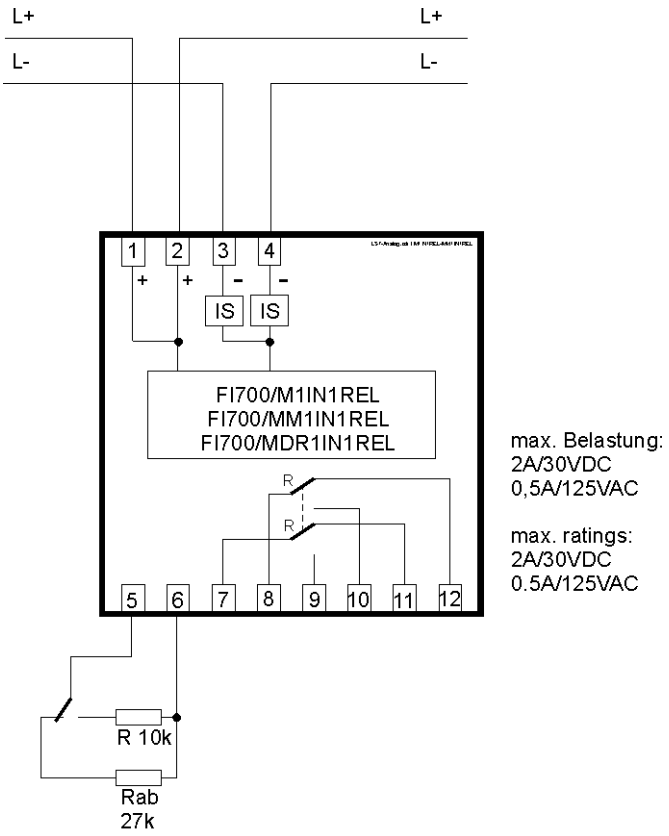
The preset address refers to the input. The output occupies the next higher address.
Input = X; Output = X+1.

3.11.2.2 Function of the LEDs

L1 indicates the condition of the input. It blinks RED in case of activation and illuminates YELLOW in the event of a fault.
L2 indicates the condition of the output. It illuminates GREEN in case of activation.



3.11.2.3 Connection of Combi Modules FI700/M1IN1REL, FI700/MM1IN1REL, FI700/MDR1IN1REL

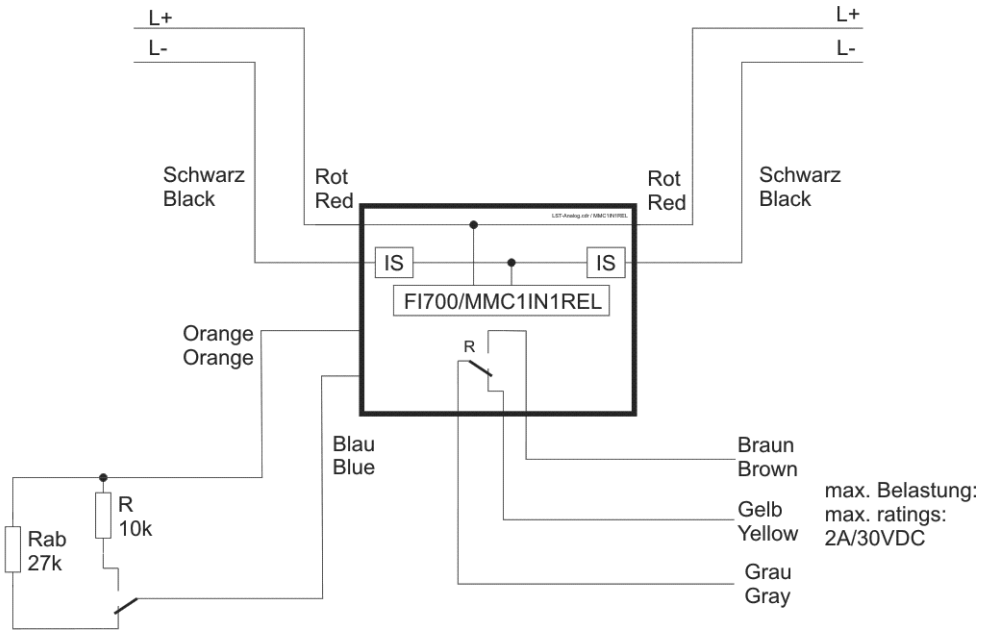


max. Belastung:
2A/30VDC
0,5A/125VAC

max. ratings:
2A/30VDC
0.5A/125VAC

3.11.2.4 Connection of Combi Module FI700/MMC1IN1REL

This module has no LED for the indication of its status.



3.11.3 Combi module with four (4) supervised inputs and four (4) relay outputs

3.11.3.1 Address setting

Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements". Each input or output occupies a separate address.

The preset address (X) refers to the first input. The other inputs and the outputs have consecutive addresses.
Input 1 = X; Input 2 = X+1; Input 3 = X+2; Input 4 = X+3
Output 1 = X+4; Output 2 = X+5; Output 3 = X+6; Output 4 = X+7

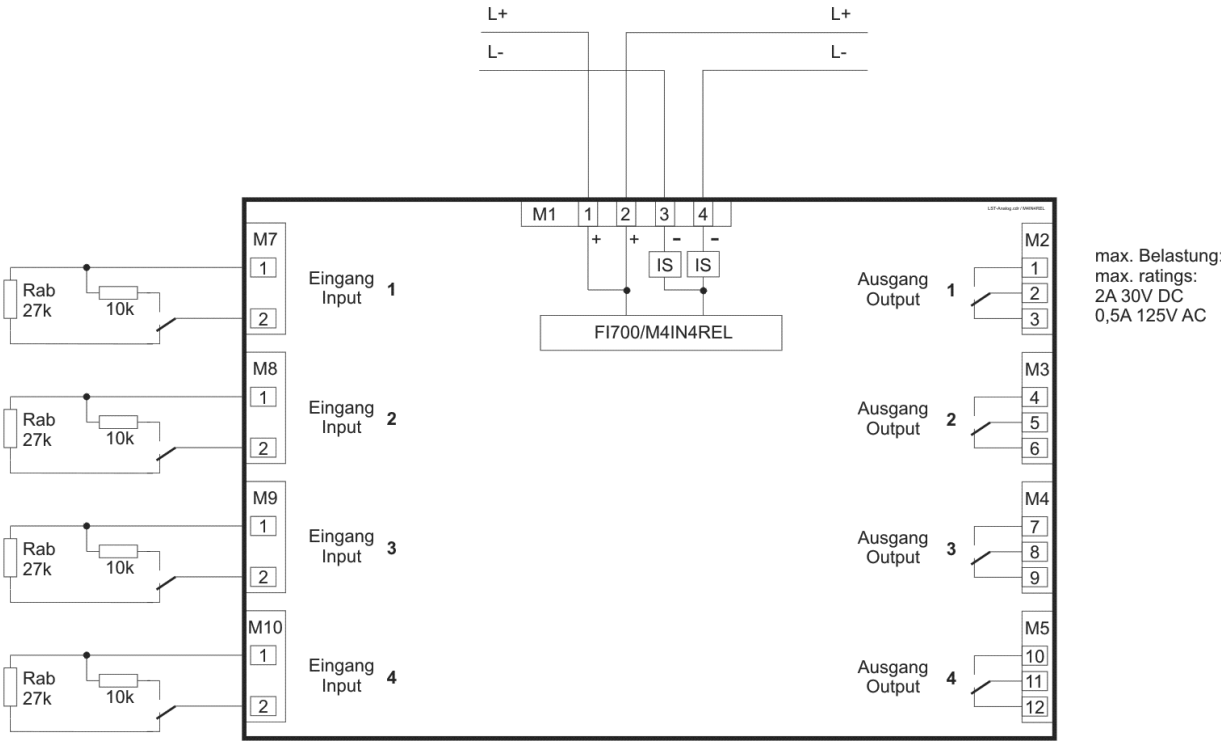
3.11.3.2 Function of the LEDs

A summary LED is available both for the inputs and for the outputs.

For the inputs:
- In the idle condition of all inputs, the LED will blink in green.
- The LED will blink in red if an input is active.
- In case of a fault of an input, the LED will be continuously illuminated in yellow.

For the outputs:
- The LED will be continuously illuminated in green when at least one output is active.

3.11.3.3 Connection of Combi Module FI700/M4IN4REL



3.11.4 Combi module with four (4) supervised inputs, two (2) supervised outputs and two (2) relay outputs

3.11.4.1 Address setting

Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements". Each input or output occupies a separate address.

The preset address (X) refers to the first input. The other inputs and the outputs have consecutive addresses.
Input 1 = X; Input 2 = X+1; Input 3 = X+2; Input 4 = X+3
Supervised Output 1 = X+4; Supervised Output 2 = X+5;
Relay output 1 = X+6; Relay output 2 = X+7

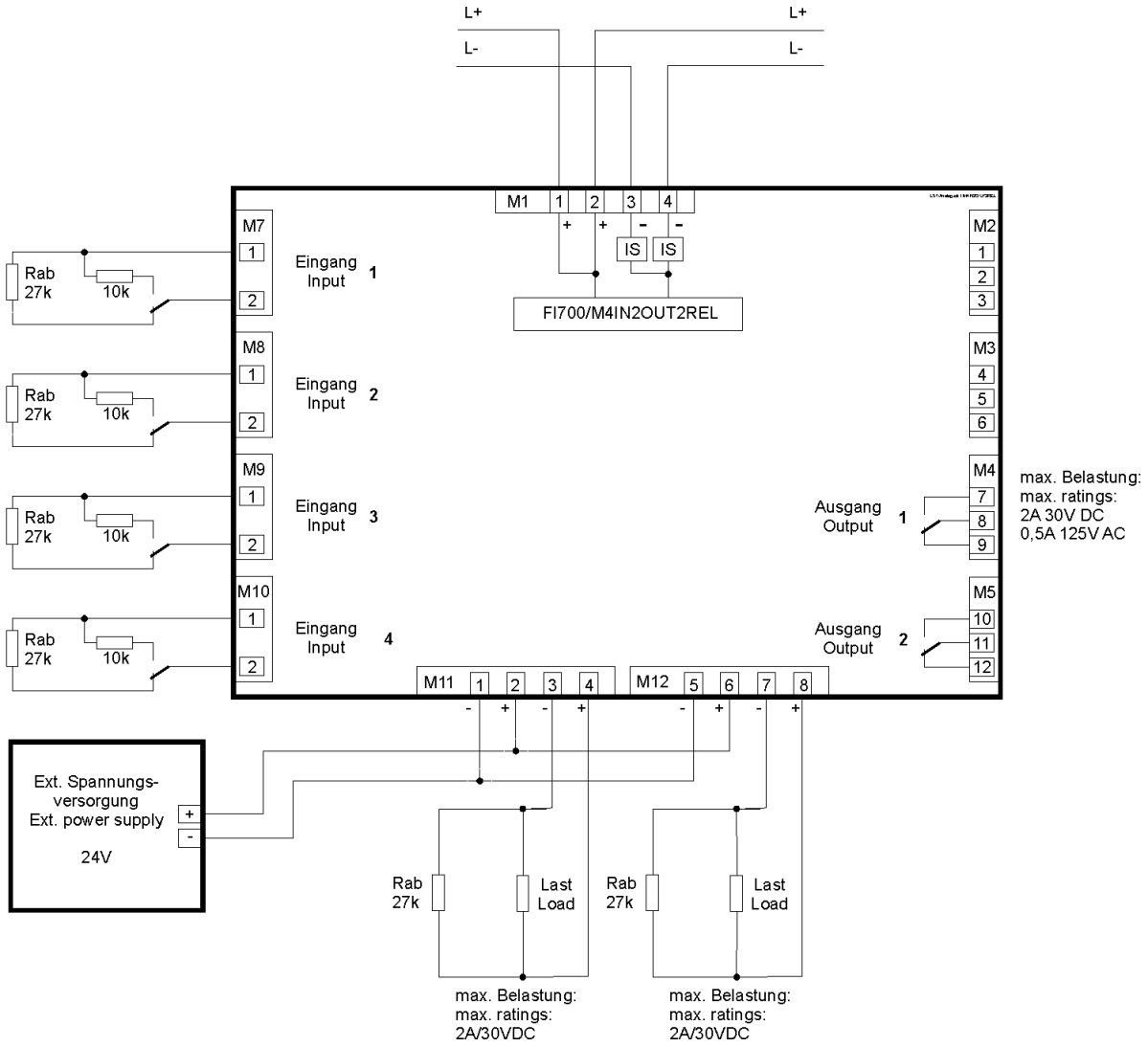
3.11.4.2 Function of the LEDs

A summary LED is available both for the inputs and for the outputs.

For the inputs:
- In the idle condition of all inputs, the LED will blink in green.
- The LED will blink in red if an input is active.
- In case of a fault of an input, the LED will be continuously illuminated in yellow.

For the outputs:
- The LED will be continuously illuminated in green when at least one output is active.
- In case of a fault of a supervised output, the LED will be continuously illuminated in yellow.

3.11.4.3 Connection of Combi Module FI700/M4IN2OUT2REL



3.11.5 Combi module with six (6) supervised inputs and two (2) relay outputs

3.11.5.1 Address setting

Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements". Each input or output occupies a separate address.

The preset address (X) refers to the first input. The other inputs and the outputs have consecutive addresses.
Input 1 = X; Input 2 = X+1; Input 3 = X+2; Input 4 = X+3; Input 5 = X+4; Input 6 = X+5
Relay output 1 = X+6; Relay output 2 = X+7

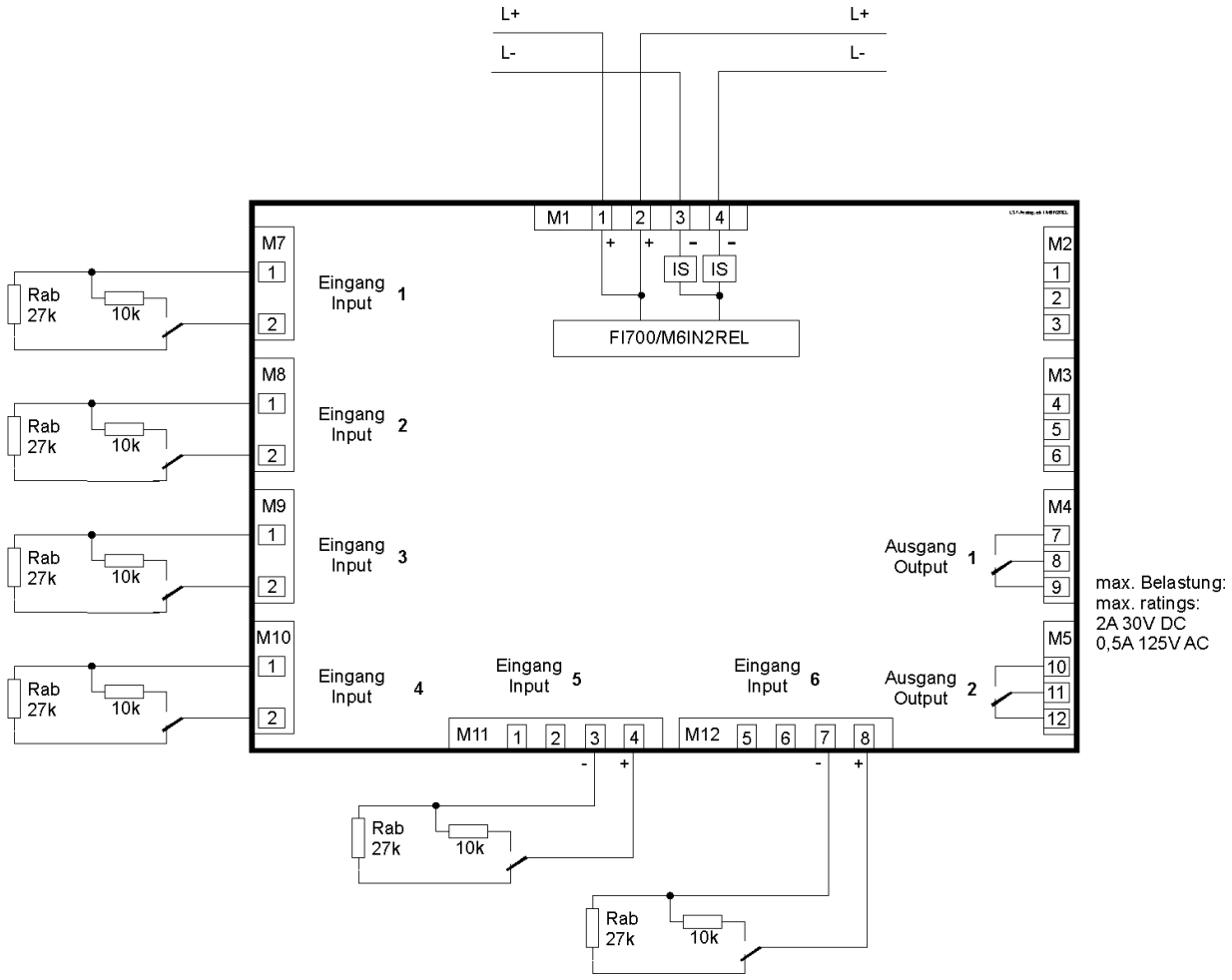
3.11.5.2 Function of the LEDs

A summary LED is available both for the inputs and for the outputs.

For the inputs:
- In the idle condition of all inputs, the LED will blink in green.
- The LED will blink in red if an input is active.
- In case of a fault of an input, the LED will be continuously illuminated in yellow.

For the outputs:
- The LED will be continuously illuminated in green when at least one output is active.

3.11.5.3 Connection of Combi Module FI700/M6IN2REL



3.12 Loop sounders and strobes

In the following sub-chapters, the tone setting and the connection of the products listed below are clearly described. The leaflet provided with the product describes in detail how the sounder parameters (sound level and tone) are set.

3.12.1 Notes

The maximum number of loop-powered sounders per loop depends on the set sound level, as the power consumption is substantially affected by the sound level.

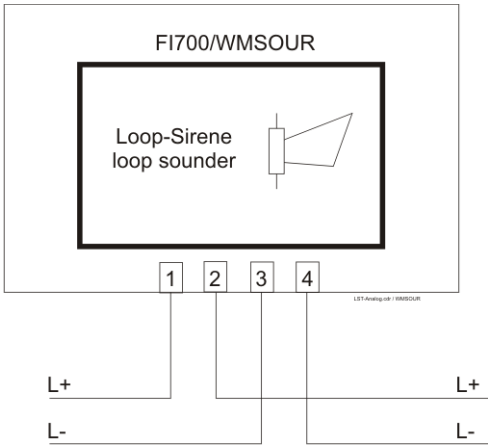
The maximum number of loop-powered sounders can differ from installation to installation. Please use the loop calculator tool FireSysCALC_xxx.ods which can be downloaded from the LST website – registration required.

3.12.2 Address setting

Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements".

3.12.3 Sounder FI700/WM/SOUR – FI700/WM66/SOUR

3.12.3.1 Connection



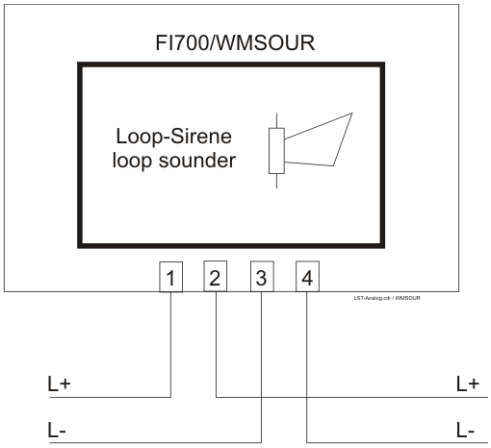
3.12.3.2 Tone setting

The tone is set by parameterising the element.

Setting in PARSOFT	*Frequency [Hz]*	*Repetition*	*Application*
Sound A	990 / 650	2Hz (250ms / 250ms)	BS tone
Sound B	990	Continuous tone	BS tone
Sound C	990	1Hz (500ms ON / 500ms OFF)	

3.12.4 Sounder FI700/WM/MT/SOUR – FI700/WM/MT/SOUW

3.12.4.1 Connection



3.12.4.2 Tone setting

The tone is set by parameterising the element.

Setting in PARSOFT	*Frequency [Hz]*	*Repetition*	*Application*
Sound A	500 – 1200	3.5s increasing, 0.5s silent	Slow whoop tone
Sound B	1200 – 500	1Hz	DIN tone
Sound C	990	Continuous tone	BS tone

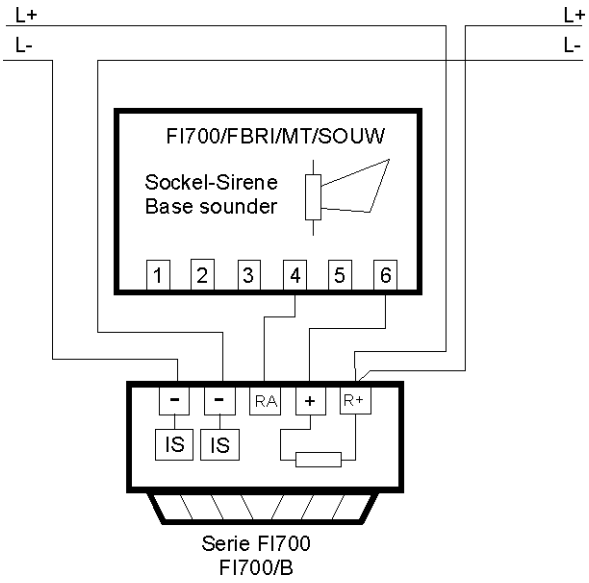
3.12.5 Sounder FI700/FBRI/MT/SOUW

This sounder is actuated via the parallel output of the detector and is activated in the alarm condition of the detector.

In the case of connection to Fire Detection Control Panels Series BC216, a maximum of 8 sounders per loop can be activated at the same time, because the number of detector/module LEDs that may be activated is limited.

The parallel output of the actuating element (detector) must be set to "contin. on".

3.12.5.1 Connection



3.12.5.2 Tone setting

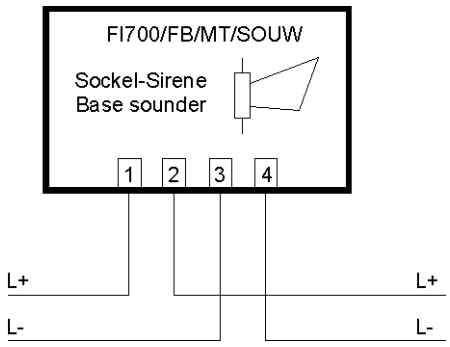
On the base sounder there are switches by means of which the sound level and the tone can be set.

SW1	*SW2*	*Sound level*
OFF	OFF	Low – 87dB(A)
ON	OFF	Medium – 90dB(A)
OFF	ON	High – 93dB(A)

SW3	*SW4*	*Frequency [Hz]*	*Repetition*	*Application*
OFF	ON	800 – 1000	0.5s	LF sweep
ON	ON	500 – 1200	3.5s increasing, 0.5s silent	Slow whoop tone
OFF	OFF	1200 – 500	1Hz	DIN tone

3.12.6 Sounder FI700/FB/MT/SOUW

3.12.6.1 Connection



3.12.6.2 Tone setting

On the base sounder there are switches by means of which the sound level and the tone can be set. Three tones are listed here as examples.

The switch settings result in the following **Sound A,** which can be assigned in PARSOFT:

Switch					
SW1	***SW2***	***SW3***	***Frequency [Hz]***	***Repetition***	***Application***
1- ON	1- ON	1- ON	910	Continuous tone	BS tone
0- OFF	1- ON	1- ON	500 – 1200	3.5s increasing, 0.5s silent	Slow whoop
1- ON	1- ON	0- OFF	1200 – 500	1Hz	DIN tone

The switch settings result in the following **Sound B/Sound C**, which can be assigned in PARSOFT:

Switch					
SW1	***SW2***	***SW3***	***Frequency [Hz]***	***Repetition***	***Application***
1- ON	1- ON	1- ON	910 / 685	2Hz (250ms / 250ms)	BS tone
0- OFF	1- ON	1- ON	910	Continuous tone	BS tone
1- ON	1- ON	0- OFF	910	Continuous tone	BS tone

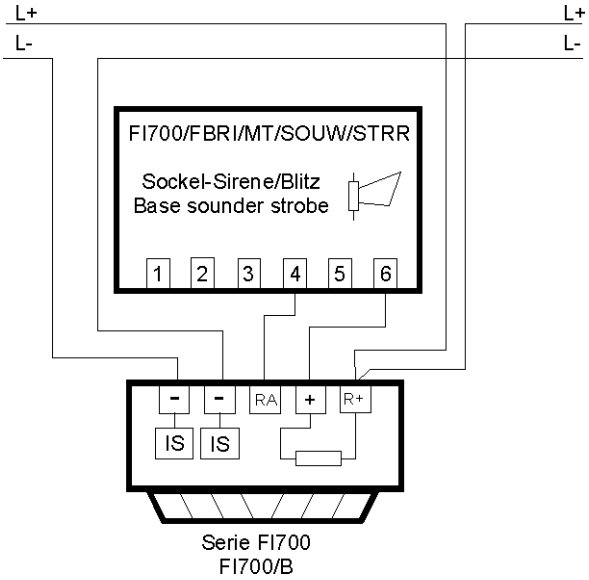
SW4	***Sound level***
1 - ON	High – 90dB(A)
0 - OFF	Low – 80dB(A)

3.12.7 Sounder-Strobe FI700/FBRI/MT/SOUW/STRR

This sounder is actuated via the parallel output of the detector and is activated in the alarm condition of the detector.

In the case of connection to Fire Detection Control Panels Series BC216, a maximum of 8 sounders per loop can be activated at the same time, because the number of detector/module LEDs that may be activated is limited. The parallel output of the actuating element (detector) must be set to "contin. on".

3.12.7.1 Connection



3.12.7.2 Tone setting

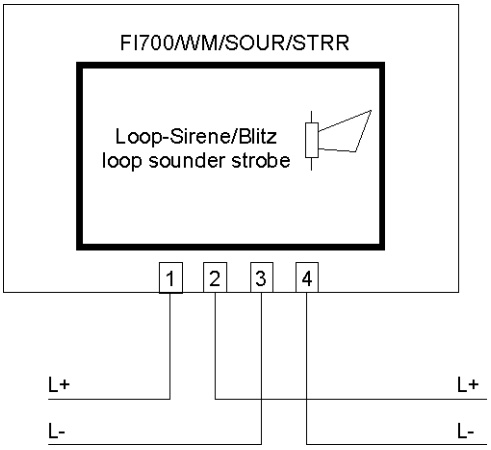
On the base sounder there are switches by means of which the sound level and the tone can be set. Two tones are listed here as examples.

Switch							
SW2	***SW3***	***SW4***	***SW5***	***SW6***	***Frequency [Hz]***	***Repetition***	***Application***
1	0	1	0	1	970	Continuous tone	BS tone
0	0	1	1	1	1200 – 500	1Hz	DIN tone

Switch		
SW7	***SW8***	**Sound level**
0	0	Low – 85dB(A)
0	1	Medium – 90dB(A)
1	0	High – 95dB(A)
1	1	Very high – 97dB(A)

3.12.8 Sounder-Strobe FI700/WM/SOUR/STRR – FI700/WM66/SOUR/STRR

3.12.8.1 Connection



3.12.8.2 Tone setting

On the base sounder there are switches by means of which the sound level and the tone can be set. Three tones are listed here as examples.

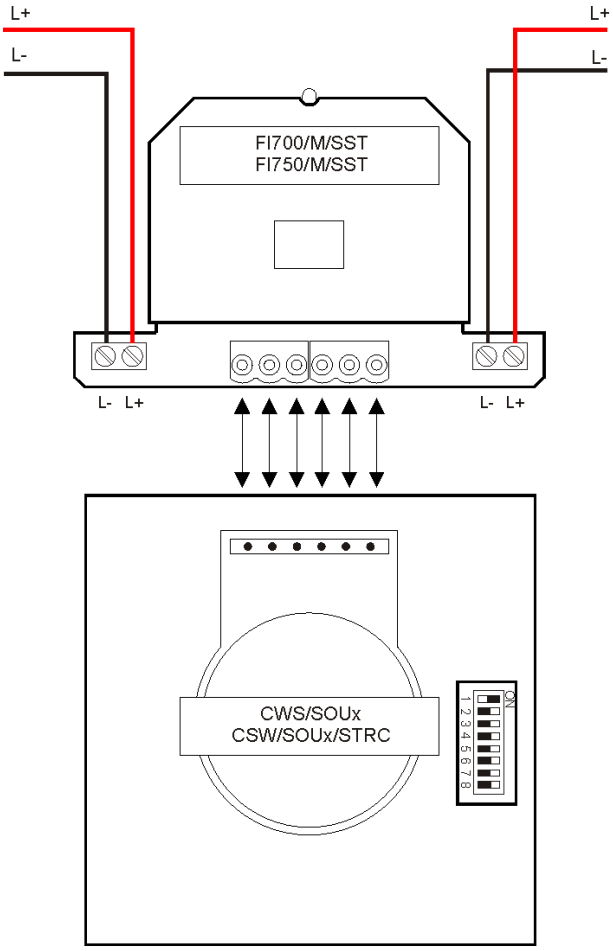
The switch settings result in the following tone:

Switch					
SW1	***SW2***	***SW3***	***Frequency [Hz]***	***Repetition***	***Application***
1- ON	1- ON	1- ON	990	Continuous tone	BS tone
0- OFF	1- ON	1- ON	500 – 1200	3.5s increasing, 0.5s silent	Slow whoop
0- OFF	0- OFF	0- OFF	1200 – 500	1Hz	DIN tone

SW4	***Sound level***
1 - ON	High – 100dB
0 - OFF	Low – 90dB

3.12.9 Sounder(-Strobe) CWS/SOUx / CWS/SOUx/STRC with Module FI700/M/SST / FI750/M/SST

3.12.9.1 Connection



3.12.9.2 Tone setting – CWS/SOUx(/STRC) with FI7x0/M/SST

On the base sounder there are switches by means of which the sound level and the tone can be set. Three tones are listed here as examples.

The switch settings result in the following **Sound A,** which can be assigned in PARSOFT:

Switch							
SW1	***SW2***	***SW3***	***SW4***	***SW5***	***Frequency [Hz]***	***Repetition***	***Application***
0 - OFF	1- ON	0 - OFF	1- ON	1- ON	910	Continuous tone	BS tone
1- ON	0 - OFF	1- ON	0 - OFF	1- ON	500 – 1200	3.5s increasing, 0,5s silent	Slow whoop
0 - OFF	0 - OFF	1- ON	1- ON	1- ON	1200 – 500	1Hz	DIN tone

The switch settings result in the following **Sound B/Sound C**, which can be assigned in PARSOFT:

Switch							
SW1	***SW2***	***SW3***	***SW4***	***SW5***	***Frequency [Hz]***	***Repetition***	***Application***
0 - OFF	1- ON	0 - OFF	1- ON	1- ON	1000	Continuous tone	
1- ON	0 - OFF	1- ON	0 - OFF	1- ON	500 – 1200	3.5s increasing, 0.5s silent	Slow whoop
0 - OFF	0 - OFF	1- ON	1- ON	1- ON	800	Continuous tone	

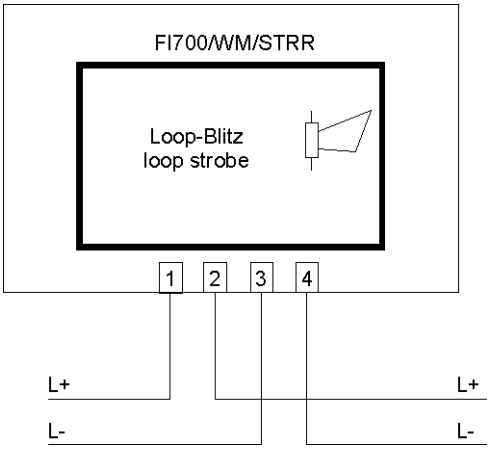
If tone 32, which corresponds to the switch setting 1,1,1,1,1, is selected, the sounder will not emit a tone when it is activated. With this setting, only the strobe of the sounder-strobe will be activated. If the loop module is operated with a CWS/SOUx/STRC, the product has to be parameterised as "Loop siren strobe".

3.12.9.3 Sound level – CWS/SOUx(/STRC) with FI7x0/M/SST

Switch		
SW6	***SW7***	Sound level
0	0	Low – 85dB(A)
1	0	Medium – 90dB(A)
0	1	High – 95dB(A)
1	1	Very high – 100dB(A) +/-3

3.12.10 Strobe FI700/WM/STRRR

3.12.10.1 Connection



3.12.10.2 Flash frequency and brightness

On the strobe there are switches by means of which the flash frequency and the luminous intensity can be set.

SW1	*Luminous intensity*
1	1cd
0 – OPEN	0.5cd

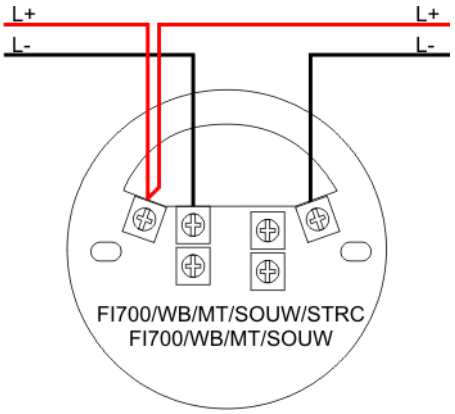
SW2	*Flash frequency*
1	0.5Hz
0 – OPEN	1Hz

3.12.11 Sounder(-Strobe) FI700/WB/MT/SOUW – FI700/WB/MT/SOUW/STRC

If this sounder is used on the BC216, three tones according to Chapter 3.12.11.2: "Tone setting" are available. On the BC600, this sounder can be parameterised [FI7x0/WB/MT (32 tone)] to the full extent as regards the sound level and the tones. Therefore you can choose from among 32 tones. Tone 0 which is mentioned in the enclosed packet corresponds to tone 32 (PARSOFT).

If the product is to be used without tone emission, tone 32 is to be selected. With this method, the sounder-strobe's tone emission can be suppressed.

3.12.11.1 Connection



3.12.11.2 Tone setting

To set the tone, a Programming Unit FI700/PU or FI750/PU with software revision 2.4L or higher must be used.

In the FI700/PU or FI750/PU menu "Set Mod/Set Op", the operation mode / the sound level is set.

Operation Mode	*Sound level*
2	Low – 84.5dB(A)
66	Medium – 88.9dB(A)
130	High – 90.3dB(A)
194	Very high – 92.5dB(A)

According to this setting, the following tones are available for selection on the fire detection control panel. The tone is defined by parameterising the element.

Setting in PARSOFT	*Frequency [Hz]*	*Repetition*	*Application*
Sound A	500 – 1200	3.5s increasing, 0.5s silent	Slow whoop tone
Sound B	1200 – 500	1Hz	DIN tone
Sound C	1000	Continuous tone	Continuous tone

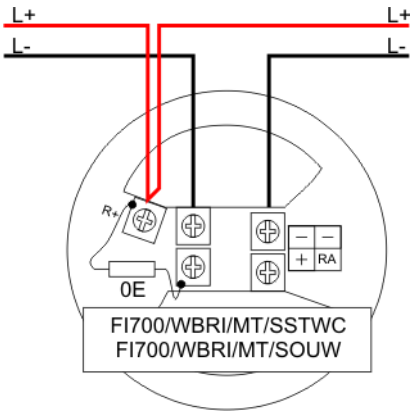
3.12.12 Sounder(-Strobe) FI700/WBRI/MT/SOUW – FI700/WBRI/MT/SSTWC

This sounder or the sounder-strobe is actuated via the parallel output of the detector and is activated in the alarm condition of the detector.

If the devices are connected to Fire Detection Control Panels Series **BC216,** a maximum of 8 sounders of the stated type can be simultaneously activated per loop, because the number of detector/module LEDs that can be activated is limited. The parallel output of the actuating element (detector) has to be set to "contin. on".

If this alarming device is used on the **BC600,** the parallel output of the detector can be freely parameterised according to the requirements. This is done with the RI setting "individual". In this case the limitation of 8 detector/module LEDs that can be activated is cancelled for this output. Therefore it is all the more important to check the maximum number of sounders by means of the loop calculator spreadsheet FireSysCALC_xxx.ods (available in the download area of the LST website – registration required).

3.12.12.1 Connection



3.12.12.2 Tone setting

On the base sounder there are switches by means of which the sound level and the tone can be set. Three tones are listed here as examples.

Switch							
SW2	***SW3***	***SW4***	***SW5***	***SW6***	***Frequency [Hz]***	***Repetition***	***Application***
0	1	0	1	1	970	Continuous tone	BS tone
0	0	1	1	1	1200 – 500	1Hz	DIN tone
1	0	1	0	1	500 – 1200	1Hz	Slow whoop tone

3.12.12.3 Sound level – FI700/WBRI/MT/SOUW and FI700/WBRI/MT/SSTWC

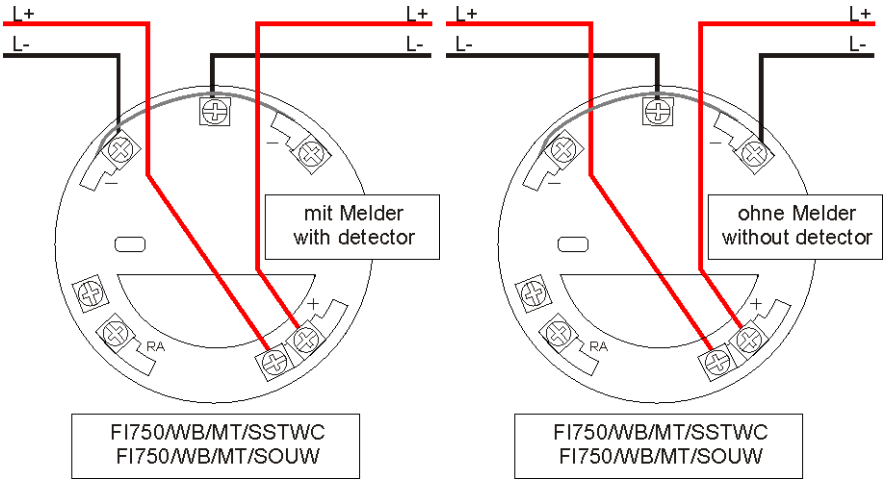
Switch		*Sound level*	
SW7	***SW8***	***FI700/WBRI/MT/SOUW***	***FI700/WBRI/MT/SSTWC***
0	0	Low – 89dB(A)	Low – 91dB(A)
0	1	Medium – 91dB(A)	Medium – 93dB(A)
1	0	High – 94dB(A)	High – 96dB(A)

3.12.13 Sounder(-Strobe) FI750/WB/MT/SOUW – FI750/WB/MT/SOUW/STRC

If this sounder is used on the BC216, three tones according to Chapter 3.12.13.2 - "Tone setting" are available. On the BC600, this sounder can be parameterised [FI7x0/WB/MT (32 tone)] to the full extent as regards the sound level and the tones. Therefore you can choose from among 32 tones. Tone 0 which is mentioned in the enclosed packet corresponds to tone 32 (PARSOFT).

If the product is to be used without tone emission, tone 32 is to be selected. With this method, the sounder-strobe's tone emission can be suppressed.

3.12.13.1 Connection



3.12.13.2 Tone setting

To set the tone, a Programming Unit FI700/PU or FI750/PU with software revision 2.4L or higher must be used.

In the FI700/PU or FI750/PU menu "Set Mod/Set Op", the operation mode / the sound level is set.

Operation Mode	*Sound level*
2	Low – 84.5dB(A)
66	Medium – 88.9dB(A)
130	High – 90.3dB(A)
194	Very high – 92.5dB(A)

According to this setting, the following tones are available for selection on the fire detection control panel. The tone is defined by parameterising the element.

Setting in PARSOFT	*Frequency [Hz]*	*Repetition*	*Application*
Sound A	500 – 1200	3.5s increasing, 0.5s silent	Slow whoop tone
Sound B	1200 – 500	1Hz	DIN tone
Sound C	1000	Continuous tone	Continuous tone

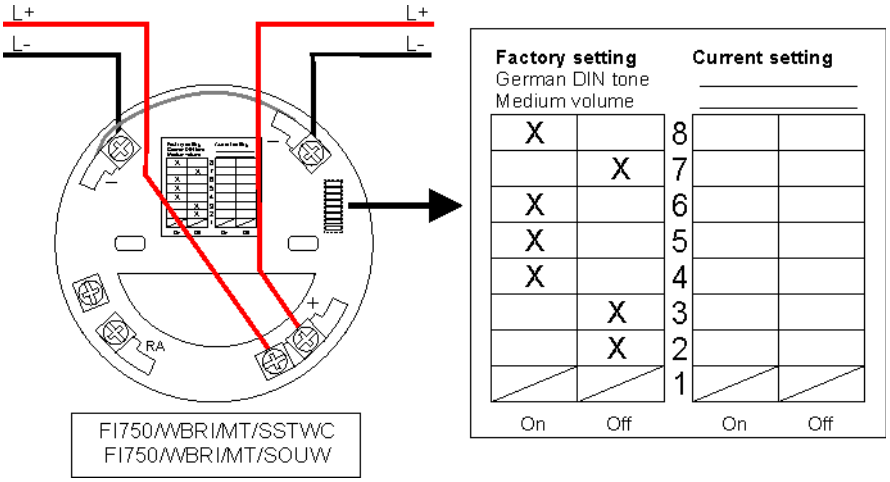
3.12.14 Sounder-Strobe FI750/WBRI/MT/SOUW – FI750/WBRI/MT/SSTWC

This sounder or the sounder-strobe is actuated via the parallel output of the detector and is activated in the alarm condition of the detector.

If the devices are connected to Fire Detection Control Panels Series **BC216,** a maximum of 8 sounders of the stated type can be simultaneously activated per loop, because the number of detector/module LEDs that can be activated is limited. The parallel output of the actuating element (detector) has to be set to "contin. on".

If this alarming device is used on the **BC600,** the parallel output of the detector can be freely parameterised according to the requirements. This is done with the RI setting "individual". In this case the limitation of 8 detector/module LEDs that can be activated is cancelled for this output. Therefore it is all the more important to check the maximum number of sounders by means of the loop calculator spreadsheet FireSysCALC_xxx.ods (available in the download area of the LST website – registration required).

3.12.14.1 Connection



The switches by means of which the tone and the sound level are set, are located on the bottom of the base. That is why the setting of the switches at the time of shipment is printed on a label. If you change the settings, you can write the new settings on the label for documentation purposes.

3.12.14.2 Tone setting

On the base sounder there are switches by means of which the sound level and the tone can be set. Three tones are listed here as examples.

Switch							
SW2	***SW3***	***SW4***	***SW5***	***SW6***	***Frequency [Hz]***	***Repetition***	***Application***
0	1	0	1	1	970	Continuous tone	BS tone
0	0	1	1	1	1200 – 500	1Hz	DIN tone
1	0	1	0	1	500 – 1200	1Hz	Slow whoop tone

3.12.14.3 Sound level – FI750/WBRI/MT/SOUW

Switch		
SW7	***SW8***	Sound level
0	0	Low – 89dB(A)
0	1	Medium – 91dB(A)
1	0	High – 94dB(A)

3.12.14.4 Sound level – FI750/WBRI/MT/SSTWC

Switch		
SW7	***SW8***	Sound level
0	0	Low – 91dB(A)
0	1	Medium – 93dB(A)
1	0	High – 96dB(A)

3.12.15 Sounder-Strobe FI750/WBRIB/SOUW – FI750/WBRIB/SSTWCR – FI750/WBRIB/SSTWCW

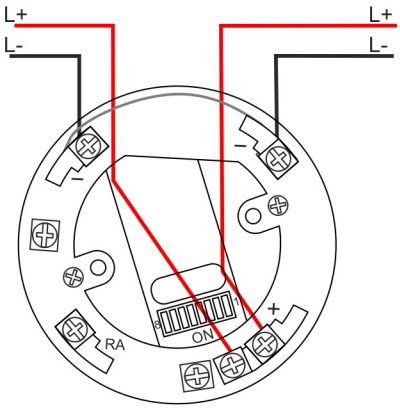
This sounder or the sounder-strobe is actuated via the parallel output of the detector.

If the devices are connected to Fire Detection Control Panels Series **BC216**, a maximum of 8 sounders of the stated type can be simultaneously activated per loop, because the number of detector/module LEDs that can be activated is limited. The parallel output of the actuating element (detector) has to be set to "contin. on". The tone is set by means of the switches on the signalling device.

If this alarming device is used on the **BC600**, the parallel output of the detector can be freely parameterised according to the requirements. This is done with the RI setting "intelligent". In this case the limitation of 8 detector/module LEDs that can be activated is cancelled for this output. Therefore it is all the more important to check the maximum number of sounders by means of the loop calculator spreadsheet FireSysCALC_xxx.ods (available in the download area of the LST website – registration required).

By setting the remote indicator output to "intelligent" by means of PARSOFT, the tones and the sound level can be determined in the parameter setup of the BC600. 32 tones are supported. The property "intelligent" of the detector's parallel output is supported by detectors with production date 2017/13 or later. If the setting "intelligent" is used for a detector with an older production date, the BC600 will show the message "wrong firmware" after the restart of the loop.

3.12.15.1 Connection



FI750/WBRIB/SOUW
FI750/WBRIB/SSTWCR
FI750/WBRIB/SSTWCW

Der Parallelausgang (RA) darf nicht verwendet werden!
Die Toneinstellung des Signalgebers über den Parallelausgang
des FI750 Melders wird ab dem Melder-Produktionsdatum 2017/31 unterstützt.

Do not connect anything to the remote terminal (RA)!
The tone selection of this alarming device via the remote output of
the FI750 detector is supported from the detector production date 2017/31 onwards

3.12.15.2 Tone setting

If this signalling device is used on the BC600, the tones are assigned through the combinations for the signalling device, in the parameter setup of the control panel. If this signalling device is used on the BC216, the tone must be set by means of the switches of the signalling device.

On the base sounder there are switches by means of which the sound level and the tone can be set. Four tones are listed here as examples.

Switch							
SW1	***SW2***	***SW3***	***SW4***	***SW5***	***Frequency [Hz]***	***Repetition***	***Application***
1	1	1	0	1	800 / 1000 / 500ms		Warble tone
0	1	0	1	1	970	Continuous tone	BS tone
1	0	1	0	1	500 – 1200	1Hz	Slow whoop tone
0	0	1	1	1	1200 – 500	1Hz	DIN tone

3.12.15.3 Sound level

If this signalling device is used on the BC600, the sound levels are assigned through the combinations for the signalling device, in the parameter setup of the control panel. If this signalling device is used on the BC216, the sound level must be set by means of the switches of the signalling device.

The sound level depends on the set sound level as well as the selected tone.

Switch		
SW6	***SW7***	Sound level
0	0	Low
1	0	Medium
0	1	High
1	1	Very high

The setting "Very high" results in the following dB(A) values:

Switch setting	***Tone***	Typical sound level
Very high	Warble tone	89.7 dB(A)
	BS tone	91.4 dB(A)
	Slow whoop tone	92.6 dB(A)
	DIN tone	90.5 dB(A)

3.12.15.4 Flash energy

If the signalling devices FI750/WBRIB/SSTWCR and FI750/WBRIB/SSTWCW are used on the BC600, (with the remote indicator setting "intelligent"), their flash intensity is set to LOW and cannot be changed. The flash frequency is 0.5Hz.

This results in the following EN 54-23 values:

FI750/WBRIB/SSTWCR: O1.7-6.0
FI750/WBRIB/SSTWCW: C3-9.2

3.12.16 Sounder-Strobe FI750/WBRIS/SOUW – FI750/WBRIS/SSTWCR – FI750/WBRIS/SSTWCW

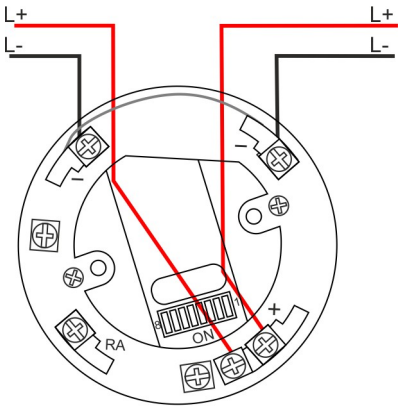
This sounder or the sounder-strobe is actuated via the parallel output of the detector.

If the devices are connected to Fire Detection Control Panels Series **BC216**, a maximum of 8 sounders of the stated type can be simultaneously activated per loop, because the number of detector/module LEDs that can be activated is limited. The parallel output of the actuating element (detector) has to be set to "contin. on". The tone is set by means of the switches on the signalling device.

If this alarming device is used on the **BC600**, the parallel output of the detector can be freely parameterised according to the requirements. This is done with the RI setting "intelligent". In this case the limitation of 8 detector/module LEDs that can be activated is cancelled for this output. Therefore it is all the more important to check the maximum number of sounders by means of the loop calculator spreadsheet FireSysCALC_xxx.ods (available in the download area of the LST website – registration required).

On the base sounder or sounder-strobe there is a DIP switch by means of which the tone, the sound level and the flash energy can be set. The setting is made in the same way, irrespective of whether the device is used on the BC600 or on the BC216.

3.12.16.1 Connection



FI750/WBRIS/SOUW
FI750/WBRIS/SSTWCR
FI750/WBRIS/SSTWCW

3.12.16.2 Tone setting

The tone is set by means of the switches SW1-SW5. Four tones are listed here as examples.

Switch							
SW1	***SW2***	***SW3***	***SW4***	***SW5***	***Frequency [Hz]***	***Repetition***	***Application***
1	1	1	0	1	800 / 1000 / 500ms		Warble tone
0	1	0	1	1	970	Continuous tone	BS tone
1	0	1	0	1	500 – 1200	1Hz	Slow whoop tone
0	0	1	1	1	1200 – 500	1Hz	DIN tone

3.12.16.3 Sound level

The sound level is set by means of the switches SW6-SW7. The sound level depends on the set sound level and on the selected tone.

Switch		
SW6	***SW7***	Sound level
0	0	Low
1	0	Medium
0	1	High
1	1	Very high

The setting "Very high" results in the following dB(A) values:

Switch setting	***Tone***	Typical sound level
Very high	Warble tone	89.7 dB(A)
	BS tone	91.4 dB(A)
	Slow whoop tone	92.6 dB(A)
	DIN tone	90.5 dB(A)

3.12.16.4 Flash energy

The flash energy is set by means of the switch SW8.

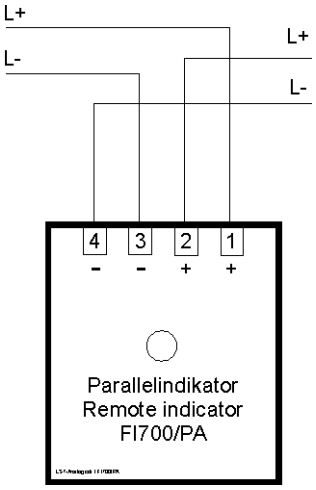
Switch			
SW8	Flash energy	EN 54-23 Category FI750/WBRIS/SSTWCW	EN 54-23 Category FI750/WBRIS/SSTWCR
0	Low	C-3-9.2	O-1.7-6.0
1	High	C-3-14.2 O-4.6-14.2	C-3-10.0

The flash frequency is 0.5Hz.

3.13 Remote indicator

The programmable remote indicator is parameterised like an actuation (Ctrl.module with superv.), the zones for its activation can be freely assigned.

3.13.1 Connection of FI700/PA



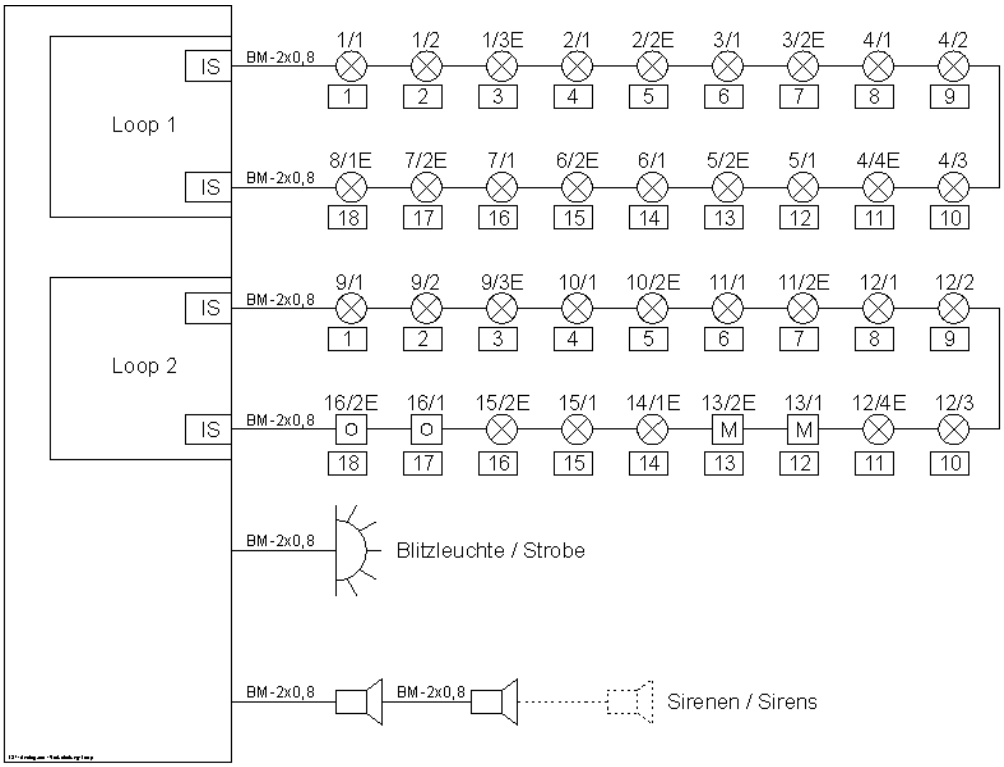
3.13.2 Address setting

Detailed information can be found on page 178 in Chapter 3.3: "Address programming of loop elements".

3.14 Example for the wiring of detector circuits

The following diagrams show typical installation schemes. We ask you again to consider country-specific standards and regulations in the field of fire detection systems.

3.14.1 System cabling ADM loop



	Legende:	Explanation:
⊗	Rauchmelder	Smoke detector
O	Handfeuermelder	Manual call point
M	Modul (zB. Grenzwertmelder-, Überwachungsmodul)	Module (e.g., conventional zone module, monitor module)
IS	Isolator auf Loop-Interfacemodul LIF128-1	Isolator on Loop Interface LIF128-1
15/2E	Gruppen-/Elementnummer (der letzte Melder einer Gruppe ist mit 'E' zu kennzeichnen)	Zone/element number (the last detector of a zone has to be marked with 'E')
4	Elementadresse (max.240 Elemente pro Loop)	Element address (max. 240 elements per loop)
BM-2x0,8	Kabeltype (die max. Kabellänge ist im Kapitel "Anforderungen an Kabel" erläutert)	Cable type (the max. cable length is explained in chapter "Cable requirements")

Jedes Loop Element der Serie FI700 verfügt über einen ein- und ausgangsseitigen Isolatoren.

Every loop element of the Series FI700 has an integrated isolator at the input and output of the loop connection.

3.15 Programming of detectors, modules and signalling devices

This part of the document is intended for Fire Detection Control Panels Series BC216 and BC600.

In the case of the Fire Detection Control Panel Series BC600, the elements have to be selected in PARSOFT by means of the exact type (for example **FI750/OT**).

For the Fire Detection Control Panels Series BC216, the types have to be selected according to the tables below and the detailed information which the tables contains. For example, for a detector of type FI750/OT, the element type **Optical/therm detector** is to be used in PARSOFT.

3.15.1 Parameterising detectors on the BC216

Art.No.	Type	Element type in PARSOFT	Level	Mode	Sensitivity
241080	FI700/0	Optical detector	very high	O	2.0%/m
			high	O	2.7%/m
			normal	O	3.3%/m
			low	O	4.0%/m
242080	FI700/T	Thermal detector	58C RoR	Class A1R typ. 58°C (RoR, MAX)	
			78C Max	Class BS[1] typ. 78°C	
241081	FI700/OT	Optical/therm detector	very high	O/T	2.0%/m / A1R
		58C ROR – every level	high	O/T	2.7%/m / A1R
			normal	O/T	3.3%/m / A1R
			low	O/T	4.0%/m / A1R
			thermal	T	A1R
241086	FI750/0	Optical detector	very high	O	2.0%/m
			high	O	2.7%/m
			normal	O	3.3%/m
			low	O	4.0%/m
242086	FI750/T	Thermal detector	58C RoR	Class A1R typ. 58°C (RoR, MAX)	
			78C Max	Class BS typ. 78°C	
241087	FI750/OT	Optical/therm detector	very high	O/T	2.0%/m / A1R
		58C ROR – every level	high	O/T	2.7%/m / A1R
			normal	O/T	3.3%/m / A1R
			low	O/T	4.0%/m / A1R
			thermal	T	A1R
	HxM/x/72/xx/xx	Manual Call Point			
	HME/FFFF/72/TT/LL	Manual Call Point			
245080	MCP	Manual Call Point			
245081	MCP67	Manual Call Point			

[1] Class BS applies from firmware version 1.70 on. Thermal detectors with an earlier firmware version comply with class B in level "78C". The firmware version can be found on the label on the bottom of the detector.

3.15.2 Parameterising remote indicators on the BC216

Art.No.	Type	Element type in PARSOFT	Remarks
251010	FI700/PA	Remote indicator blinking	

3.15.3 Parameterising modules on the BC216

Art.No.	Type	Element type in PARSOFT	Remarks
249250	FI700/M1IN	Monitor module	
249251	FI700/M1OUT	Ctrl.module with supervis.	
249252	FI700/M1REL	Ctrl.module without supervis.	Relay output
249253	FI700/M1IN1OUT	Monitor module	Input
		Ctrl.module with supervis.	Output
249254	FI700/M1IN1REL	Monitor module	Input
		Ctrl.module without supervis.	Relay output
249255	FI700/M1CZ	Conventional module	EOL Capacitor
		Conventional module	EOL Resistor
249256	FI700/MM1IN	Monitor module	
249257	FI700/MM1OUT	Ctrl.module with supervis.	
249258	FI700/MM1REL	Ctrl.module without supervis.	Relay output
249259	FI700/MM1IN1OUT	Monitor module	Input
		Ctrl.module with supervis.	Output
249260	FI700/MM1IN1REL	Monitor module	Input
		Ctrl.module without supervis.	Relay output
249280	FI700/MDR1IN	Monitor module	
249281	FI700/MDR1OUT	Ctrl.module with supervis.	
249282	FI700/MDR1REL	Ctrl.module without supervis.	
249283	FI700/MDR1IN1OUT	Monitor module	Input
		Ctrl.module with supervis.	Output
249284	FI700/MDR1IN1REL	Monitor module	Input
		Ctrl.module without supervis.	Relay output
249285	FI700/MMC1IN	Monitor module	
249286	FI700/MMC1OUT	Ctrl.module with supervis.	
249287	FI700/MMC1REL	Ctrl.module without supervis.	Relay output
249288	FI700/MMC1IN1REL	Monitor module	Input
		Ctrl.module without supervis.	Relay output
249289	FI700/M4IN4REL	Monitor module	Input
		Ctrl.module without supervis.	Relay output
249290	FI700/M4IN2OUT2REL	Monitor module	Input
		Ctrl.module with supervis.	Output
		Ctrl.module without supervis.	Relay output
249291	FI700/M6IN2REL	Monitor module	Input

The parameterised address of an input/output of a combi module is not necessarily the preset address of the module (base address). The address setting of combi modules is described starting on page 296 in Chapter 3.11: "Combi modules".

3.15.4 Parameterising wireless elements on the BC216

Art.No.	Type	Element type in PARSOFT	Remarks
249308	FI720/RF/W2W	RF Gateway	RF Interface
249261	FI700/RF/W2W	RF Gateway	RF Interface
249309	FI720/RF/WE	- - - - -	RF Expander
249264	FI700/RF/WE	- - - - -	RF Expander
249265	FI700/RF/CWE	- - - - -	RF Interface Conv.
241192	FI720/RF/O	RF Optical detector	
241193	FI720/RF/OT	RF Opt./therm. detector	
242087	FI720/RF/T	RF Thermal detector	
241082	FI700/RF/O	RF Optical detector	
241083	FI700/RF/OT	RF Opt./therm. detector	
242081	FI700/RF/T	RF Thermal detector	
241194	FI720/RF/O/700	RF Optical detector	
241195	FI720/RF/OT/700	RF Opt./therm. detector	
242088	FI720/RF/T/700	RF Thermal detector	
245082	FI700/RF/MCP	RF Manual call point	
245695	HFM/3/73/00	RF Manual call point	
245698	HM/5/73/02/00	RF Manual call point	
249262	FI700/RF/M1IN	RF Monitor module	
249263	FI700/RF/M1REL	RF Ctrl.module no spv.	
249292	FI700/RF/M1REL/BATT	RF Ctrl.module no spv.	with battery
249310	FI720/RF/M/SST	RF Siren	Module for sign.dev
355181	FI700/RF/WM/SOUR	RF Siren	
355195	FI700/RF/WM/SOUW	RF Siren	
355191	FI700/RF/WM66/SOUR	RF Siren	IP66
355193	FI700/RF/WB/SOUW	RF Siren	Base sounder
355194	FI700/RF/WB/SOUW/STRC	RF Siren	Base sounder/strobe
355188	FI700/RF/WM/SOUR/STRR	RF Siren	Sounder strobe
356051	FI700/RF/STRRR	RF Siren	Strobe
251011	FI700/RF/PA	RF Ctrl.module no spv.	Remote indicator

The configuration of wireless elements is carried out at the RF Interface or via the PC software WirelEx. The setting of the sensitivity level of detectors is done in the same way.
In addition, the wireless elements are parameterised with PARSOFT. Therefor, only the element type is set.

3.15.5 Settings of the wireless detectors that are made with the parameterisation software WirelEx

Art.No.	Type	Element type in PARSOFT	Level	Mode	Sensitivity
241080	FI700/RF/O	RF Optical detector	High	O	3.1%/m
241192	FI720/RF/O		**Normal**	**O**	**3.8%/m**
241194	FI720/RF/O/700		Low	O	4.4%/m
242080	FI700/RF/T	RF Thermal detector	Fixed	Thermal detector class A1, 58°C	
242087	FI720/RF/T		**A1R**	**RoR detector class A1R, 58°C**	
242088	FI720/RF/T/700		High Temp	Thermal detector class B, 78°C	
241081	FI700/RF/OT	RF Opt./therm. detector	High	O	3.1%/m
241193	FI720/RF/OT		**Normal**	**O**	**3.8%/m**
241195	FI720/RF/OT/700		Low	O	4.4%/m
			Fixed	Thermal detector class A1, 58°C	
			A1R	**RoR detector class A1R, 58°C**	
			High Temp	Thermal detector class B, 78°C	

Watch out for the entries that are shown in bold. These are the only ones that comply with EN 54.

3.15.6 Parameterisation of signalling devices

This table shows the element type that is to be used in PARSOFT for the BC216. In the case of the Fire Detection Control Panel Series BC600, the elements have to be selected in PARSOFT by means of the exact type.

The following applies to the BC216:
If "activated by detector" is stated in the Remarks column, this alarming device will only be activated by the detector that is connected directly.

The following applies to the BC600:
If "activated by detector" is stated in the Remarks column, the parameter setup defines whether THIS detector or OTHERS as well will result in an activation. Depending on the setting for the parallel output, the following properties result:

- If the "**illuminate**" setting is retained, the activation will only be carried out via the connected detector.
- If "individual" is used, combinations can be parameterised.
- If the "intelligent" setting is used, the tone and the sound level of the FI750/WBRIB/ products can be entered via combinations.

Art. No.	Type	Element type in PARSOFT	Remark
355180	FI700/WM/SOUR	Loop siren	
355182	FI700/WM/MT/SOUR	Loop siren	
355183	FI700/WM/MT/SOUW	Loop siren	
355189	FI700/WM66/SOUR	Loop siren	IP66
355184	FI700/FBRI/MT/SOUW		activated by detector
355185	FI700/FB/MT/SOUW	Loop siren	
355192	FI700/FBRI/MT/SOUW/STRR		activated by detector
355187	FI700/WM/SOUR/STRR	Loop siren strobe	
355190	FI700/WM66/SOUR/STRR	Loop siren strobe	IP66
	FI750/M/SST & CWS/SOUx/STRC	Loop siren strobe	activated by a module
356050	FI700/WM/STRRR	Loop strobe	
355199	FI700/WB/MT/SOUW	Loop siren	
355200	FI700/WB/MT/SOUW/STRC	Loop siren	
355197	FI700/WBRI/MT/SOUW		activated by detector
355198	FI700/WBRI/MT/SSTWC		activated by detector
355202	FI750/WB/MT/SOUW	Loop siren	
355204	FI750/WB/MT/SOUW/STRC	Loop siren	
355201	FI750/WBRI/MT/SOUW		activated by detector
355203	FI750/WBRI/MT/SSTWC		activated by detector
355212	FI750/WBRIS/SOUW		activated by detector
355213	FI750/WBRIS/SSTWCW		activated by detector
355214	FI750/WBRIS/SSTWCR		activated by detector

These elements can only be used on the BC600 – with a detector with production date 2017/13 or later.

355215	FI750/WBRIB/SOUW	Only BC600	activated by detector
355217	FI750/WBRIB/SSTWCR	Only BC600	activated by detector
355216	FI750/WBRIB/SSTWCW	Only BC600	activated by detector

4 Analogue values - Condition of detectors/modules

The condition of the detectors and modules Series FI700/FI750 is determined by the combination of analogue values and the status message. The tables shown below only reflect the measurement value and their meaning. As a consequence, the status message of the element also has to be taken into consideration.

Example: Control module with supervised output
Value: 15

According to the table on page 331 in Chapter 4.3.3: "Control module with supervision – output" a value of 15 can indicate either a **short circuit** or a **broken wire** at the output. The effective condition is shown in the "Element Status" information.

This status information can be indicated by pressing the "?" button at the BC216/BC600 or via PARSOFT by means of the table "Element Status" where the readout of the analogue values takes place.

In contrast to the Fire Detection Control Panel Series BC600, the current degree of contamination of an automatic detector with optical component is not indicated on the display of a Fire Detection Control Panel Series BC216. By means of PARSOFT, the degree of contamination can be read out – this applies to both control panel types. For further information in this regard, see from page 334 onwards in Chapter 6: "Contamination detection and maintenance prognosis".

4.1 Function of the LEDs

4.1.1 Automatic detectors

Please keep in mind that the condition of the LED in the alarm state is defined by the programming of the control panel. The LED of an **automatic detector** has the following meaning:

LED-colour	Meaning
Yellow	Wrong type installed, double address, isolator active (BC600 only)
Red-blinking	Alarm state
Red	Alarm state

4.1.2 Modules

Note that the LED condition also depends on the programming of the fire detection control panel. The LED of a **module** has the following meaning:

LED-colour	Meaning
Yellow	Wrong type installed, double address, input/output fault, fault of the power supply
Red-blinking	Activation of the input
Red	Activation of the input
Green	Actuation of the output

4.1.3 Manual Call Points Series HFM/HME

LED-colour	Meaning
Yellow	Wrong type installed, double address, isolator active (BC600 only)
Red-blinking	Activation
Red	Activation
Green	Normal condition

4.2 Standard detectors

4.2.1 Optical smoke detectors

The table below applies to the detectors FI700/O and FI750/O.

Value	Meaning
0	Detector defective, removed or short circuit on the loop
1-191	Detector OK
>191	Alarm

The table below applies to FI750/O detectors with production code 2019/21 or later.

Value	Meaning
0	Detector defective, removed or short circuit on the loop
1-191	Detector OK
240	optical alarm
255	Magnet test

4.2.2 Thermal detector

The table below applies to the detectors FI700/T and FI750/T.

Value	Meaning
0	Detector defective, removed or short circuit on the loop
1-191	Detector OK
>191	Alarm

The table below applies to FI750/T detectors with production code 2019/21 or later.

Value	Meaning
0	Detector defective, removed or short circuit on the loop
1-191	Detector OK
232	Thermal DIFF alarm
234	Thermal MAX alarm
255	Magnet test

4.2.3 Optical-thermal detectors

The table below applies to the detectors FI700/OT and FI750/OT.

Value	Meaning
0	Detector defective, removed or short circuit on the loop
1-191	Detector OK
>191	Alarm

The table below applies to FI750/OT detectors with production code 2019/21 or later.

Value	Meaning
0	Detector defective, removed or short circuit on the loop
1-191	Detector OK
224	Optical alarm + thermal DIFF
226	Optical alarm + thermal MAX
232	Thermal DIFF
234	Thermal MAX
240	Optical alarm
255	Magnet test

4.2.4 Manual call points

The table below applies to the Manual Call Points (Series MCP / HFM / HME).

Value	Meaning
0	Detector defective, removed or short circuit on the loop
32	Detector OK
>191	Alarm

4.3 Modules

4.3.1 Conventional zone module – FI700/M1CZ

Value	Meaning
0	Module defective, removed, broken wire or short circuit on the loop
1-191	Module OK (idle)
>191	Alarm

4.3.2 Monitor module – input

Value	Meaning
0	Module defective, removed, broken wire or short circuit on the loop
1-31	Broken wire at the input
32	Idle
192	Alarm condition (Alarm, technical message, …)
250	Short circuit at the input

4.3.3 Control module with supervision – output

Value	Meaning
0	Module defective, removed, broken wire or short circuit on the loop
1-31	Broken wire or short circuit at the output
32	Module OK (active/not active)

4.3.4 Control module without supervision – relay output

Value	Meaning
0	Module defective, removed, broken wire or short circuit on the loop
32	Module OK (active/not active)

4.4 Sounders, strobes

Value	Meaning
0	Device defective, removed, broken wire or short circuit on the loop
32	Device OK (active/not active)

4.5 Remote indicator

Value	Meaning
0	Device defective, removed, broken wire or short circuit on the loop
32	Device OK (active/not active)

4.6 Wireless elements

4.6.1 RF Interface – FI7x0/RF/W2W

Value	Meaning
0	Device defective, removed, broken wire or short circuit on the loop
32	Device OK

4.6.2 Wireless manual call point – FI700/RF/MCP

Value	Meaning
0	Device defective, removed from base
32	Device OK (active/not active)

4.6.3 Automatic wireless detectors – FI7x0/RF/O, FI7x0/RF/T, FI7x0/RF/OT

Value	Meaning
0	Detector defective, removed from base
32	Idle
>191	Alarm

4.6.4 Wireless modules

4.6.4.1 Control Module – FI700/RF/M1REL

Value	Meaning
0	Module defective, case open or no external supply for control output
32	Module OK (active/not active)

4.6.4.2 Monitor Module – FI700/RF/M1IN

Value	Meaning
0	Module defective, case open, broken wire or short circuit at the input
32-191	Module OK (idle)
>191	Alarm condition

4.6.5 Wireless sounders, wireless strobes

Value	Meaning
0	Device defective
32	Device OK (active/not active)

4.6.6 RF remote indicator

Value	Meaning
0	Device defective
32	Device OK (active/not active)

5 Check of the loop lines

After completion of the installation work on the loop it is recommended that the entire loop cabling should be checked by means of the Loop Tester LTG30-1.

At that time, all loop elements should already be connected, because only then will the internal resistances of the isolators be considered as well.

The loop tester offers the advantage that the check can already be carried out prior to the connection or installation of the fire detection control panel.

The measuring method of the loop tester differs from that of the loop interfaces of the fire detection control panels. Therefore the results can be different, especially if the loop resistances exceed the permissible limit values.

If the permissible limit values of the loop lines are exceeded, it is – in spite of a fire detection system that works properly at the moment – not ensured that this trouble-free operation will also continue in the future. In this case you have to assume that even little changes can result in a huge number of fault messages.

Within the permissible values of the loop cabling, both measuring methods (the one of the loop interfaces as well as the one of the loop tester) achieve comparable measuring results.

You absolutely have to compare the indicated resistance value with the value that has been determined in the spreadsheet program. The maximum permissible loop resistance of your application can be considerably lower than the generally permissible loop resistance of 50Ω per core.

Further information about the use of the loop tester can be found in the User Manual LTG30-1, which is available in the download area of the LST website (after registration).

6 Contamination detection and maintenance prognosis

This part describes when the control panel will indicate a contamination – technical message – and how the detector replacement will be predicted. A contamination can only be found out by elements which have an optical sensing chamber. Heat detectors and manual call points as well as modules do not provide a contamination. Furthermore, this description does not apply to detectors that are connected in conventional technology.

The analogue value of Series FI700 or FI750 elements is not to be confused with the measured value of the contamination! These are two different measured values. Series FI700/FI750 elements have, for example, an analogue value of 32 (optical detectors, manual call points, ...) which CANNOT be used to determine the degree of contamination.

6.1 Series FI700/FI750 elements on the BC216 / BC600

Detectors, wired detectors as well as wireless detectors, respond with an estimate of their contamination. A value of 32 means that the detector is clean; in the case of a value of 192, the contaminated flag will be set in the device status. If the flag has been set, a technical message with the information that the detector is dirty will be output.

6.2 Maintenance prognosis

The maintenance prognosis indicates a detector's degree of contamination, or rather its contamination in the past months, and calculates when it will be necessary to replace a detector, provided that the contamination will progress at the same rate.

For the BC600 or PARSOFT-3, the following holds true: the % values (this is the degree of contamination) are recorded within 7 days, for 99 elements on average. If more elements have been installed, finding out the percentage takes longer because this process is based on the polling cycles.

In the case of the BC216, every 30 days an average value is calculated based on the contamination data (measured values), – this corresponds to the current contamination of the detector – and only after the mentioned period of time has elapsed will it be indicated on the control panel or in PARSOFT.

The above-mentioned monthly average values can be read out by means of PARSOFT and are shown in the historical columns of the read-out of measured values. The maintenance prognosis is created when 6 historical monthly average values are available. As method the linear regression is used.

6.3 Detection of detector replacement

When power is applied to the detector, the production date will be read out. If it differs from the one that has been read out last, a detector replacement will be detected.

If a detector replacement is detected, the detector's historical measured values will be discarded and the data for the calculation of the maintenance prognosis will also be reset. It is not necessary to confirm the detector replacement. The detector replacement is detected automatically. On the BC600, the historical course of the detector's measured values (contamination) can be deleted individually.