

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, 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 Ges.m.b.H. 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 can not 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 of this chapter apply to the following control panels, considering the indicated conditions:

- 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 BC06 - The 5.6kOhm end-of-line resistor must be parameterised. In the case of the Series BC06 it is not possible to use address modules.

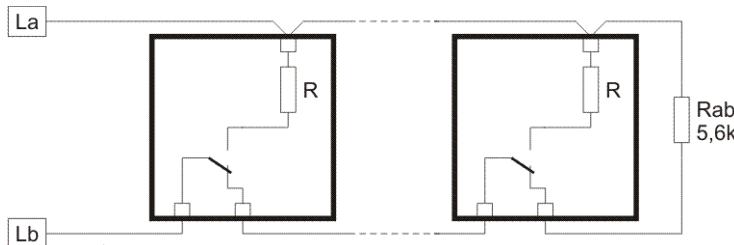
 If a different end-of-line element than the one mentioned above is used, the connection has to be adapted. The explanations and drawings refer to an end-of-line element of 5.6kOhm.

 **If a conventional zone gets disabled, all detectors that are connected to it are put out of action. In this case, alarms can not 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

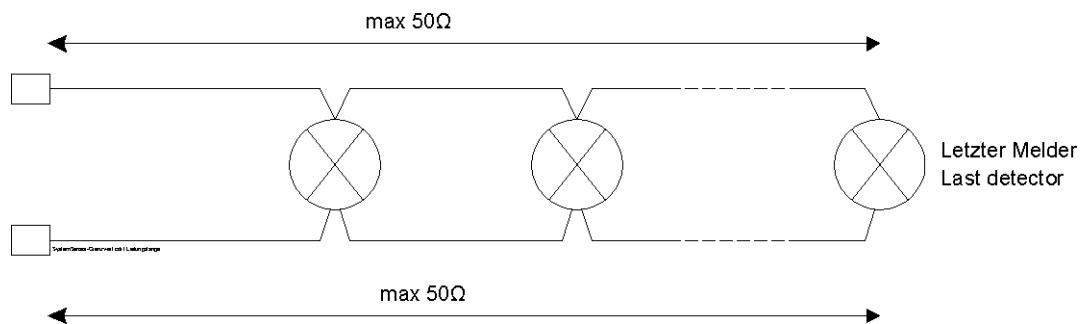
To evaluate the condition of a zone, the line current is sensed. The measured value is processed by the microcontroller and the corresponding condition of the zone is determined. For the threshold values for alarm, wire breakage and short circuit, please refer to the documentation of the fire detection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

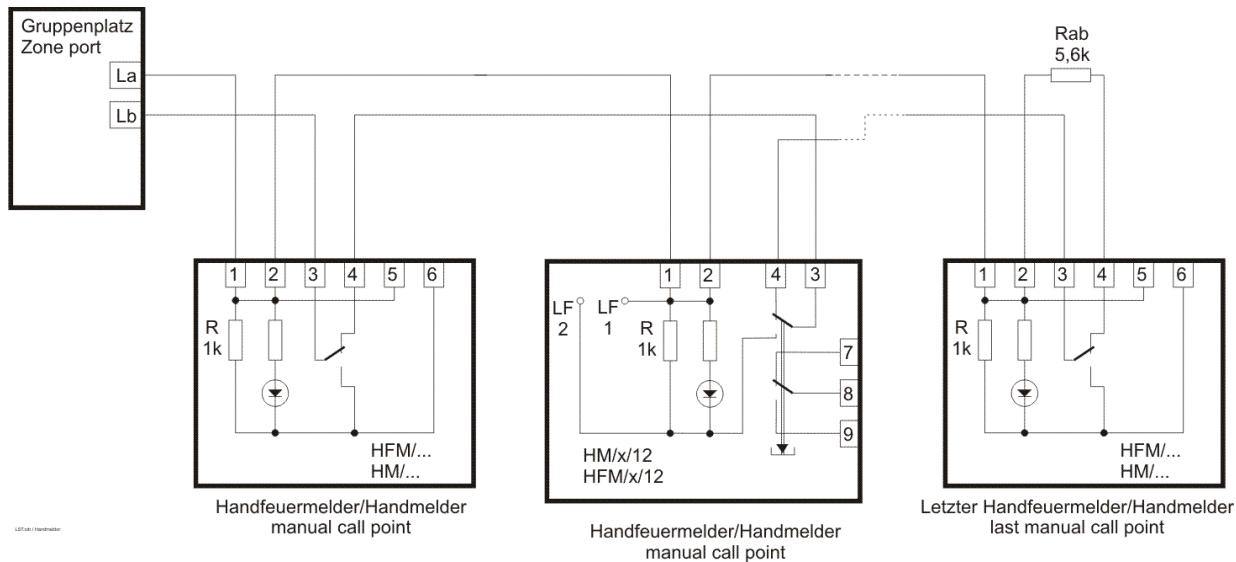
Description	Type
Manual Call Point/Red/Conv	HFM/3/11/xx
Manual Call Point (others)	HFM/3/12/xx
Manual Call Point/Blue/Conv/Hausalarm	HM/5/11/02/xx
Manual Call Point/Yellow/Conv/Lösch.	HM/1/11/05/xx
Manual Call Point/Blue/Conv/Stop	HM/5/11/18/xx
Manual Call Point/Yellow/Conv/Handausl.	HM/1/11/17/xx
Manual Call Point (others)	HM/x/11/xx/xx
Manual Call Point (others)	HM/x/12/xx
Manual Call Point/Red/Standard	UNI3021C

Each manual call point has a built-in alarm resistor ($R=1\text{k}\Omega/0.35\text{W}$). In the last manual call point, an end-of-line resistor ($R_{ab}=5.6\text{k}\Omega$) has to be installed.

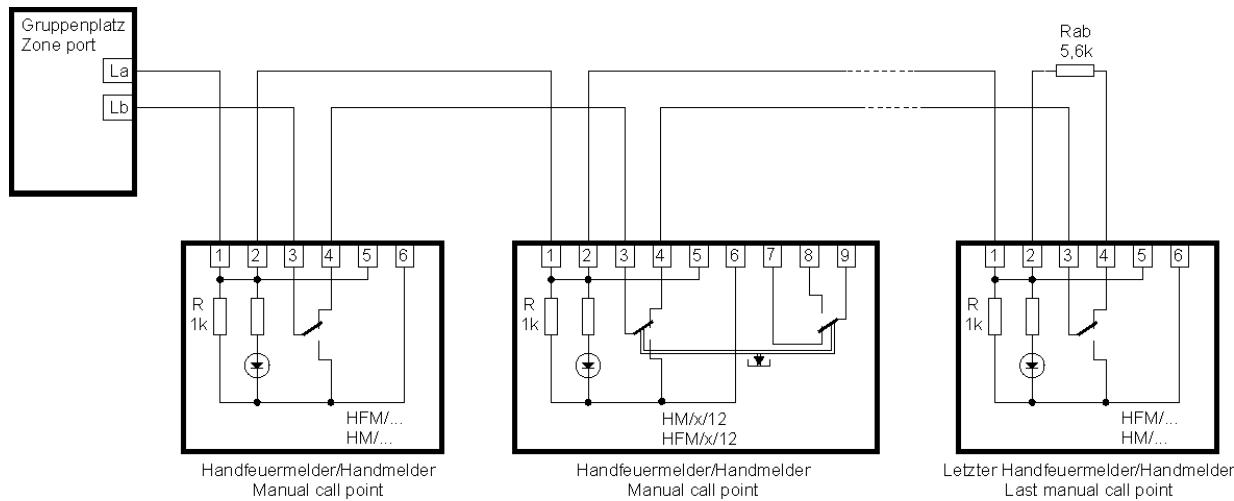
All diodes that are not denoted are of type 1N4004.

2.2.1 Connection

2.2.1.1 Old version of the manual call points with 2 switches

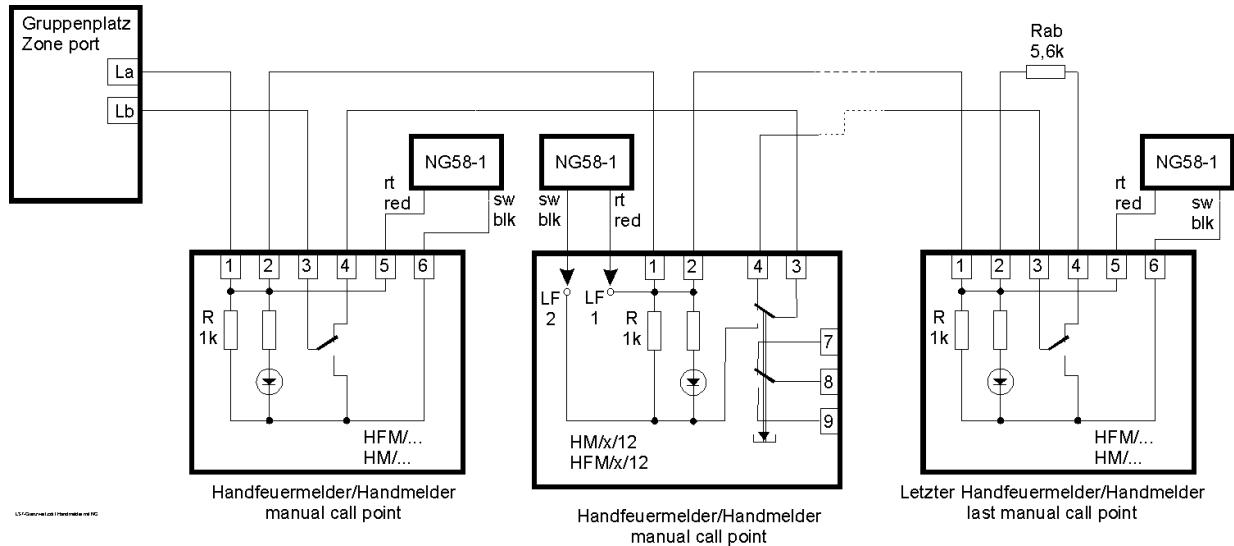


2.2.1.2 New version of the manual call points with 2 switches

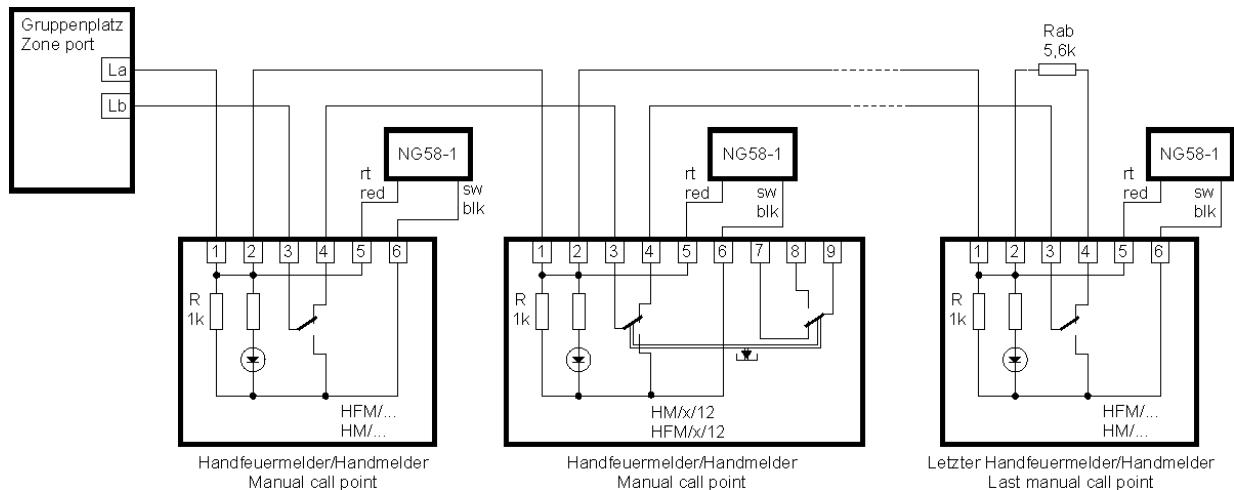


2.2.2 Connection of manual call points with individual Address Module NG58-1

2.2.2.1 Old version of the manual call points with 2 switches

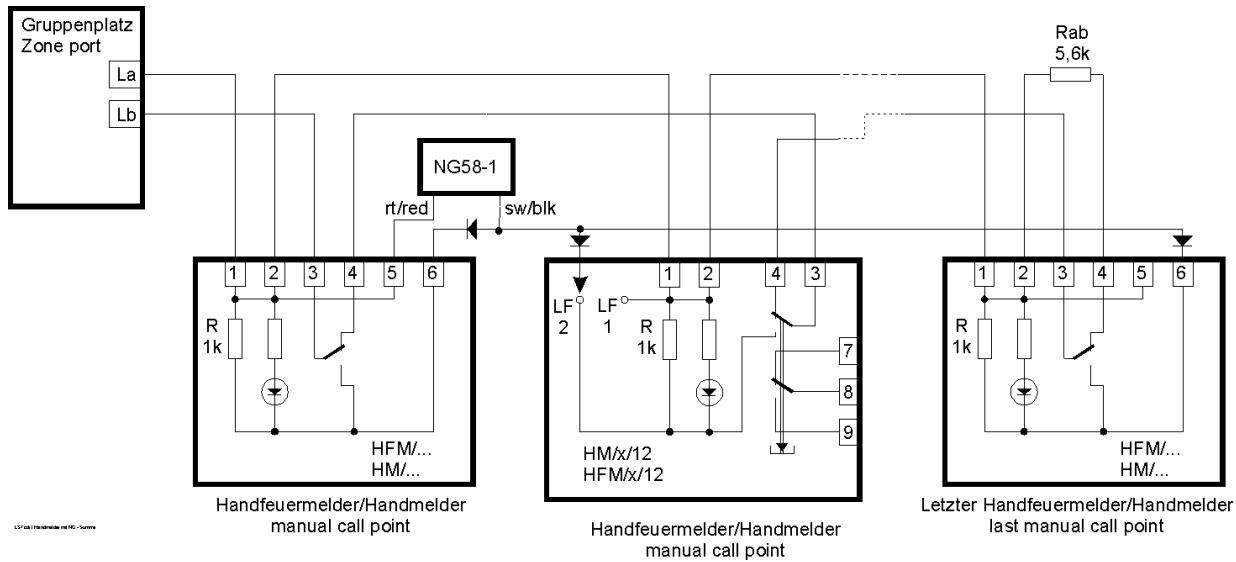


2.2.2.2 New version of the manual call points with 2 switches

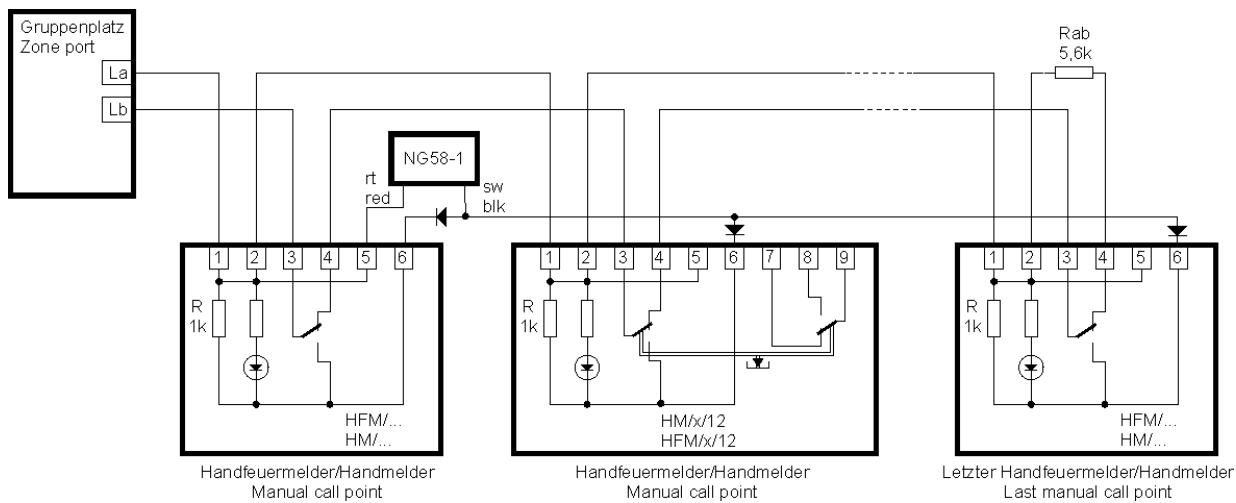


2.2.3 Connection of manual call points with Address Module NG58-1 – sum indication

2.2.3.1 Old version of the manual call points with 2 switches



2.2.3.2 New version of the manual call points with 2 switches



2.3 Connection of automatic detectors

2.3.1 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 zone	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.

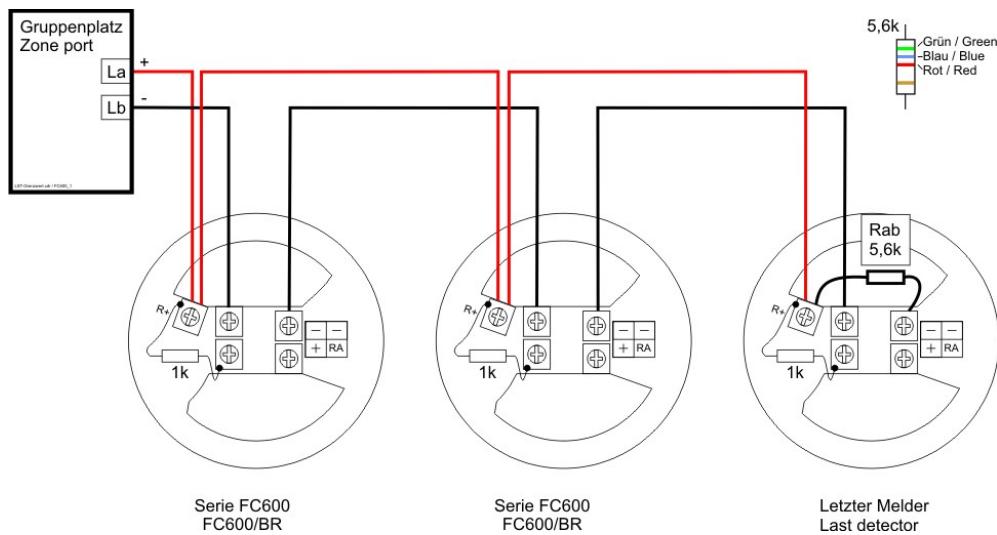
2.3.1.1 Arrangement of wires in Detector Base FC600/BR, FC600/BRD, FC600/BREL

Strip the insulation just as short as the terminal requires for connection. The alarm resistor $R=1\text{k}\Omega$ 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.

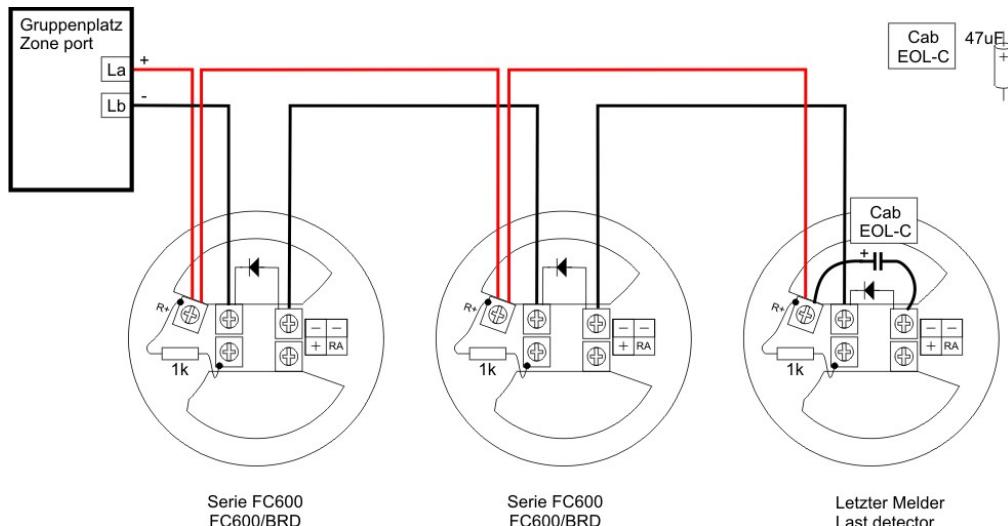
The removal of a detector from the Detector Base FC600/BR will open the conventional zone and a fault (broken wire) will be displayed at the panel.

Using the Detector Base FC600/BRD, that has a built-in diode, prevents the conventional zone to be 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 instruction please consult the corresponding manual of the fire detection control panel.

2.3.1.2 Connection



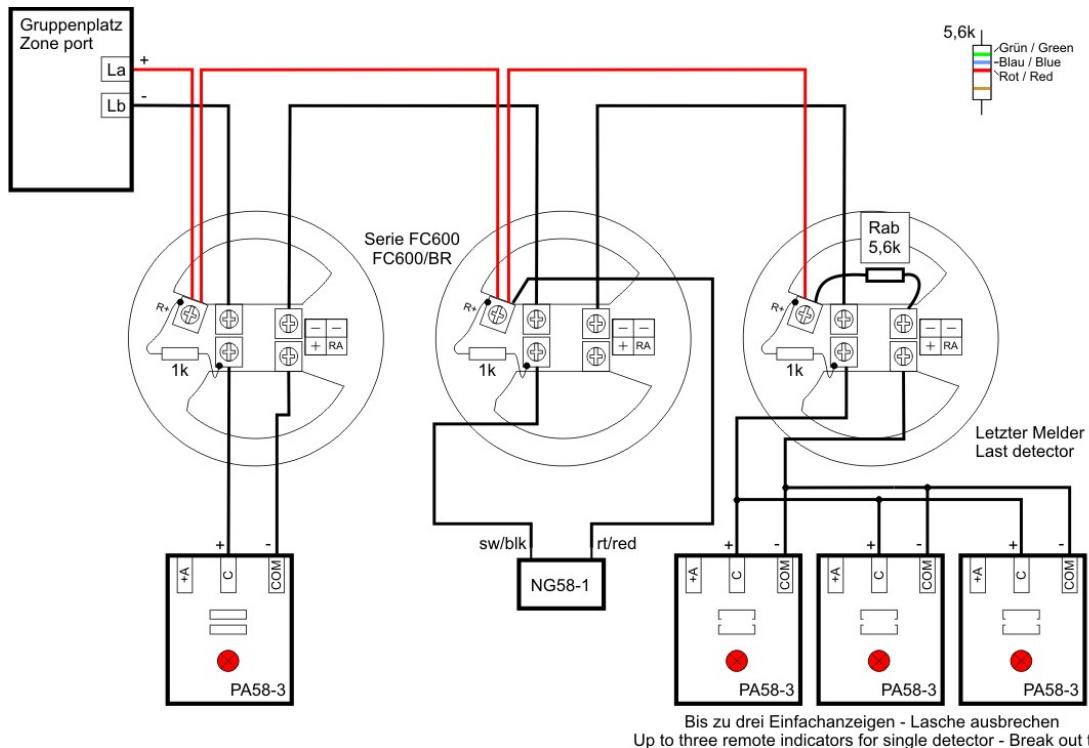
2.3.1.3 Connection with Diode Base FC600/BRD



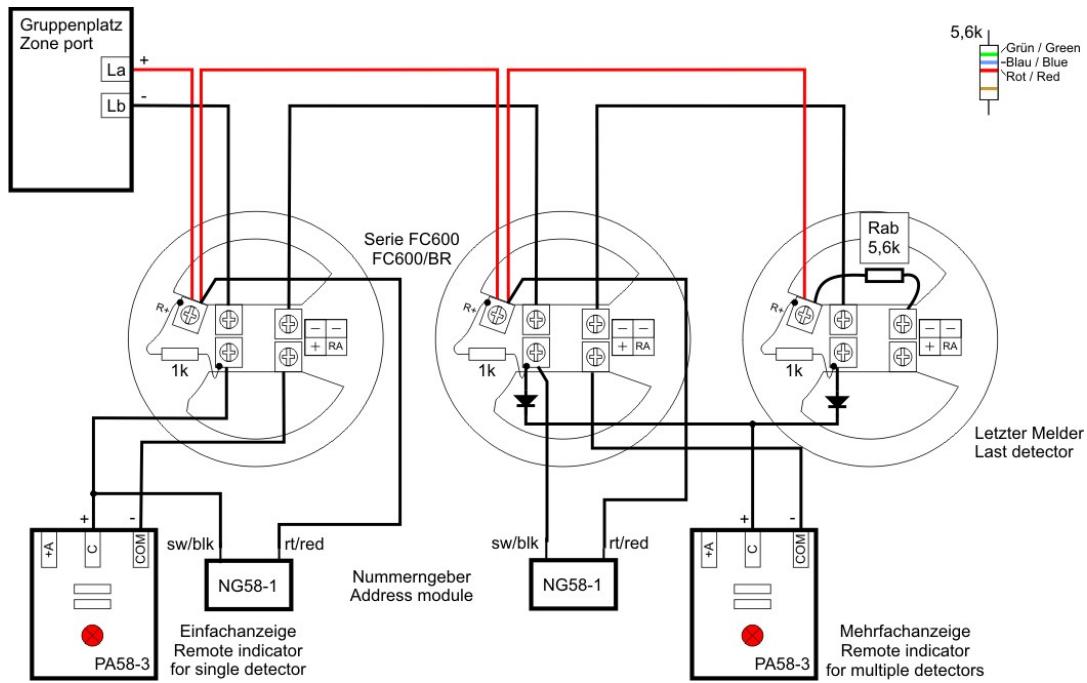
The Detector Base with integrated diode must only be used with a capacitive end-of-line element. At the moment only the BC06 and the BC600 can fulfil this requirement. The installation of diode bases with end-of-line resistors is not allowed. A capacitor must be parameterised as an end-of-line element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

2.3.1.4 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.

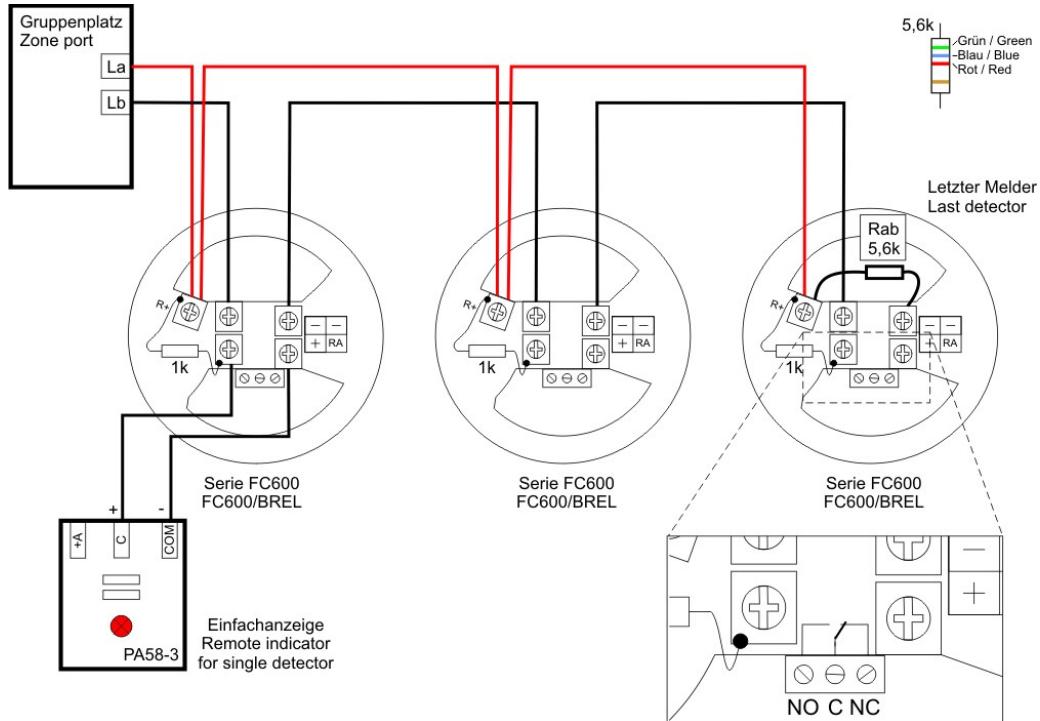


2.3.1.5 Connection of detectors with Remote Indicator PA58-3 and Address Module NG58-1



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.

2.3.1.6 Connection of detectors with Relay Base FC600/BREL



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

2.3.2 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 zone	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.

In the case of 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 85.



At the time of shipment, the class according to EN54-5 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.

2.3.2.1 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.

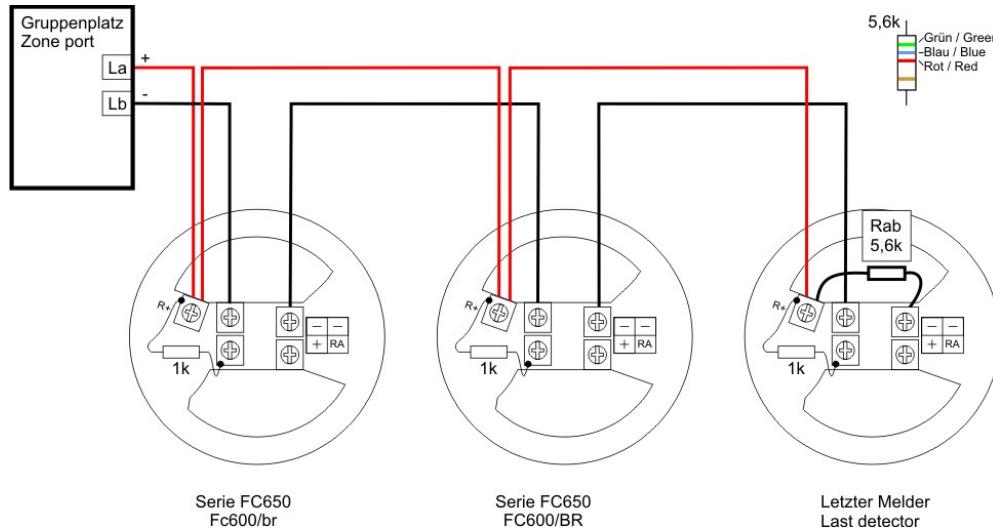
The removal of a detector from the Detector Base FC600/BR will open the conventional zone and a fault (broken wire) will be displayed at the panel.

Using the Detector Base FC600/BRD, that has a built-in diode, prevents the conventional zone to be 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 instruction please consult the corresponding manual of the fire detection panel.

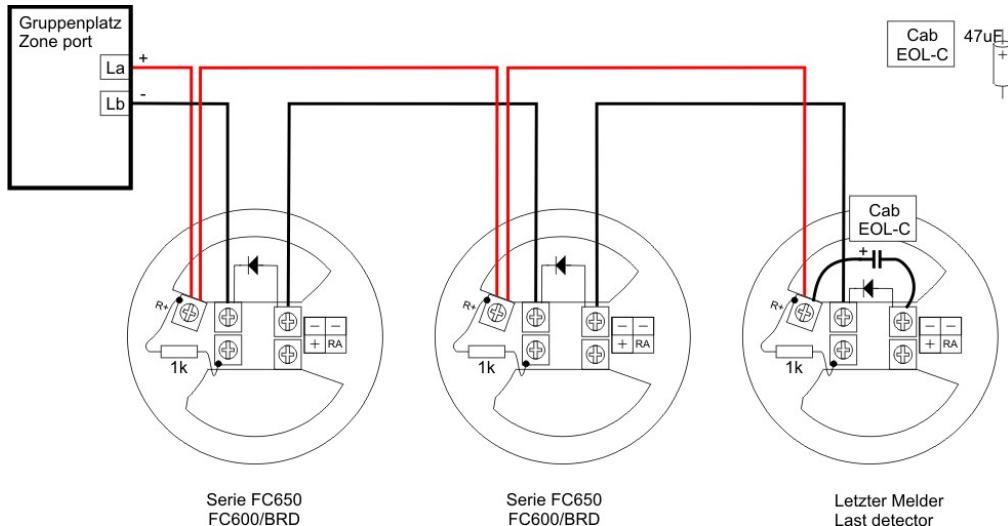


If a Remote Indicator PA58-3 is used, a series resistor 1kOhm has to be inserted between terminal „RA“ of the detector base and the Remote Indicator PA58-3. Since detector production code 2011/48, the series resistor can be omitted.

2.3.2.2 Connection



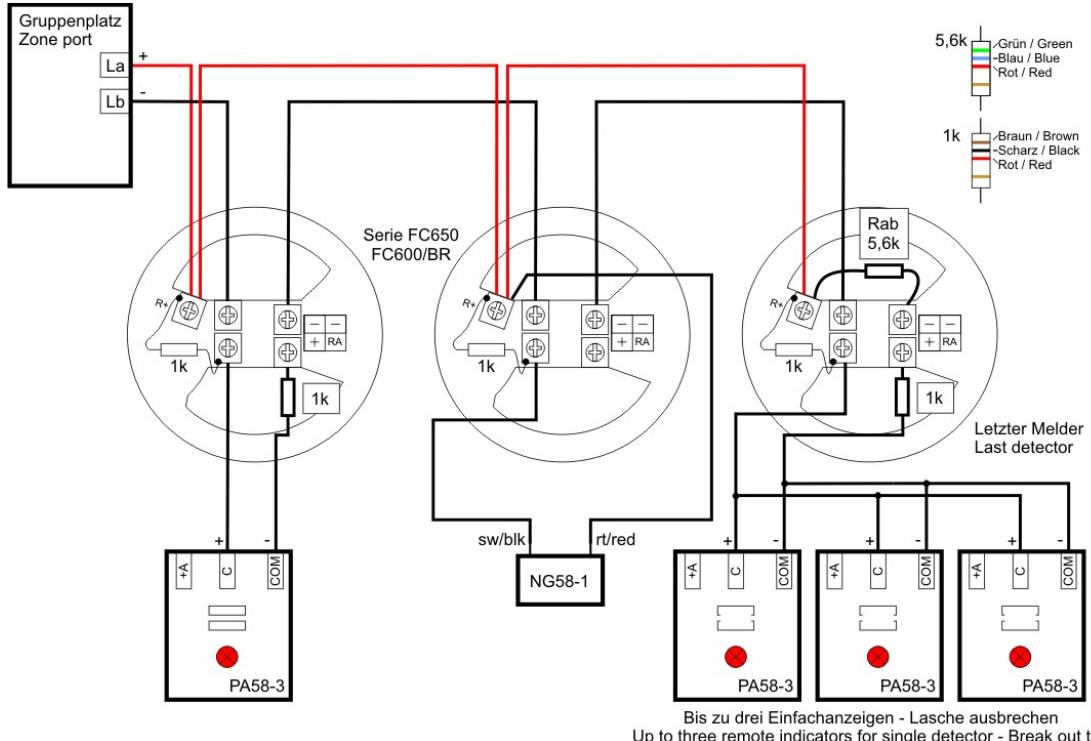
2.3.2.3 Connection with Diode Base FC600/BRD



The Detector Base with integrated diode must 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. A capacitor must be parameterised as an end-of-line element in the settings of the control panel.

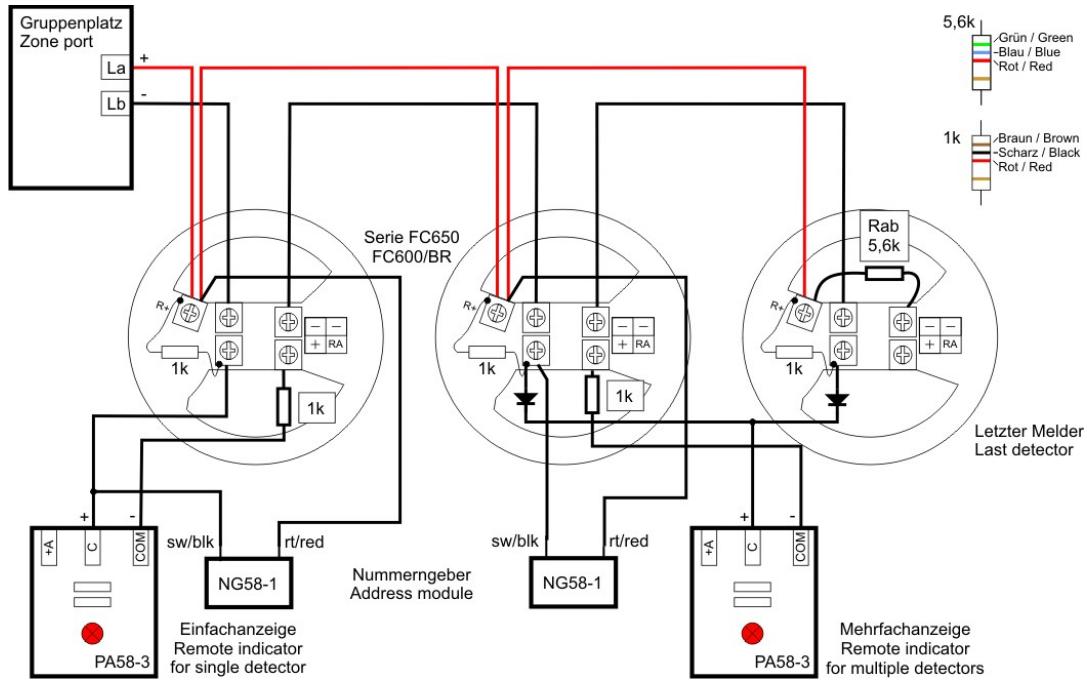
2.3.2.4 Connection of detectors with Remote Indicator PA58-3 and Address Module NG58-1

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.

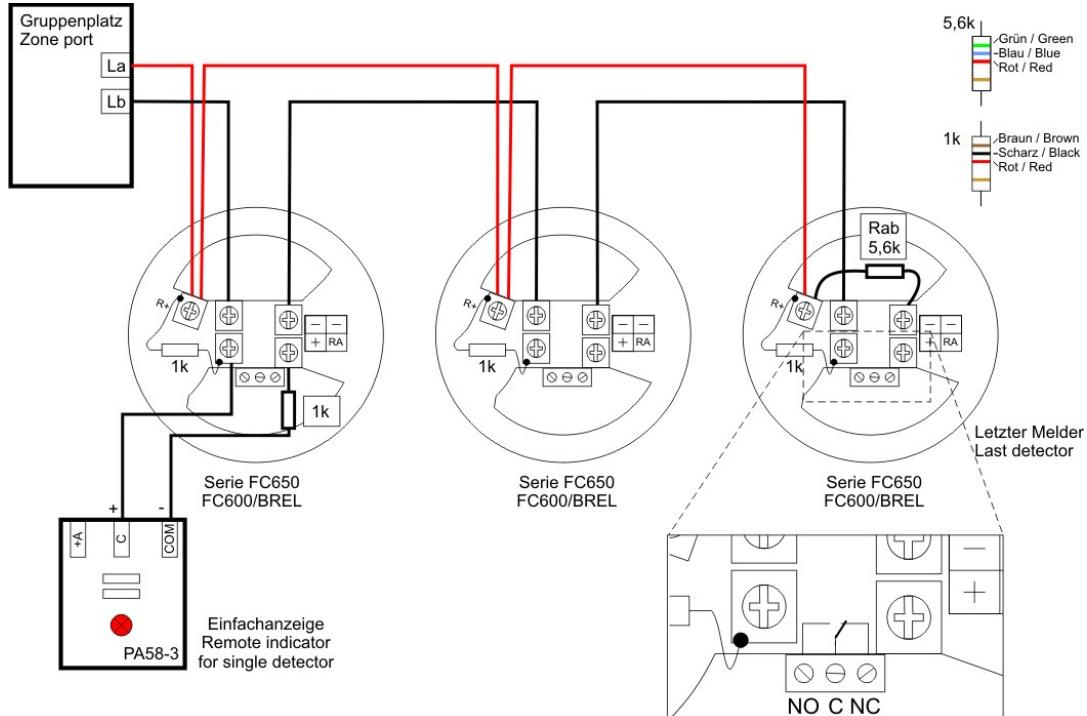
2.3.2.5 Connection of detectors with Remote Indicator PA58-3 and Address Module NG58-1



! 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.

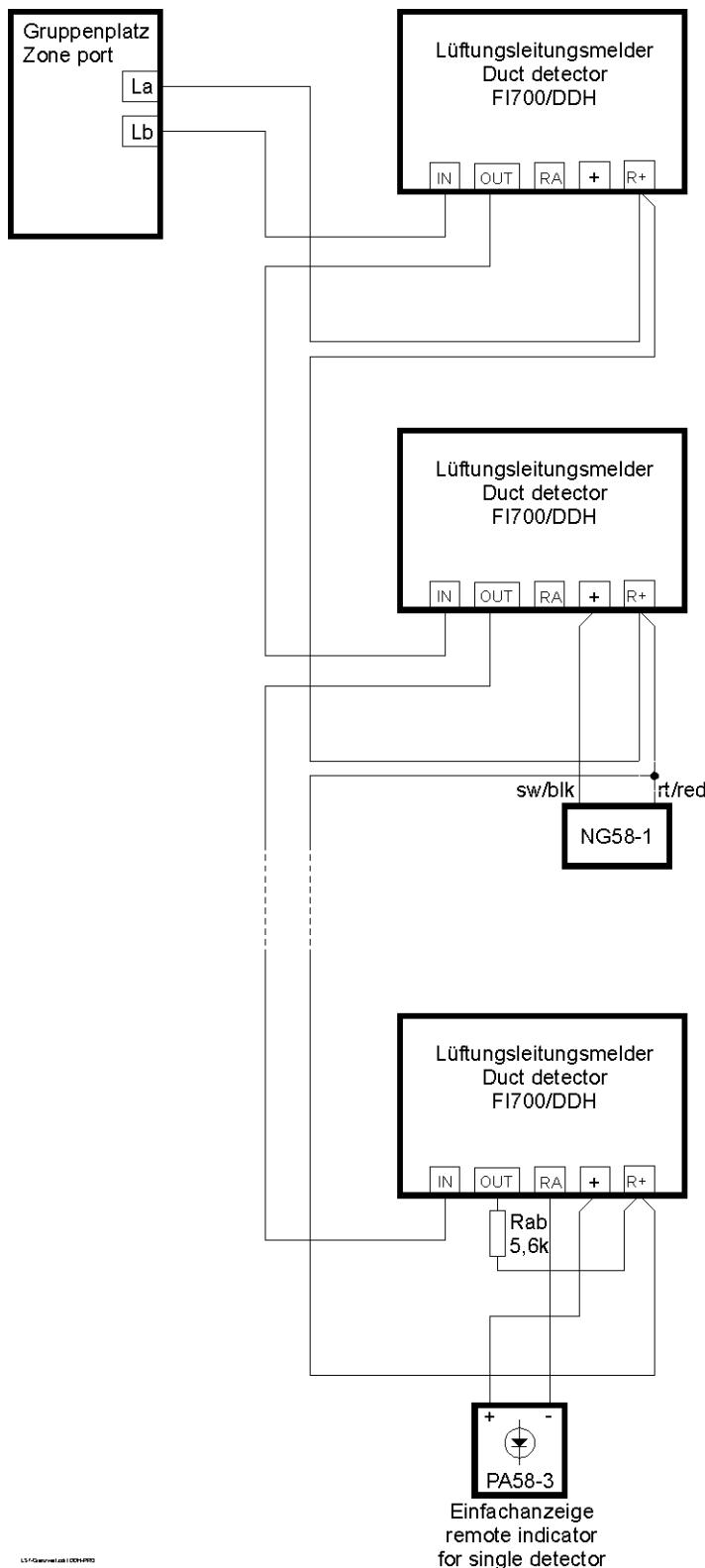
2.3.2.6 Connection of detectors with Relay Base FC600/BREL



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.

2.3.3 Connection of Duct Detectors FI700/DDH



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.

2.4 Intrinsically safe detection circuits

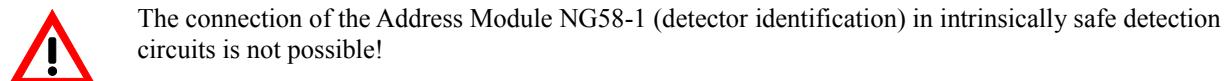
The

- ◆ 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
- ◆ 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.



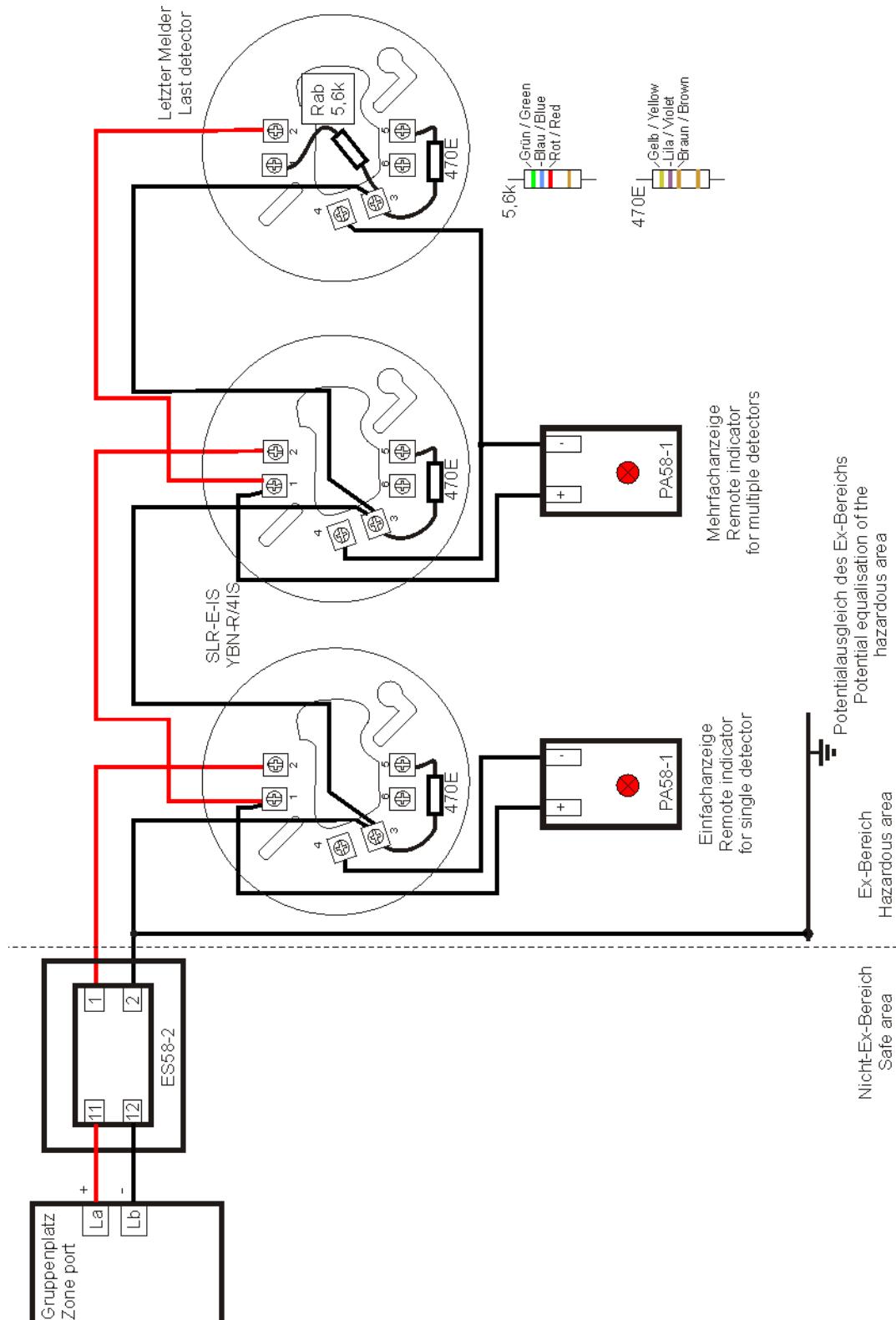
Allowed number of Optical Smoke Detectors SLR-E-IS	20
Allowed number of Thermal Max Detectors 6295 / 6296	32
Allowed number of Series ORBIS I.S. detectors	28
max. capacitance IIA (IIB)	880nF (330nF)
max. inductance IIA (IIB)	33.6mH (12.6mH)
max. ratio inductance/resistance IIA (IIB)	440µH/Ohm (165)
Connection of Remote Indicators PA58-1	possible
Detector identification (address module)	not possible
Earth fault detection at the fire detection control panel possible	yes
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)

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

Detectors in hazardous areas 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 and close to the hazardous area.

2.4.1 Optical Smoke Detector SLR-E-IS with Safety Barrier ES58-2



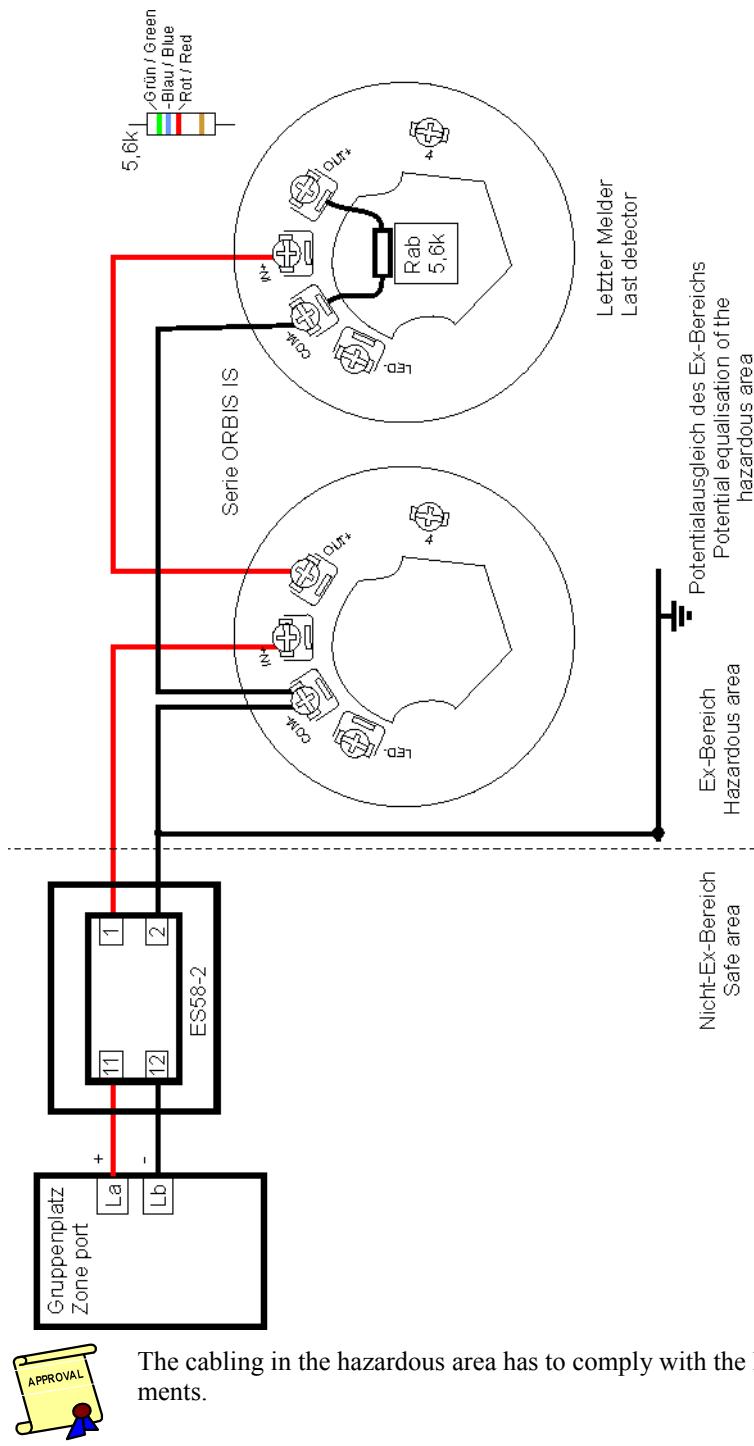
The cabling in the hazardous area has to comply with the local regulations, guidelines and requirements.

2.4.2 Automatic detectors Series ORBIS I.S.

The connection shown below applies to the following detectors:

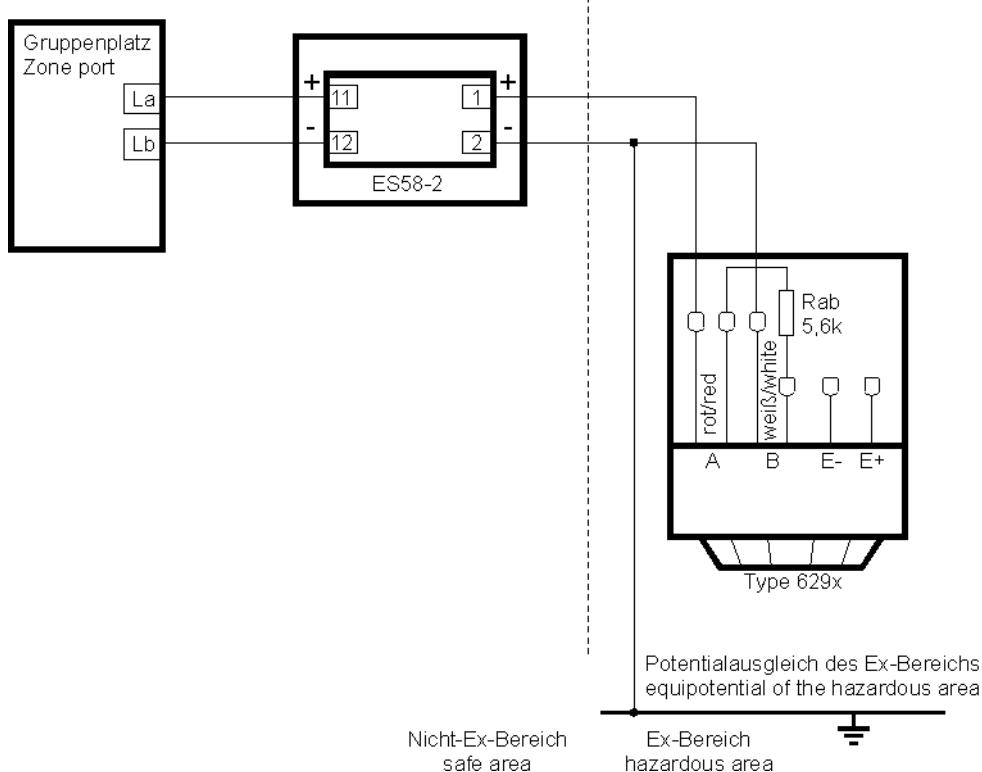
- ◆ Optical Smoke Detector OP-52027
- ◆ Optical-Thermal Detector OH-53027
- ◆ Thermal Detector HT-51145 (A1R)
- ◆ Thermal Detector HT-51157 (A1S)
- ◆ Thermal Detector HT-51147 (A2S)
- ◆ Thermal Detector HT-51149 (BR)
- ◆ Thermal Detector HT-51151 (BS)
- ◆ Thermal Detector HT-51153 (CR)
- ◆ Thermal Detector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

2.4.3 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.



2.4.4 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.

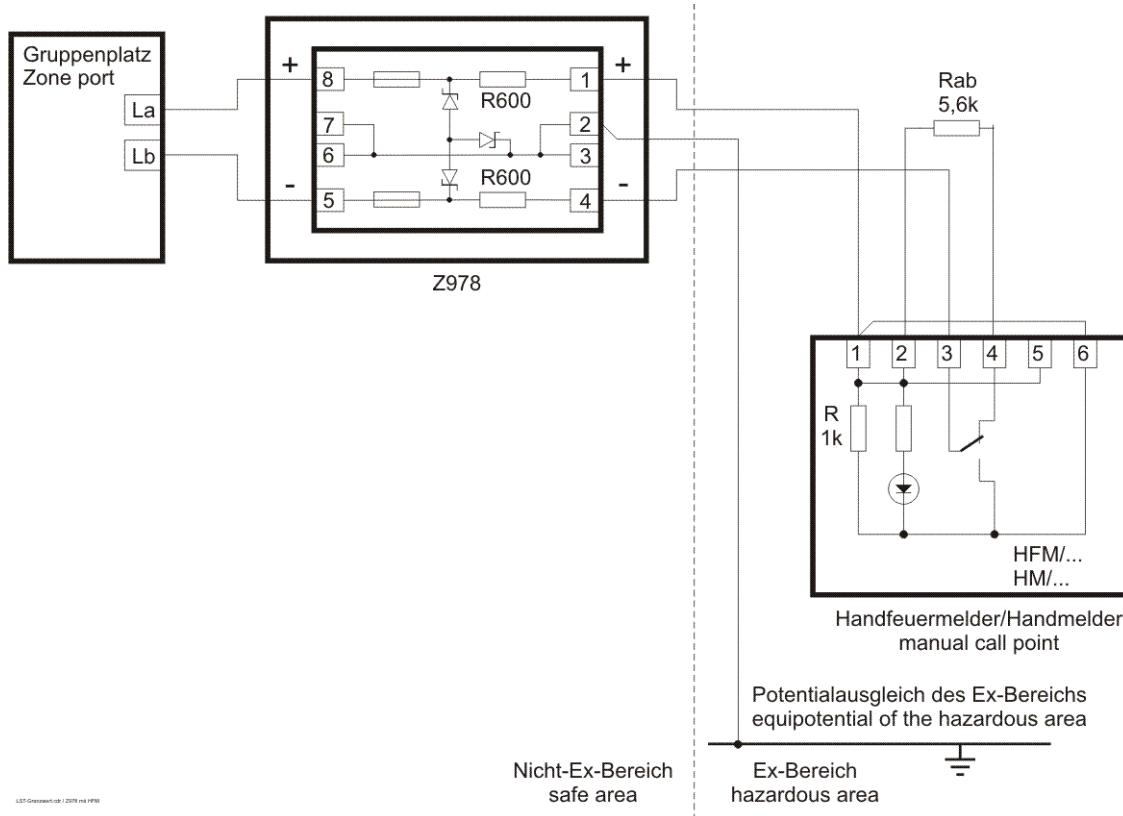
The thermal detectors and manual call points that can be used in hazardous areas are listed below.

Description	Type	max. number per detector zone
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/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

2.4.4.1 Manual call point with Zener Barrier Z978

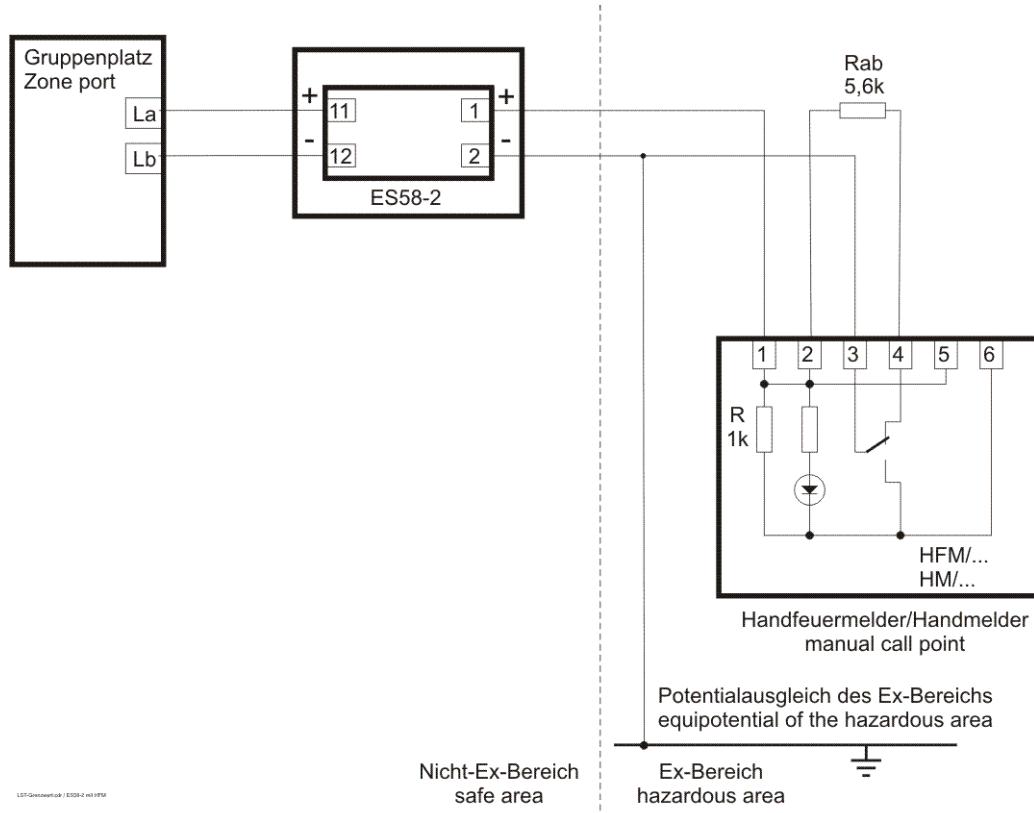
This drawing gives a fundamental description of the connection. Because of the two 600 Ohm resistors inside the safety barrier, the alarm resistor of the call point has to be bypassed by connecting terminal 1 with terminal 6. When using a different manual call point the connection diagram will be different.

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



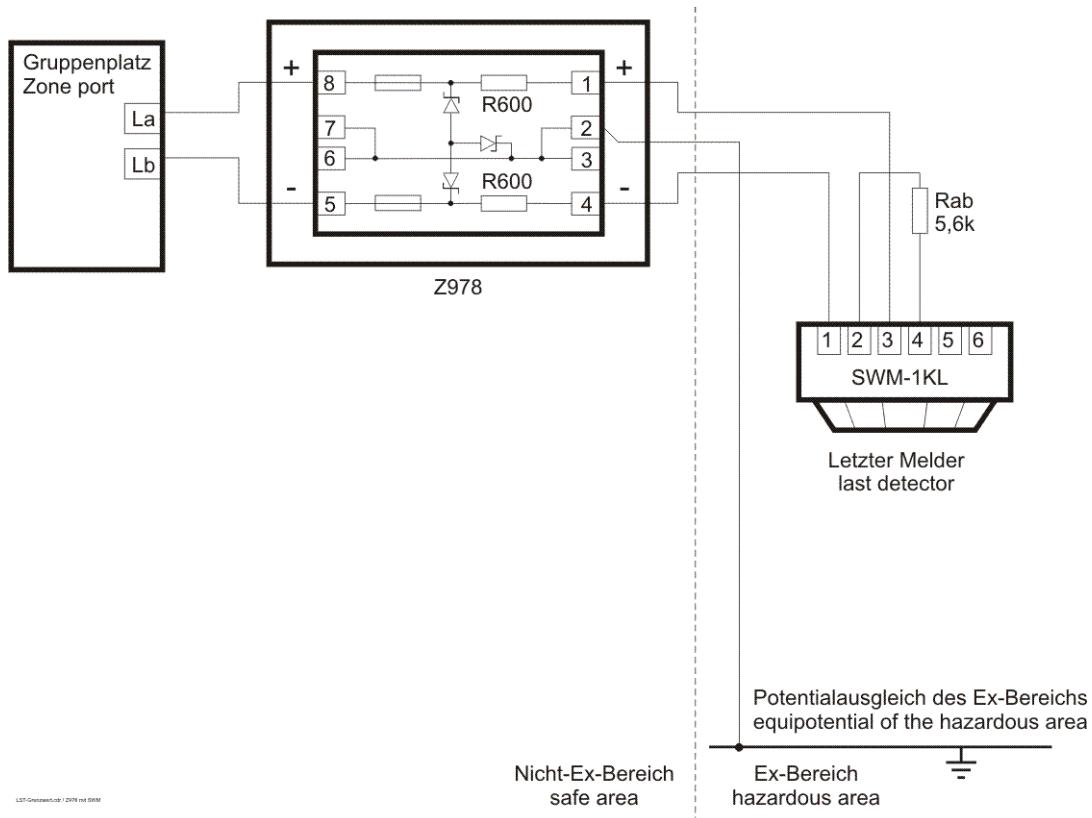
The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

2.4.4.2 Manual call point with Safety Barrier ES58-2



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

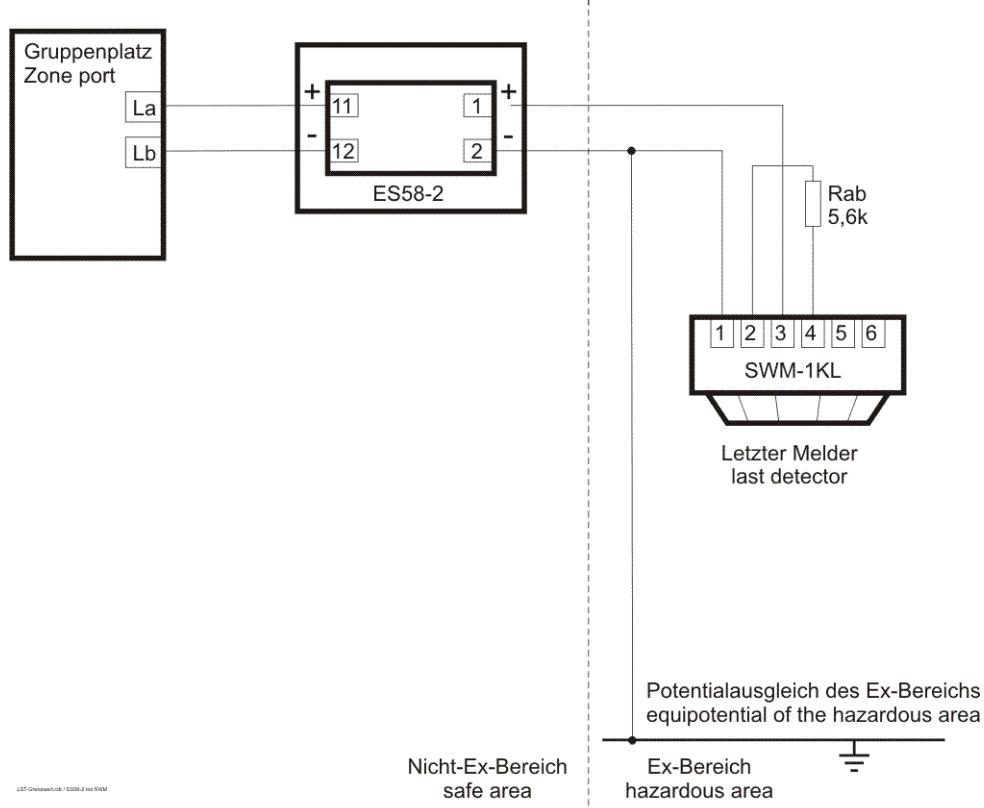
2.4.4.3 Thermal max detector with Zener Barrier Z978



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



2.4.4.4 Thermal max detector with Safety Barrier ES58-2



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

2.5 Intrinsically safe detectors for hazardous areas

2.5.1 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

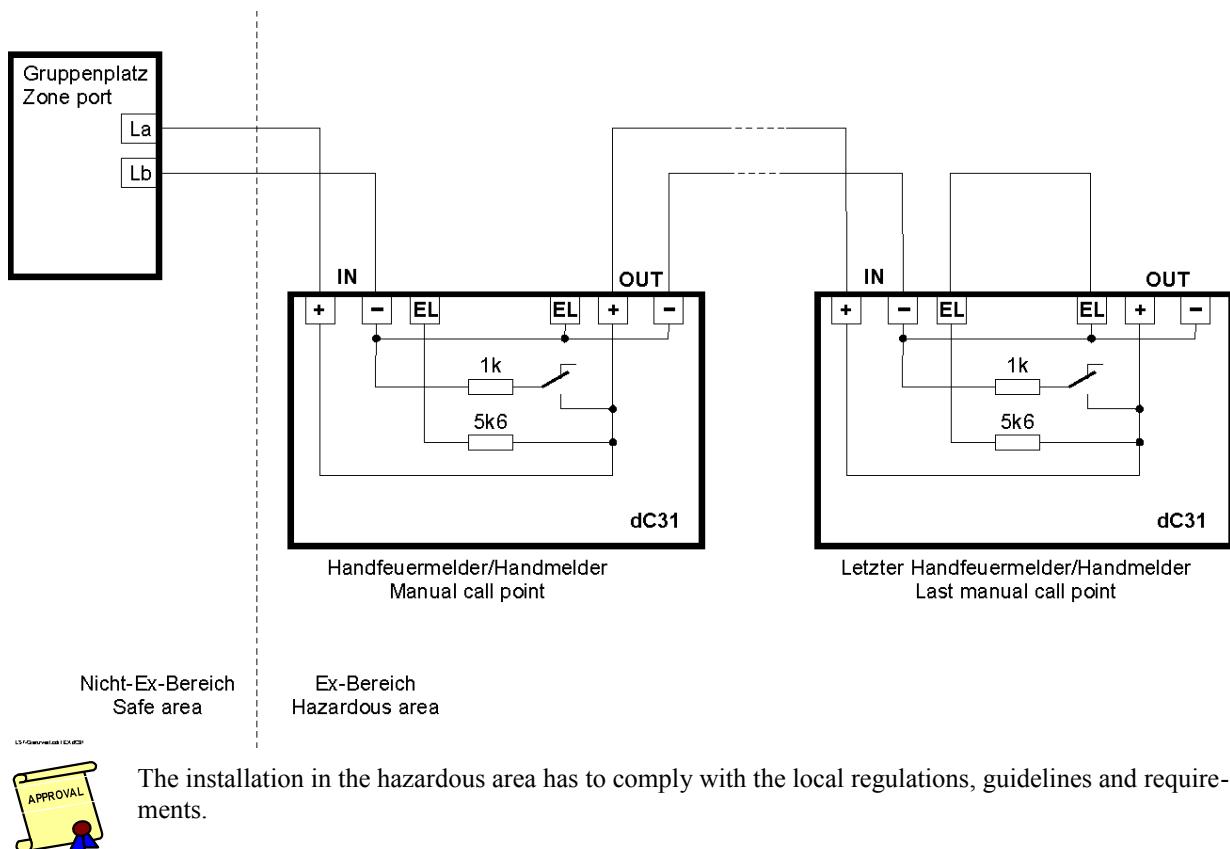
2.5.1.1 Manual Call Point dC31



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 can not 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.



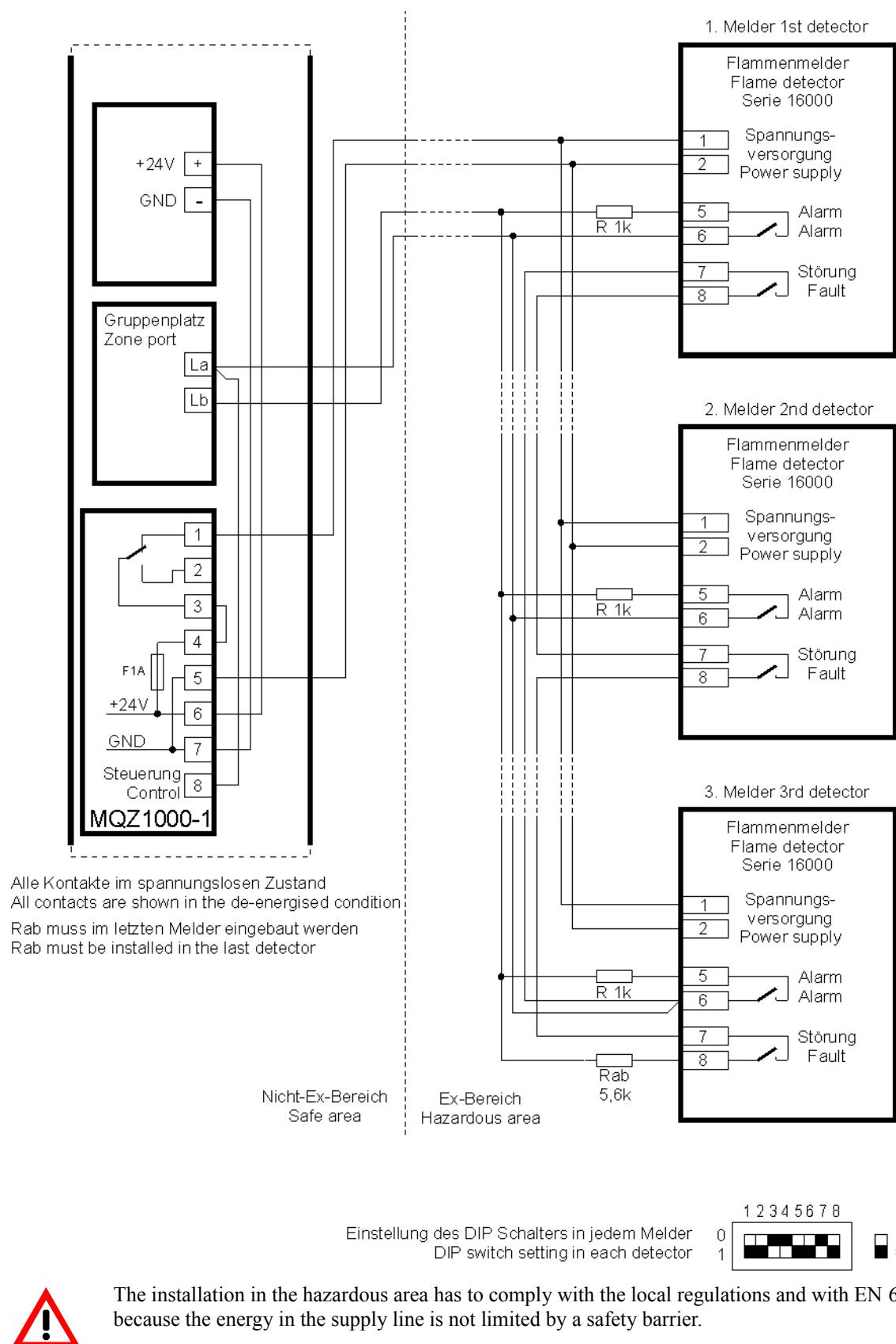
2.5.2 Flame detectors for hazardous areas

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	EN54-10 Class 1	SW6	SW7	Response time
16511	IR2	0	0	8s
16519	IR3	1	0	4s
16521	UV/IR2	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.

2.5.2.1 Flame Detectors Series 16000



2.6 Connection of Series FI700/RF radio detectors

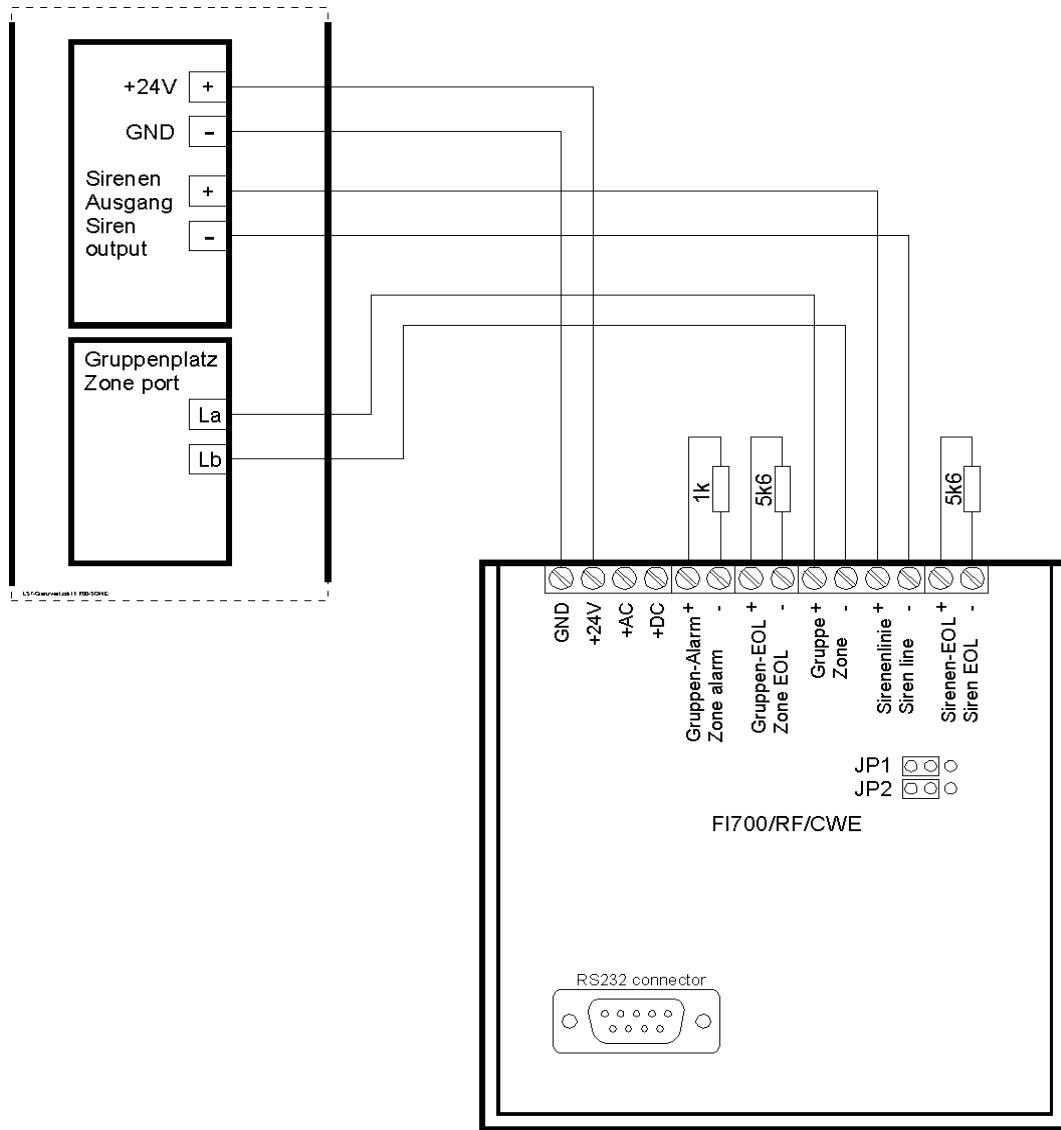
In order to be able to use radio detectors Series FI700/RF, you first have to install a radio interface. Also see the User Manual „RF fire detection system FI700/RF“.

2.6.1 RF Interface FI700/RF/CWE

2.6.1.1 Notes

- ◆ Please consult the manual of the radio interface to obtain relevant information about how to link a radio detector to the interface.
- ◆ Note the maximum supported number of 32 detectors.

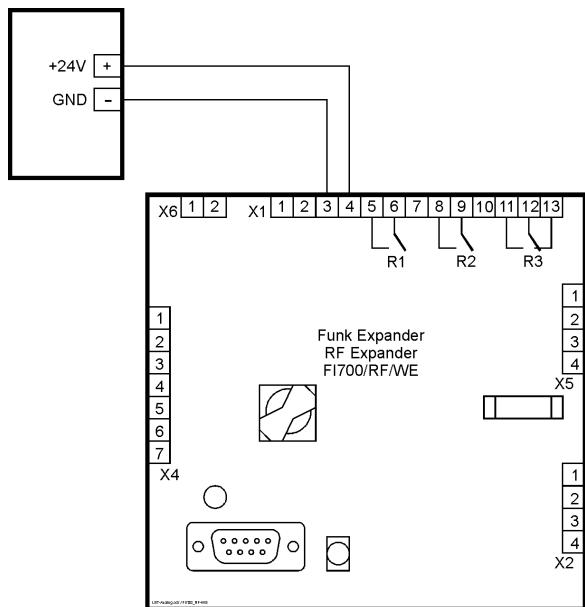
2.6.1.2 Connection



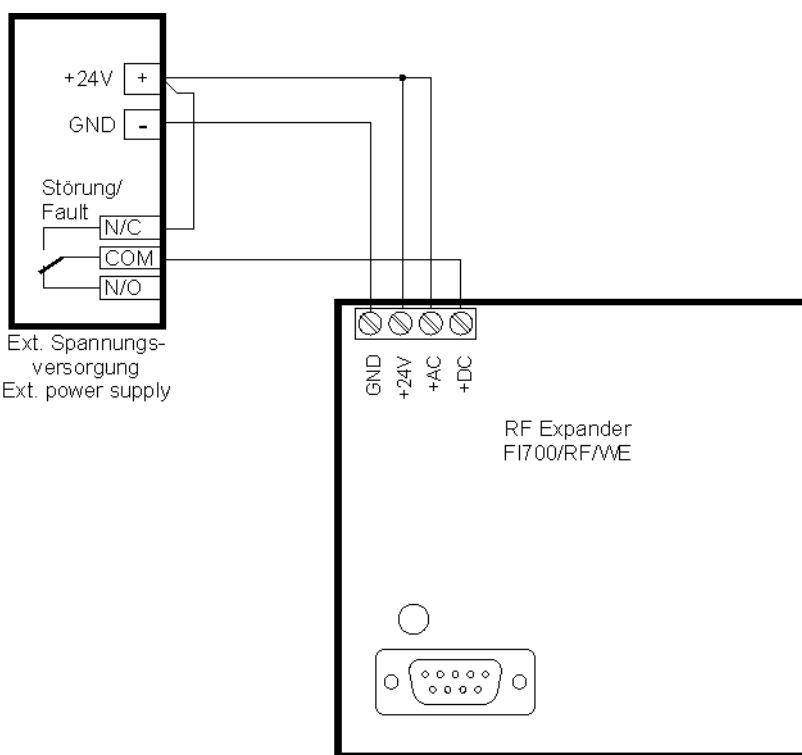
2.6.2 RF Expander FI700/RF/WE

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

2.6.2.1 Connection – old version



2.6.2.2 Connection – new version



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

2.7 Connection of special detectors

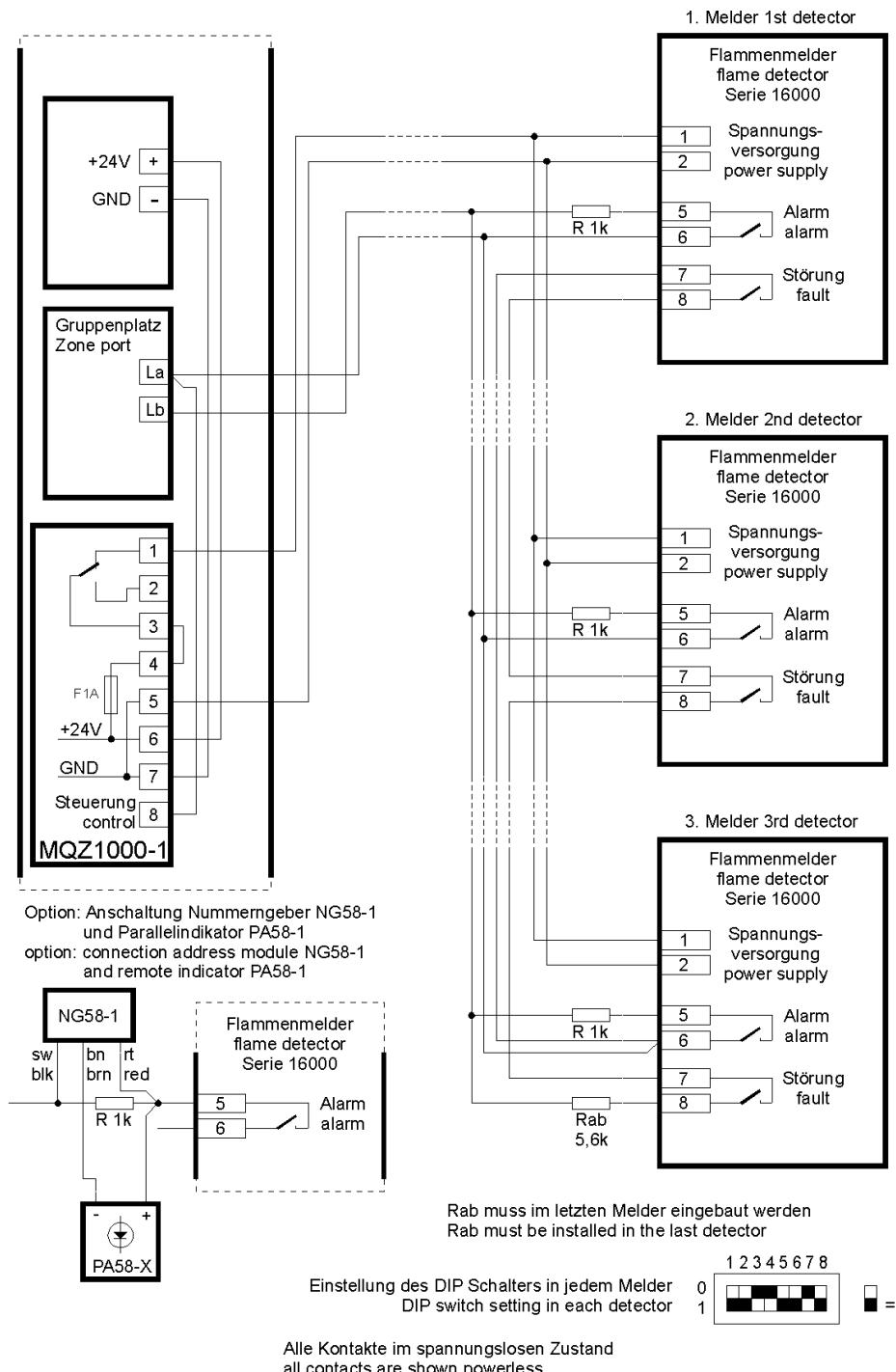
2.7.1 Flame Detector Series 16000

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	EN54-10 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

2.7.1.1 Connection



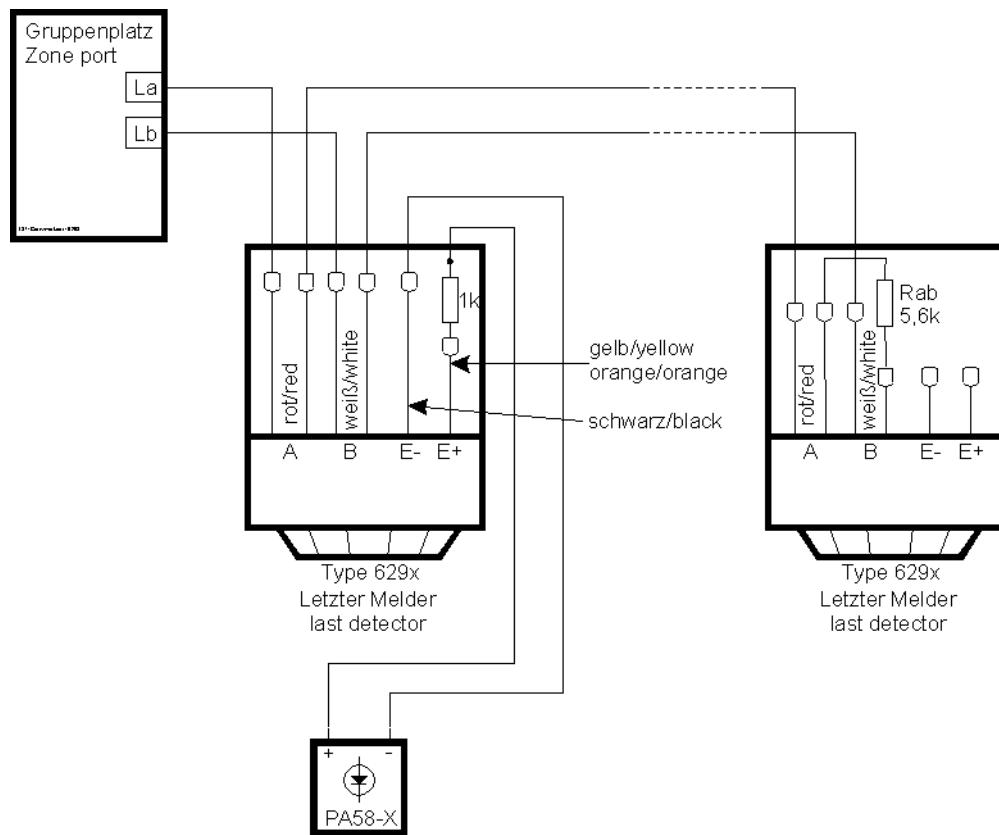
2.7.2 Thermal Detectors 6295, 6296, 6297 and 6298

2.7.2.1 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

2.7.2.2 Connection



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



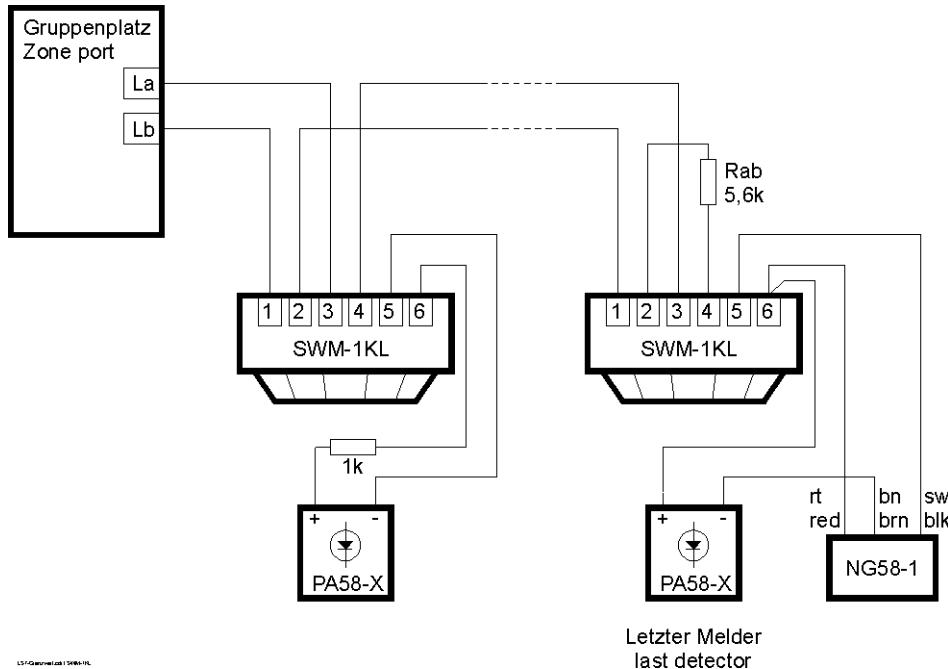
2.7.3 Thermal Max Detector SWM-1KL

2.7.3.1 Notes

The maximum number of detectors of a zone is not limited by the detector, as it contains a thermal normally open contact (bimetallic strip). Therefore the quiescent current of a detector is 0.

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

2.7.3.2 Connection



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

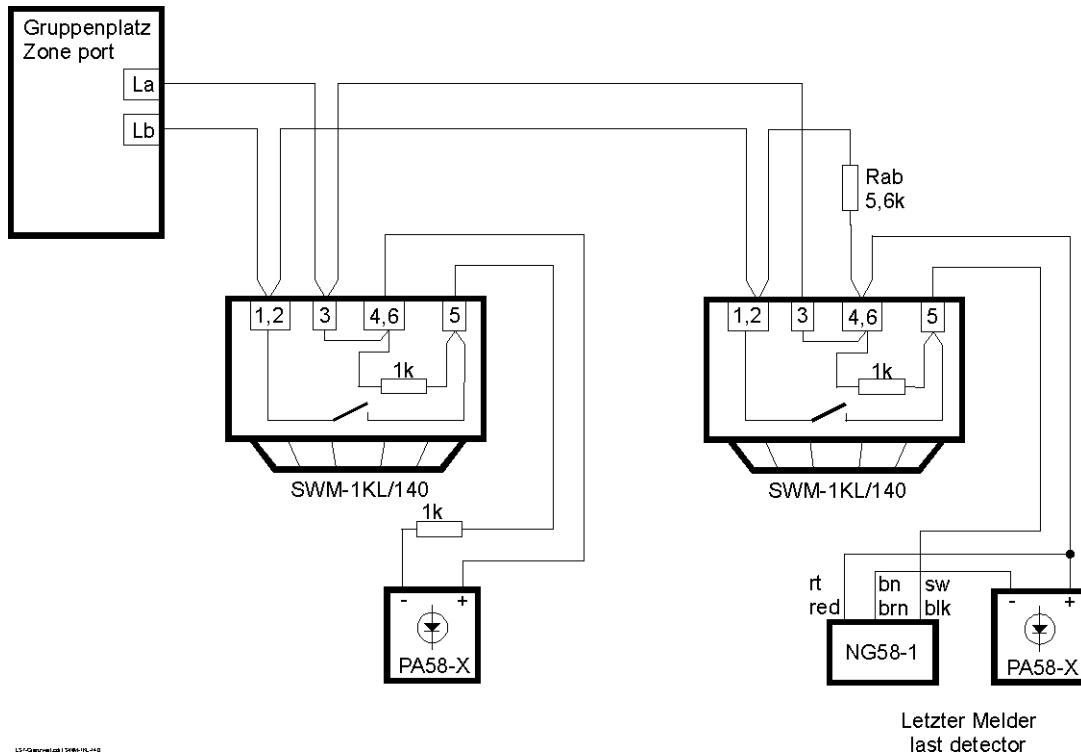


2.7.4 Thermal Max Detector SWM-1KL-140

2.7.4.1 Notes

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

2.7.4.2 Connection



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



2.7.5 Thermal detector HT-27121-275

2.7.5.1 Notes

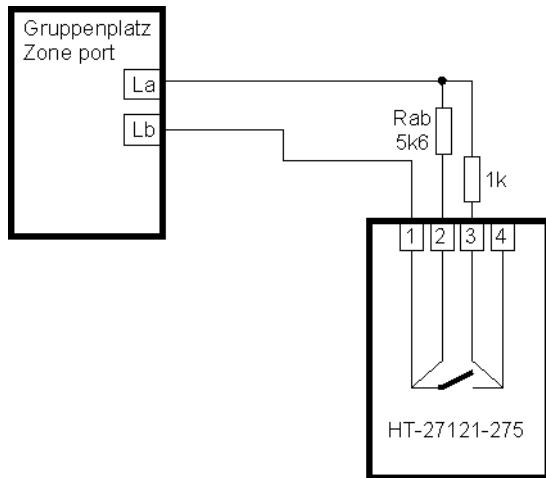
The number of detectors of a zone is not limited since only a thermally controlled, normally open contact (bimetallic strip) is used. (Quiescent current of the detector = 0 mA).

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
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

2.7.5.2 Connection



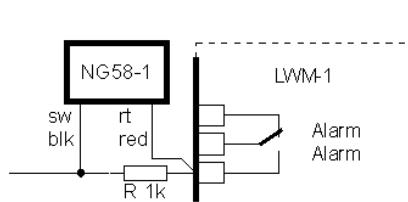
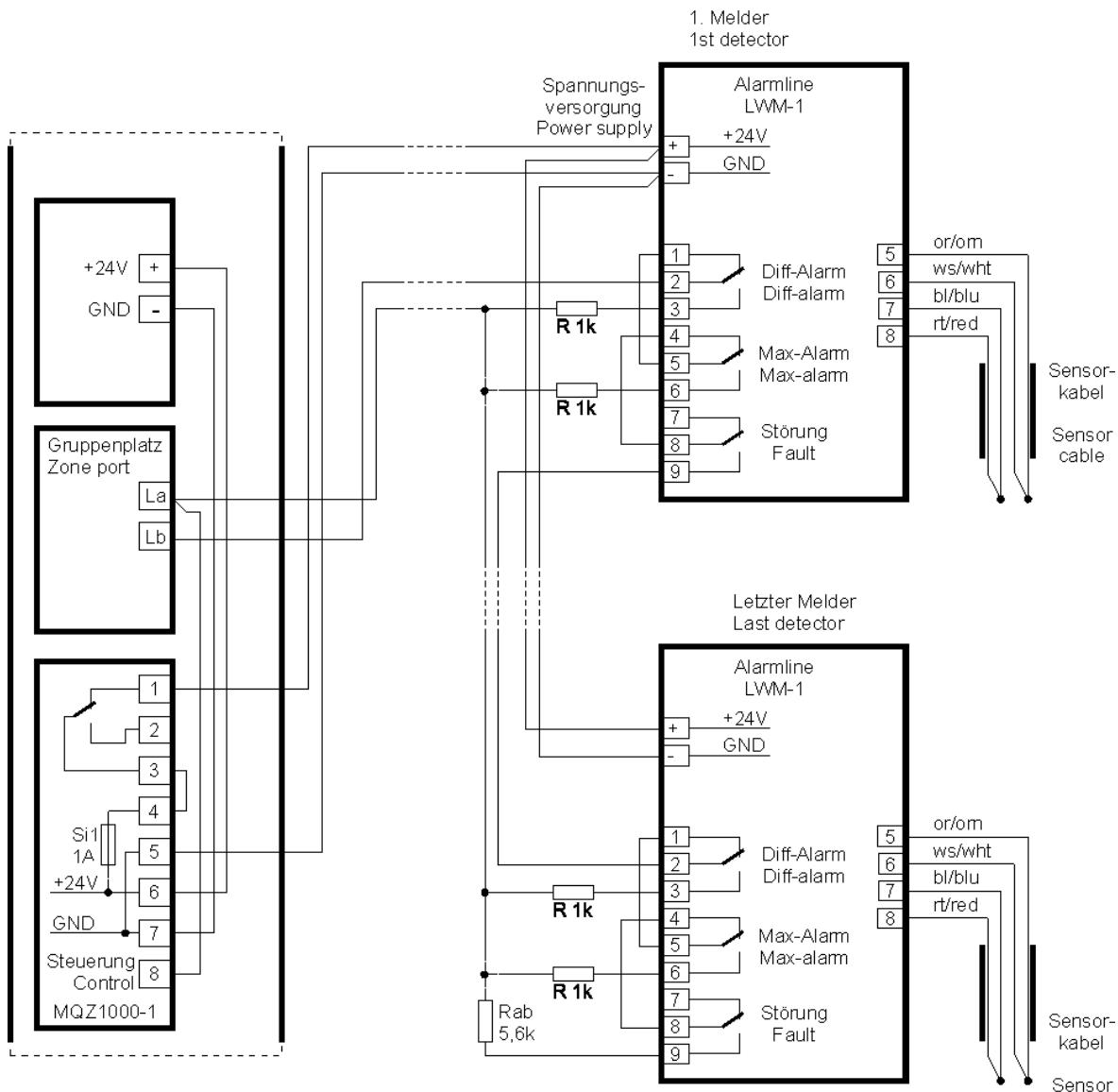
Make sure that the temperature resistance of the connection cable is sufficient.



2.8 Linear detectors

2.8.1 Linear Heat Detector Unit LWM-1

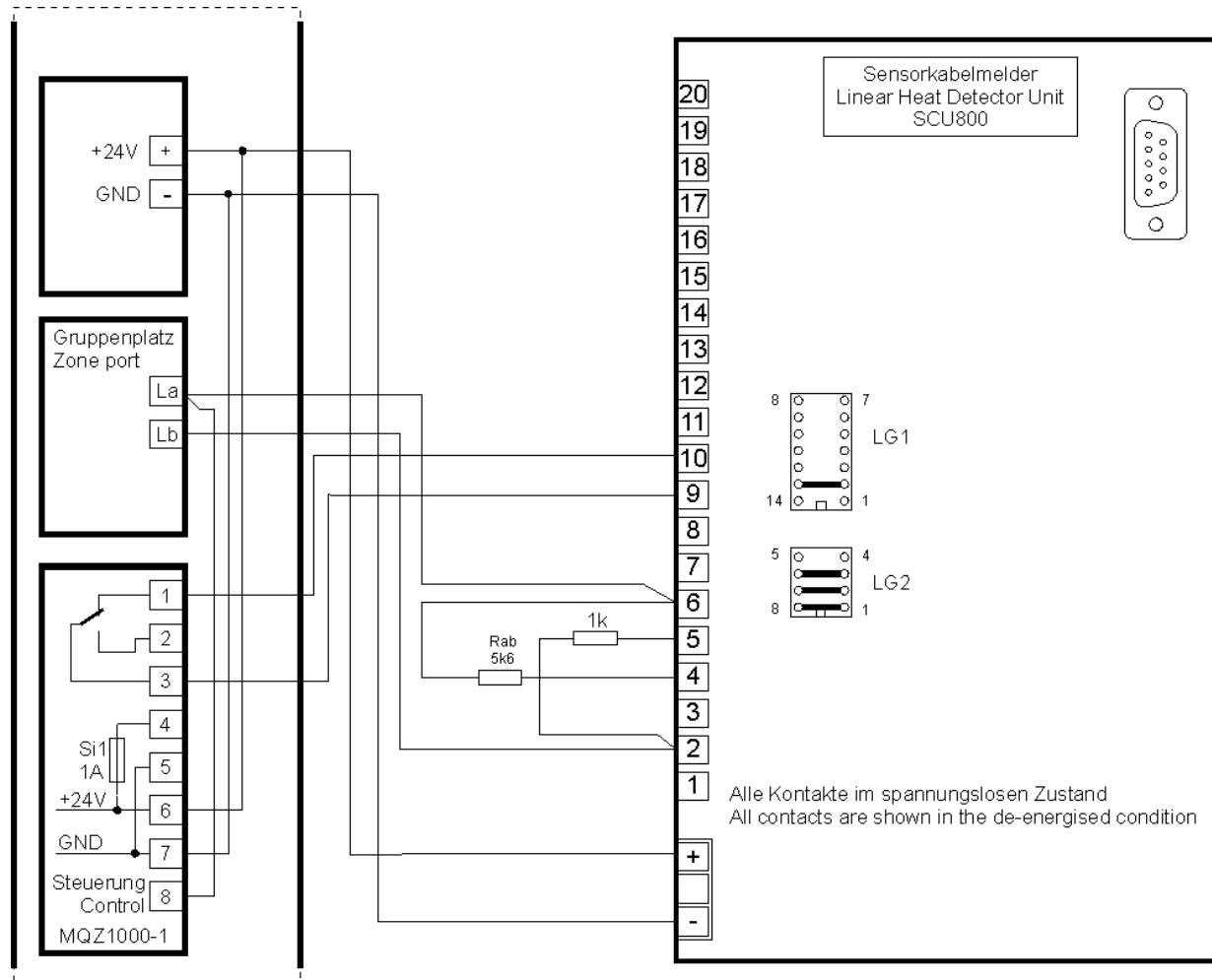
For the evaluation of temperature, a special sensor cable is connected to the Linear Heat Detector Unit Alarmline LWM-1.



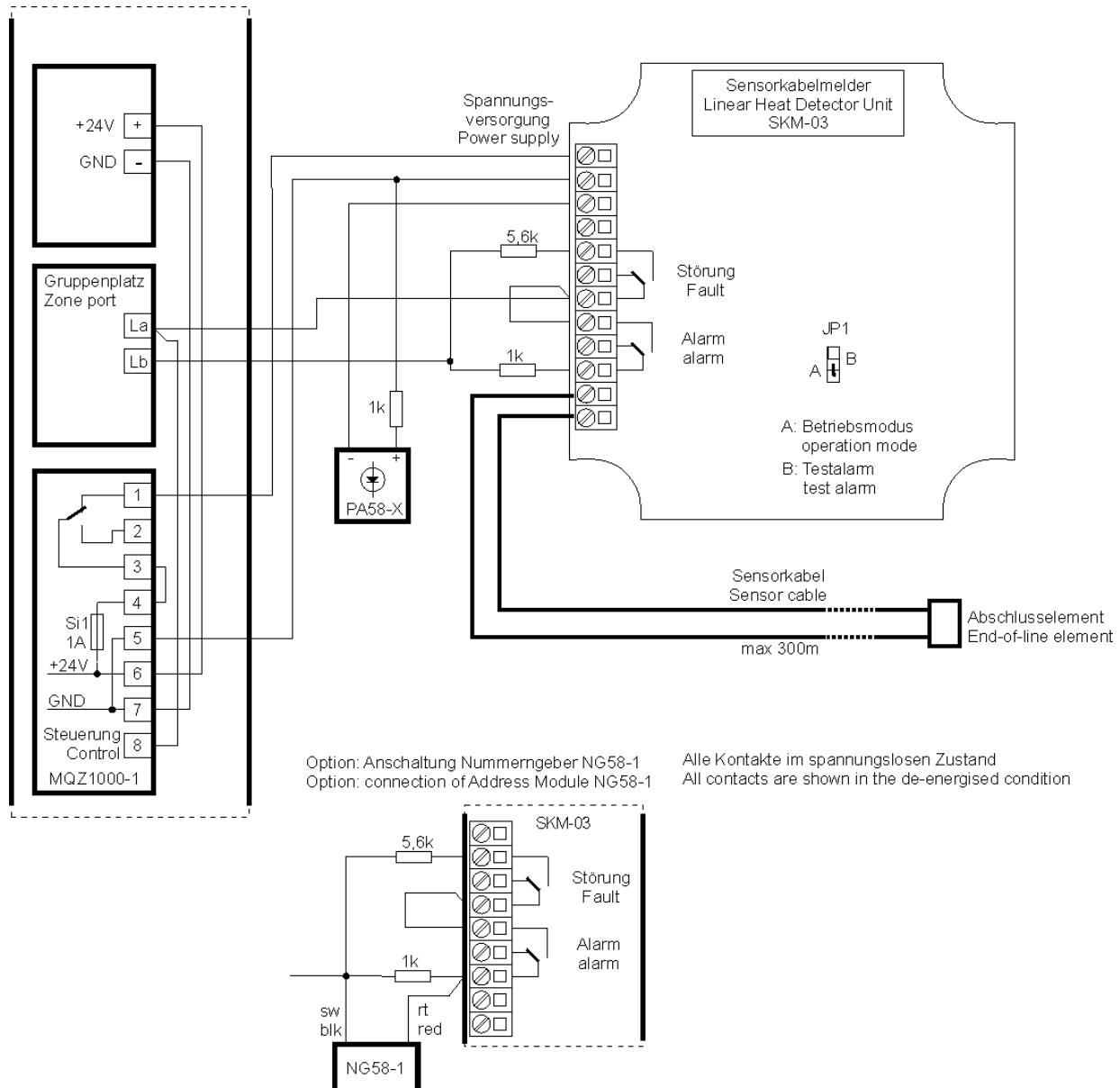
Alle Kontakte im spannungslosen Zustand
All contacts are shown in the de-energised condition

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

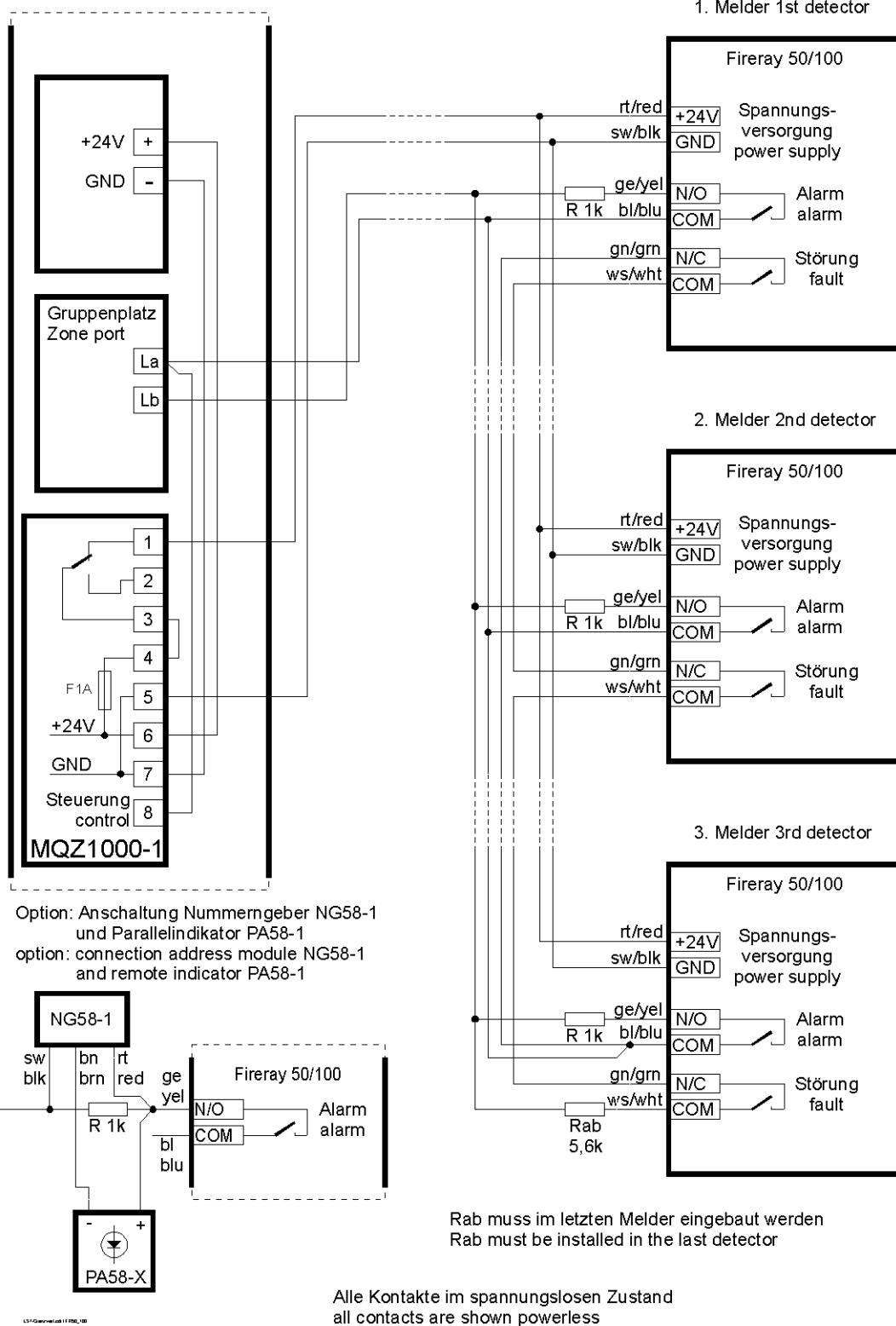
2.8.2 Linear Heat Detector Unit SCU800



2.8.3 Linear Heat Detector Unit SKM-03



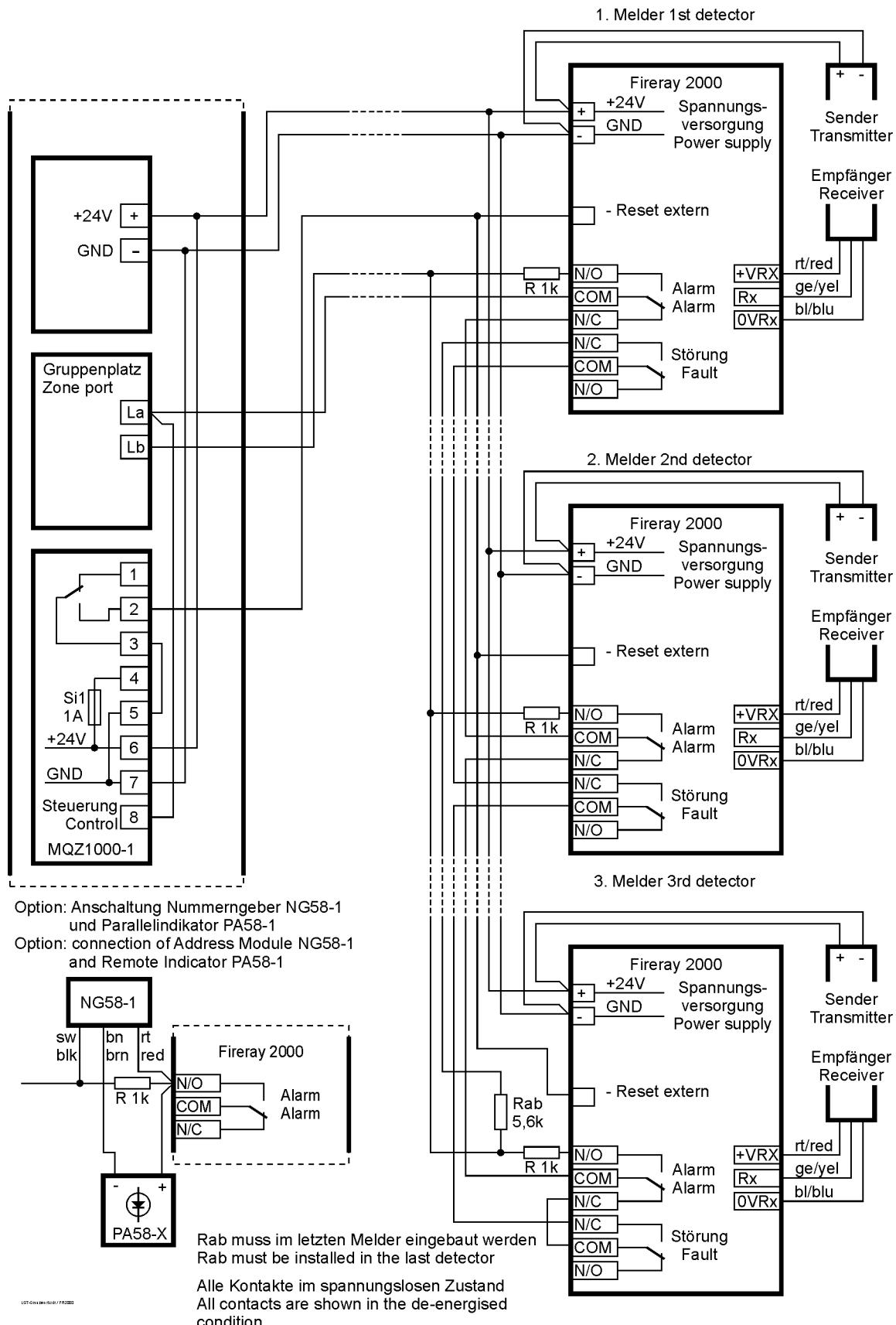
2.8.4 Beam Smoke Detector FR50/100



Please note that if the detector zone is disabled, all detectors of this zone are no longer working!



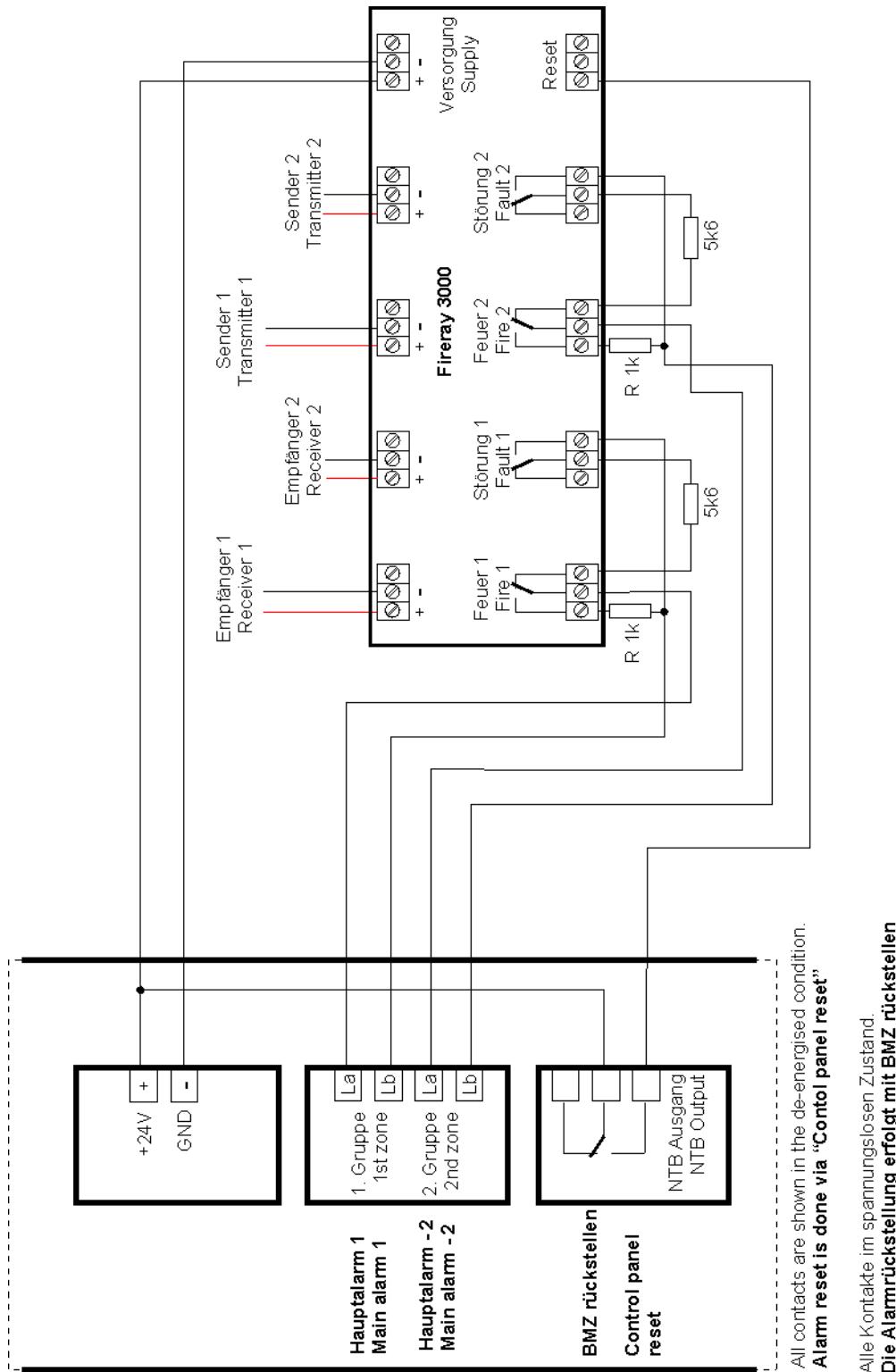
2.8.5 Beam Smoke Detector FR2000



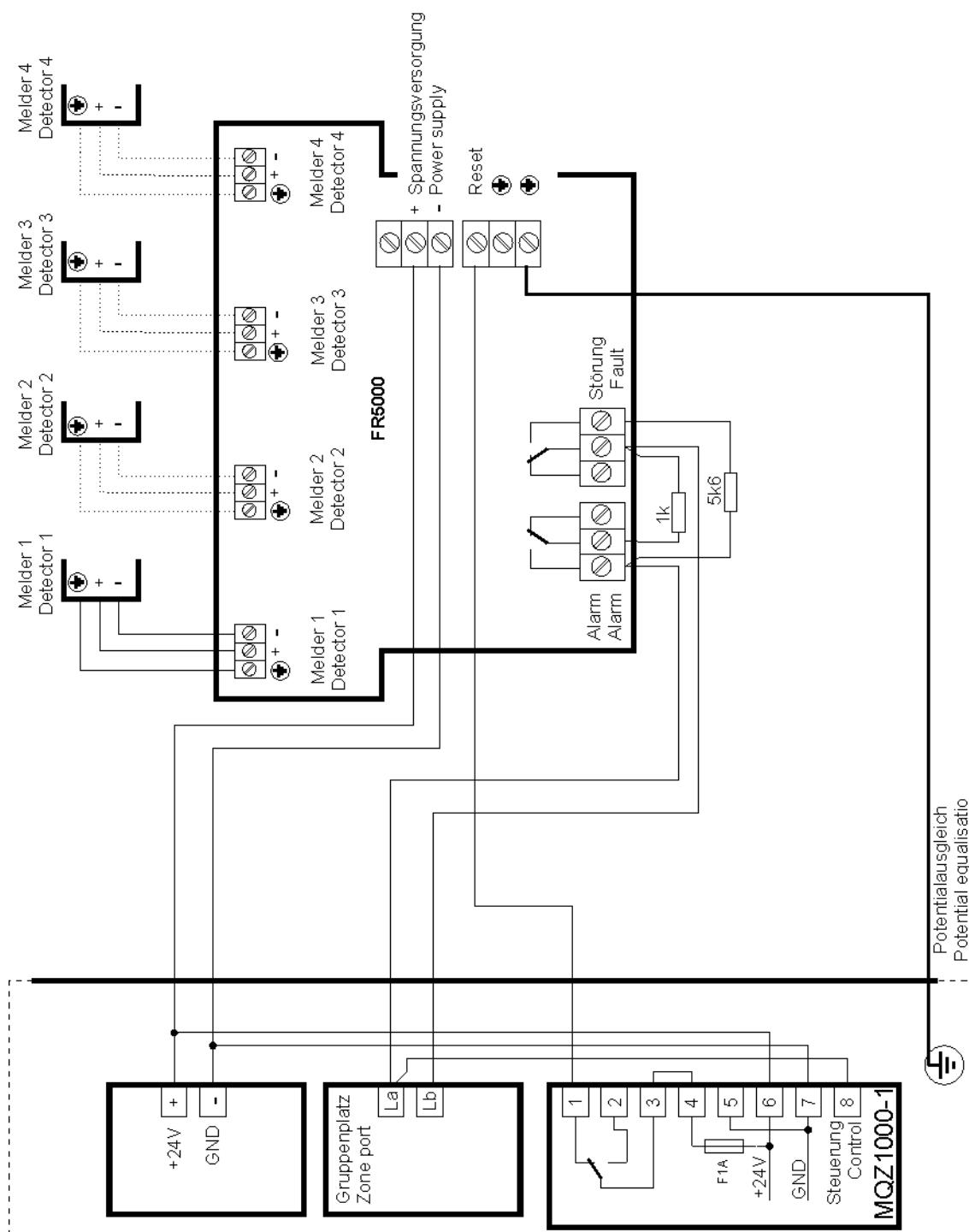
Please note that if the detector zone is disabled, all detectors of this zone are no longer working!



2.8.6 Beam Smoke Detector FR3000

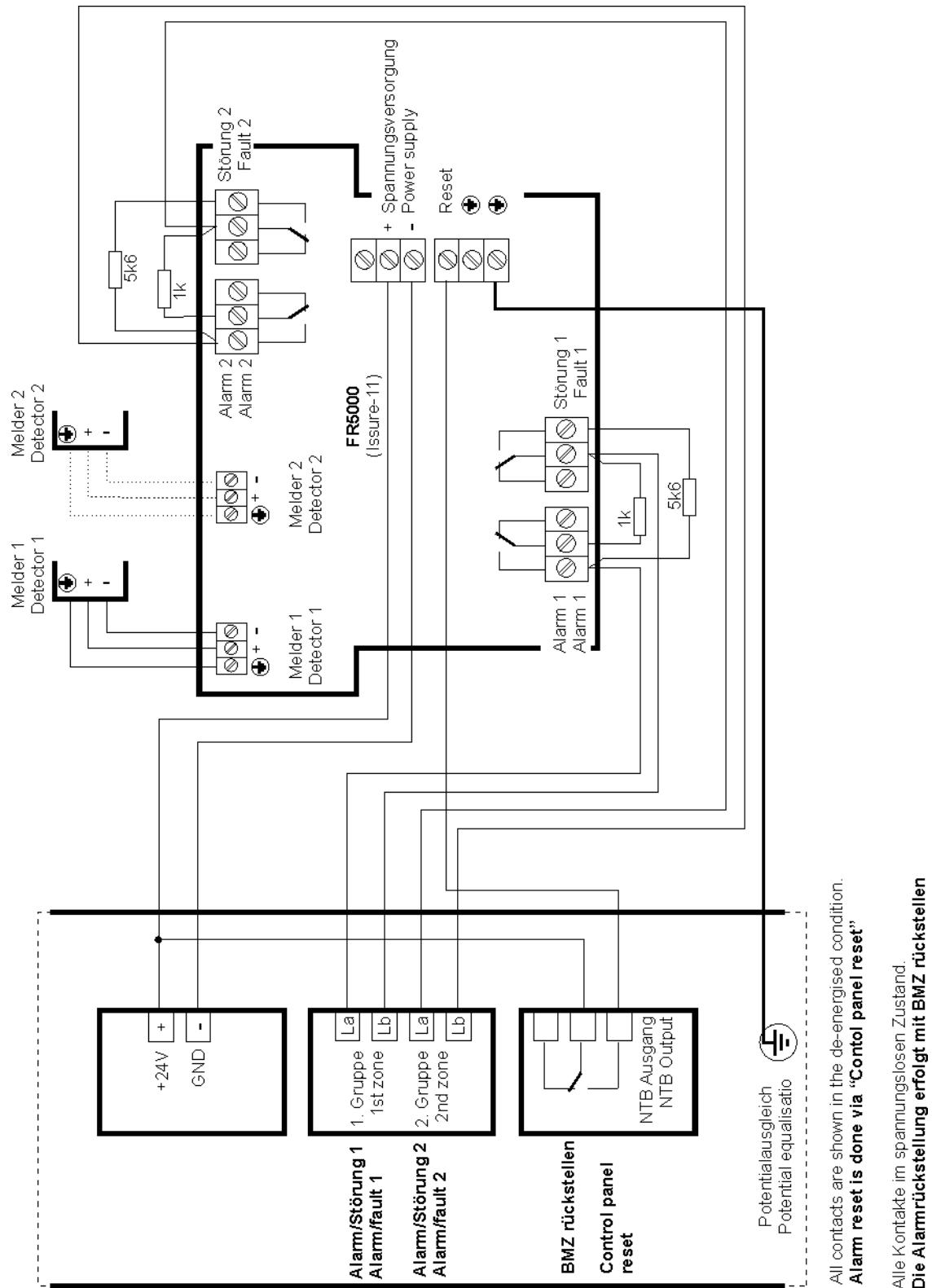


2.8.7 Beam Smoke Detector FR5000

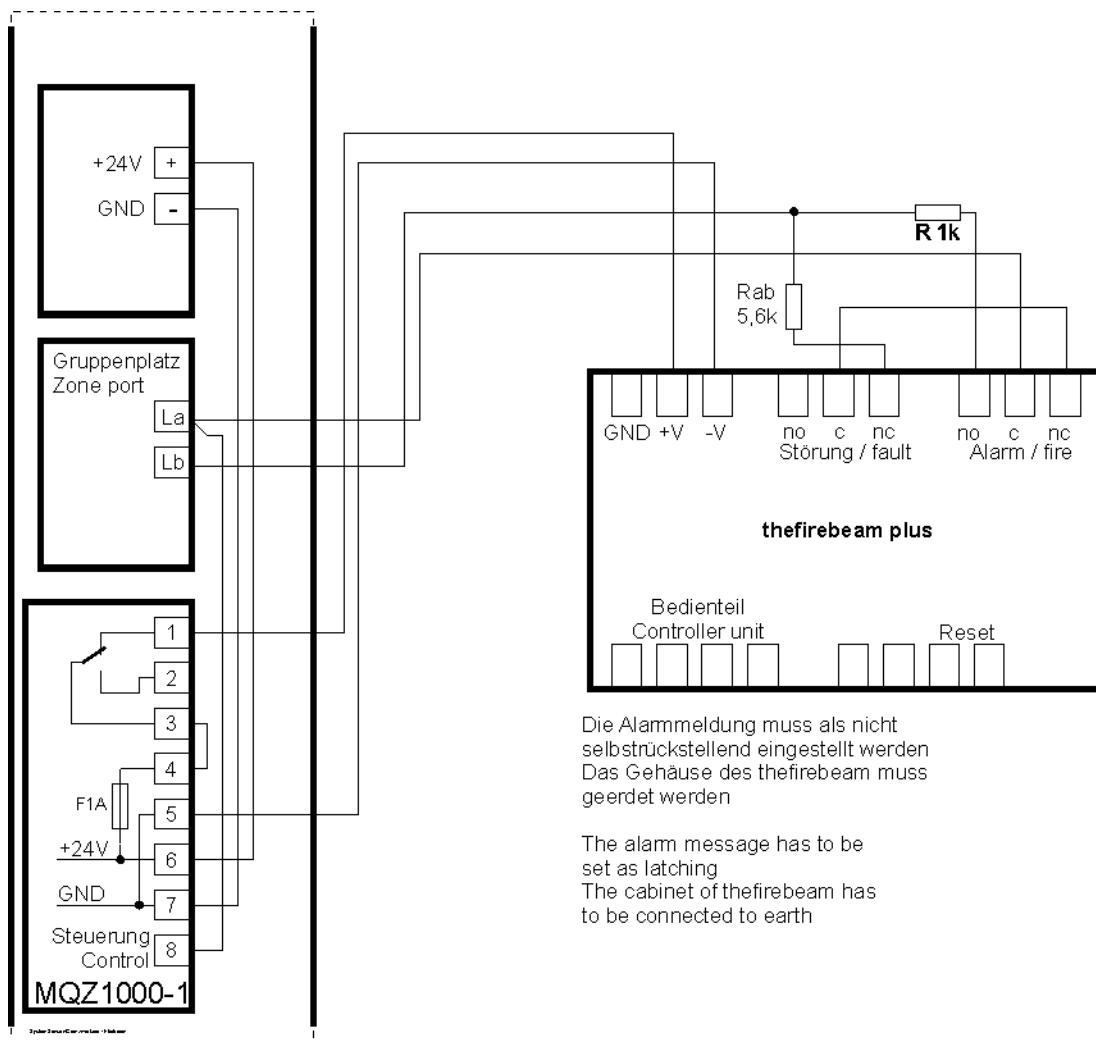


Please note that if the detector zone is disabled, the messages of the FR5000 will not be evaluated. Therefore, the detectors 1 through 4 must be used in the same fire area.

2.8.8 Beam Smoke Detector FR5000 (Issue-11)



2.8.9 Beam Smoke Detector Thefirebeam plus

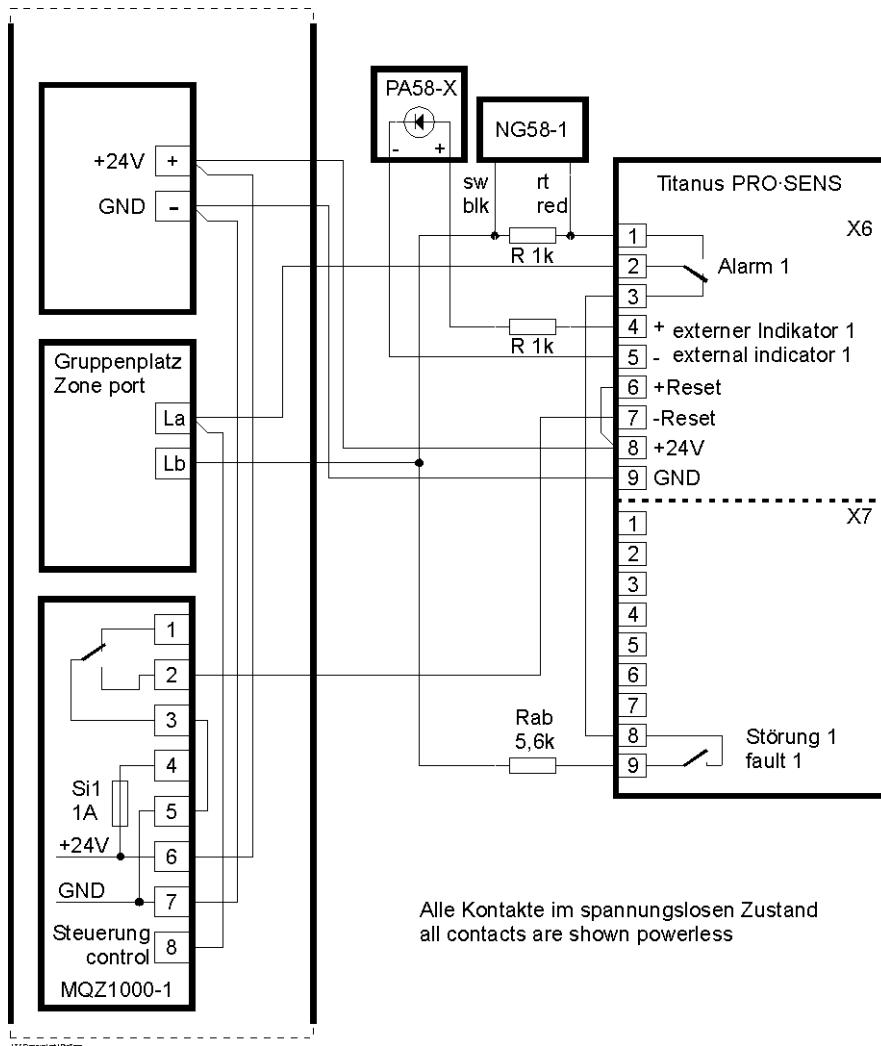


After the supply voltage is applied to the detector, the fault relay will still be de-energised for 8s. Therefore, the fire detection control panel may show a temporary fault message after enabling the conventional zone, after panel reset or after a power on.

2.9 Smoke Aspiration Systems

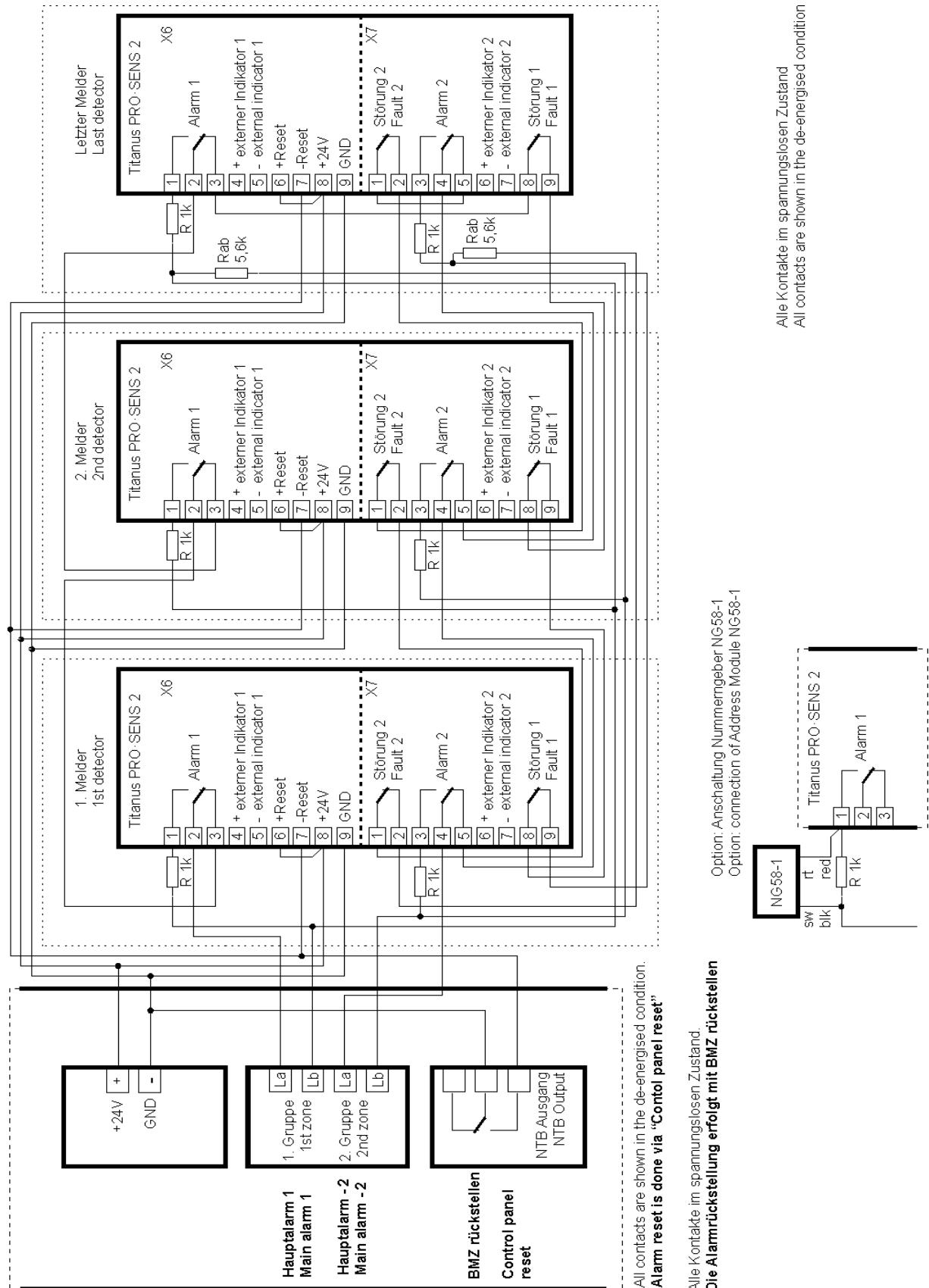
2.9.1 Smoke Aspiration System Titanus PRO·SENS – TP1/A

2.9.1.1 Connection of one unit



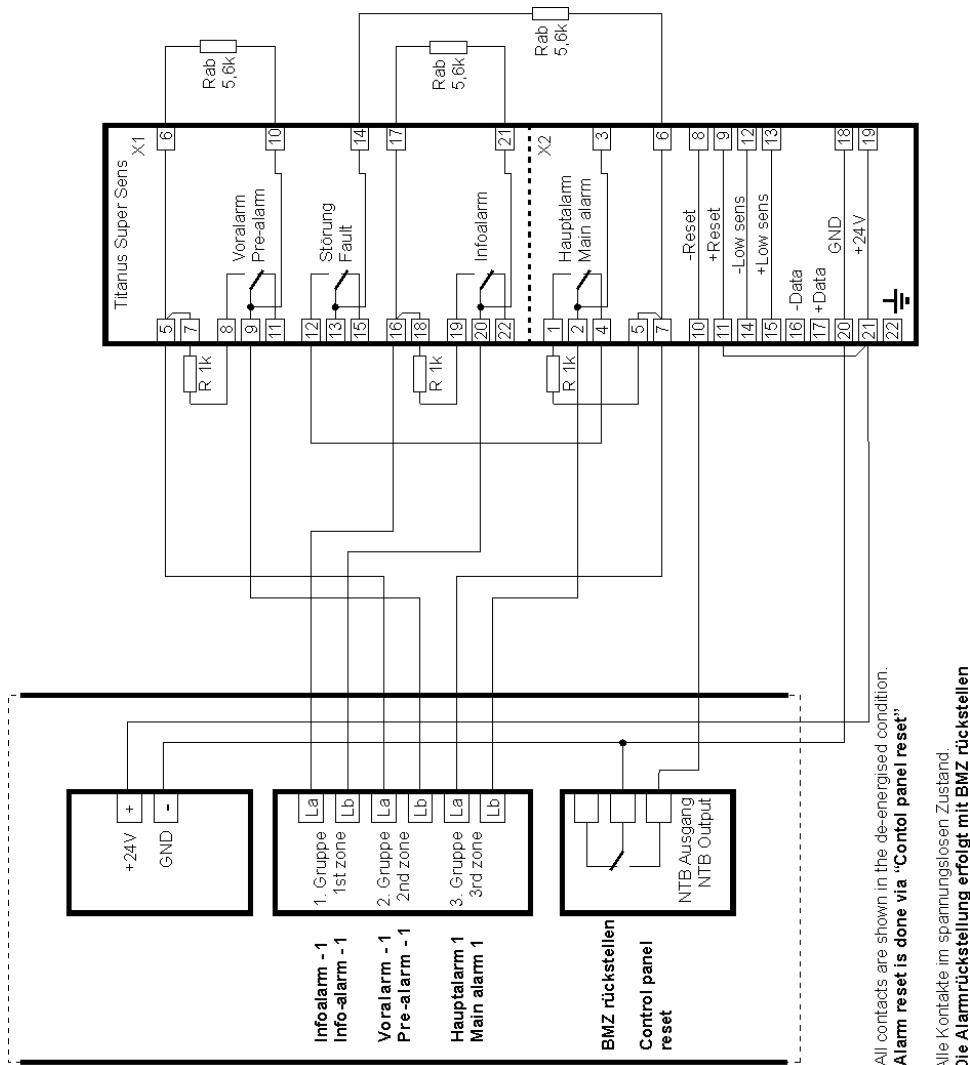
The fault contact has to be configured to operate as a NORMALLY OPEN contact. Jumper JU2/JU3 must therefore be set to position 1-2.

2.9.2 Smoke Aspiration System Titanus PRO-SENS – TP1/A with 2 channels



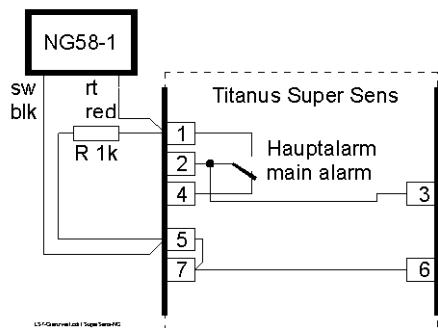
The fault contact has to be configured to operate as a NORMALLY OPEN contact. Jumper JU2/JU3 must therefore be set to position 1-2.

2.9.3 Smoke Aspiration System Titanus Super Sens – T-SS

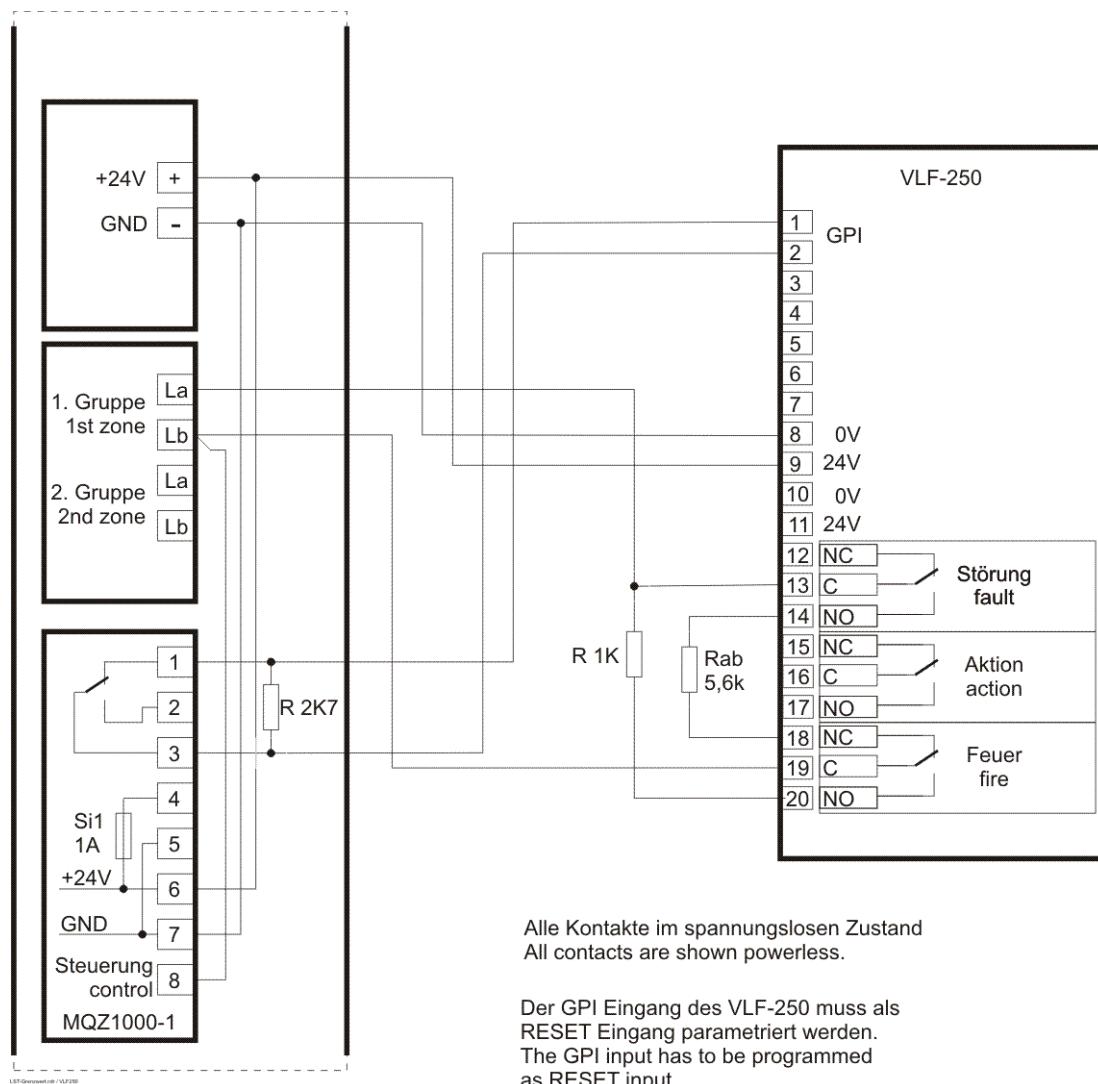


Connection of address module

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



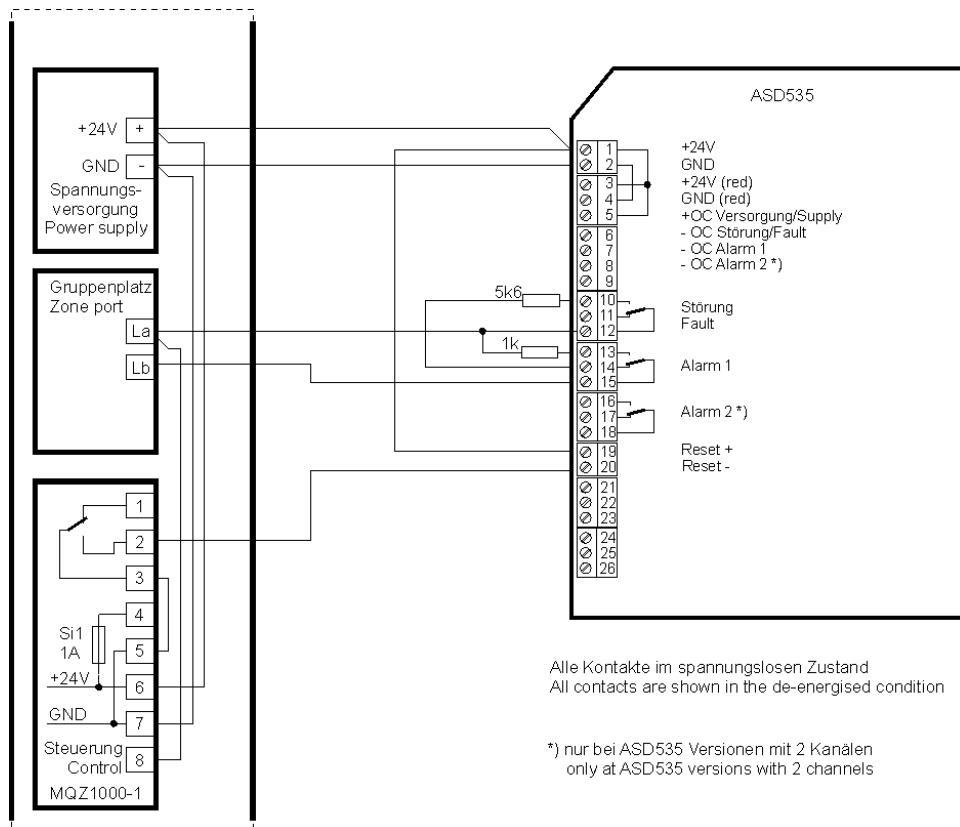
2.9.4 Smoke Aspiration System Vesda VLF-250 / VLF-500



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

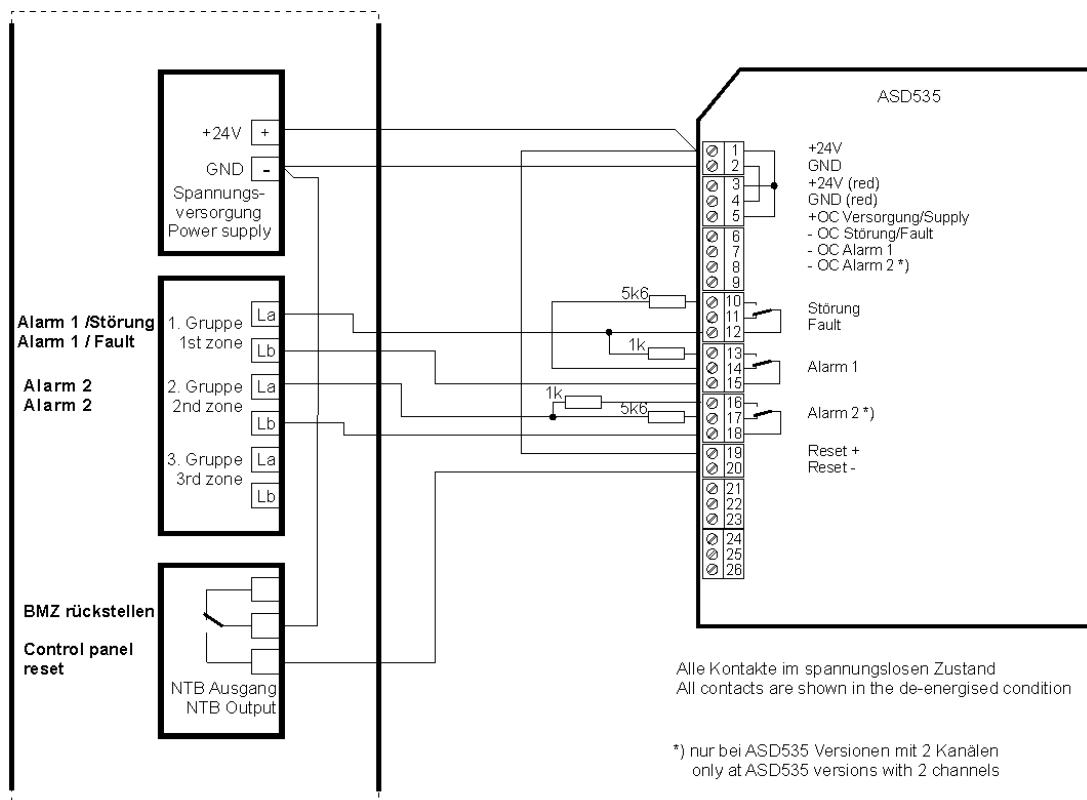
2.9.5 Smoke Aspiration System ASD535 – 1 channel

Connection if the ASD535 is equipped with 1 channel.



2.9.6 Smoke Aspiration System ASD535 – 2 channels

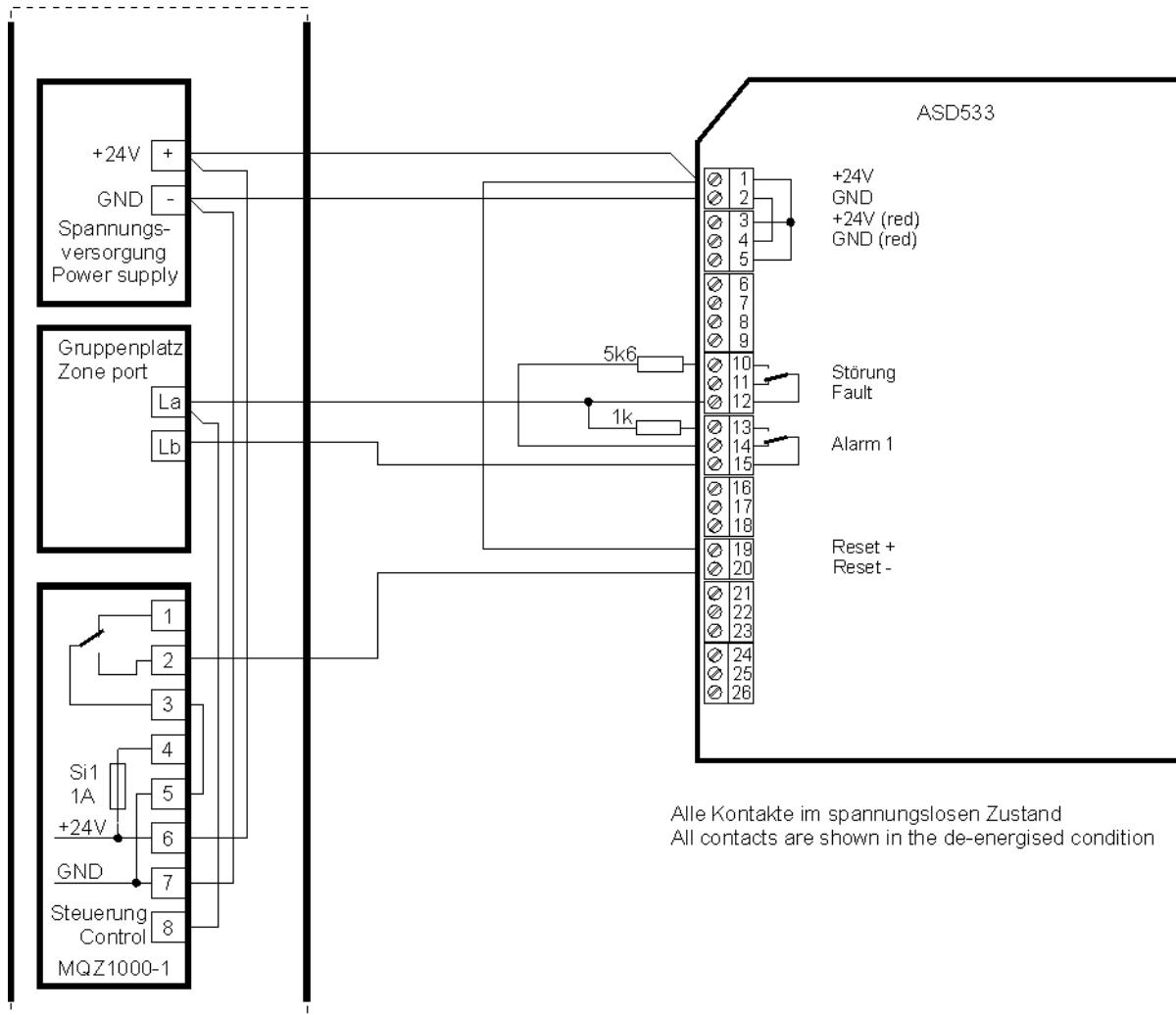
Connection if the ASD535 is equipped with 2 channels.



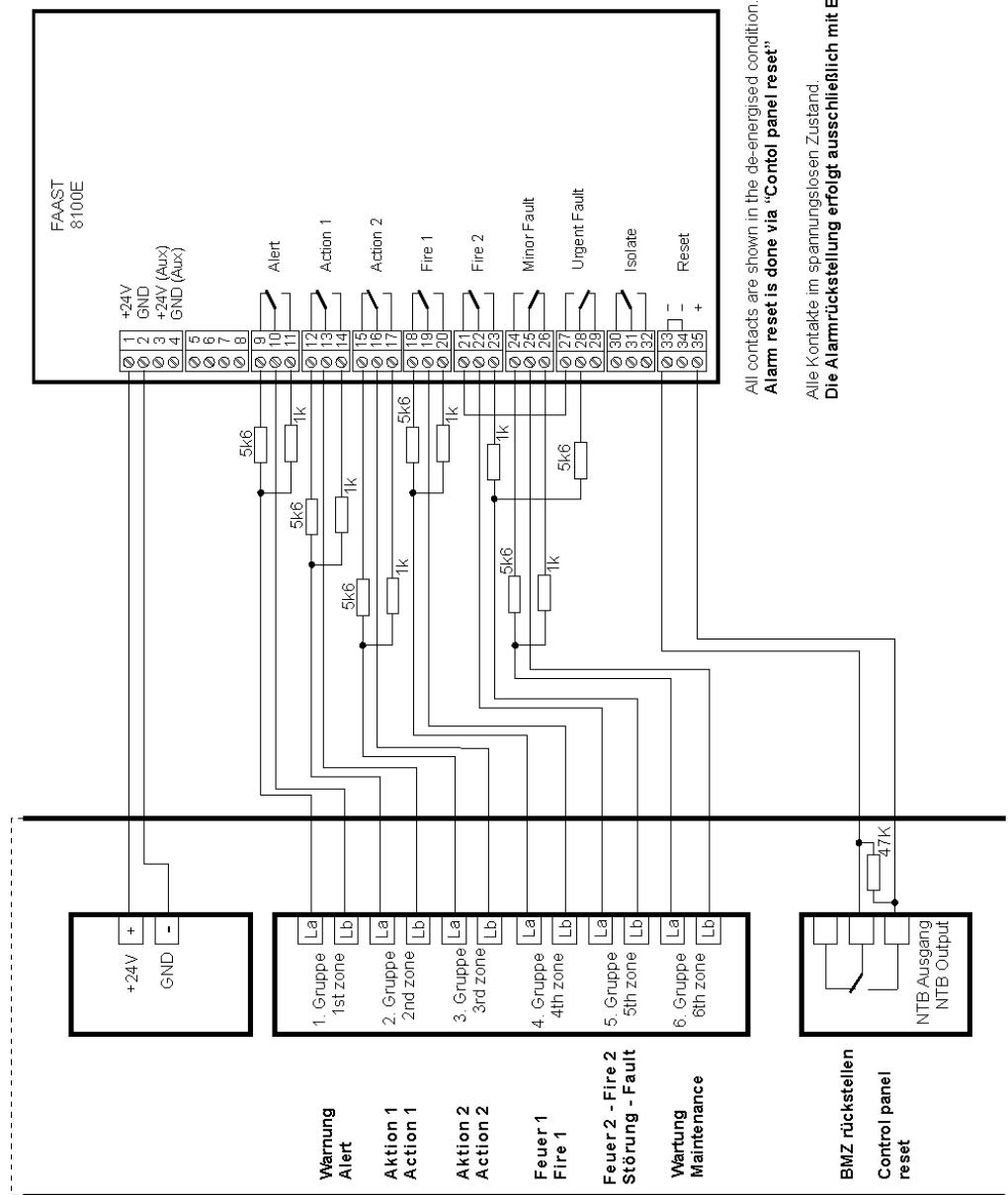
All contacts are shown in the de-energised condition

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

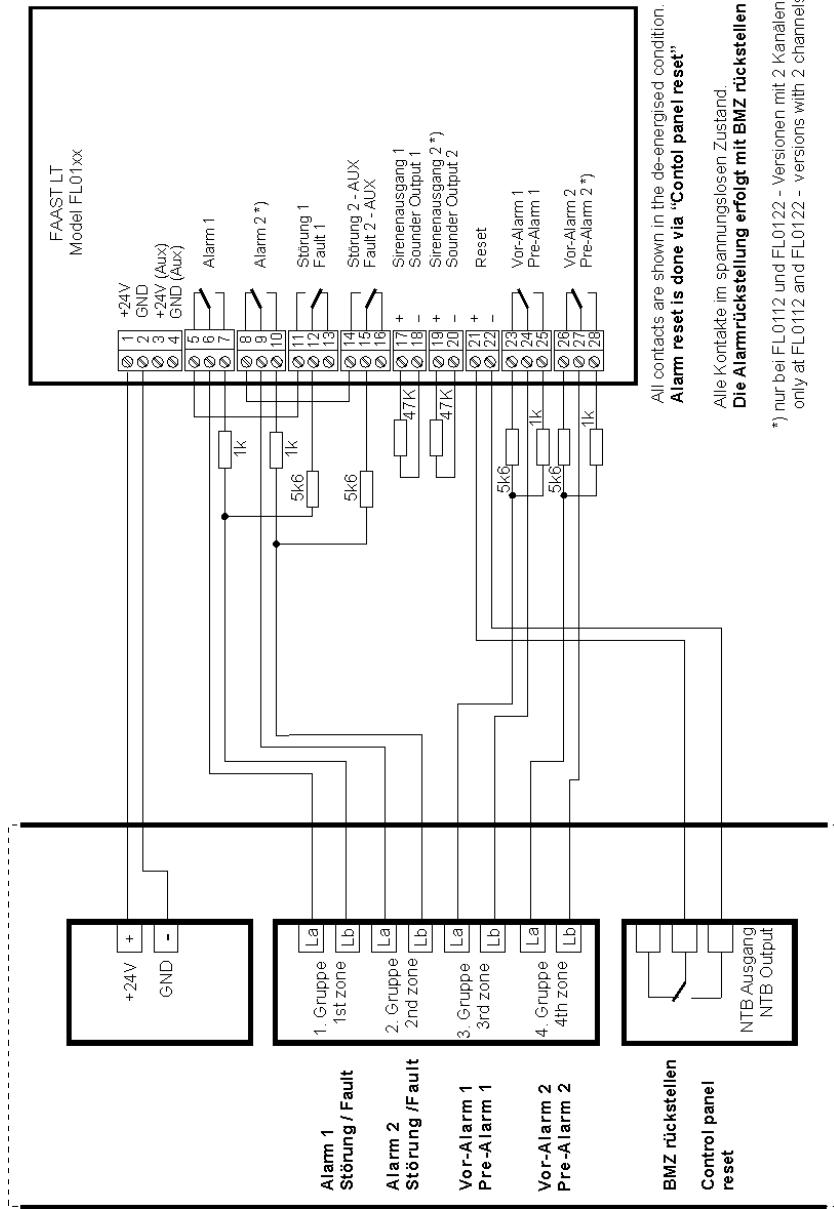
2.9.7 Smoke Aspiration System ASD533



2.9.8 Smoke Aspiration System FAAST 8100E

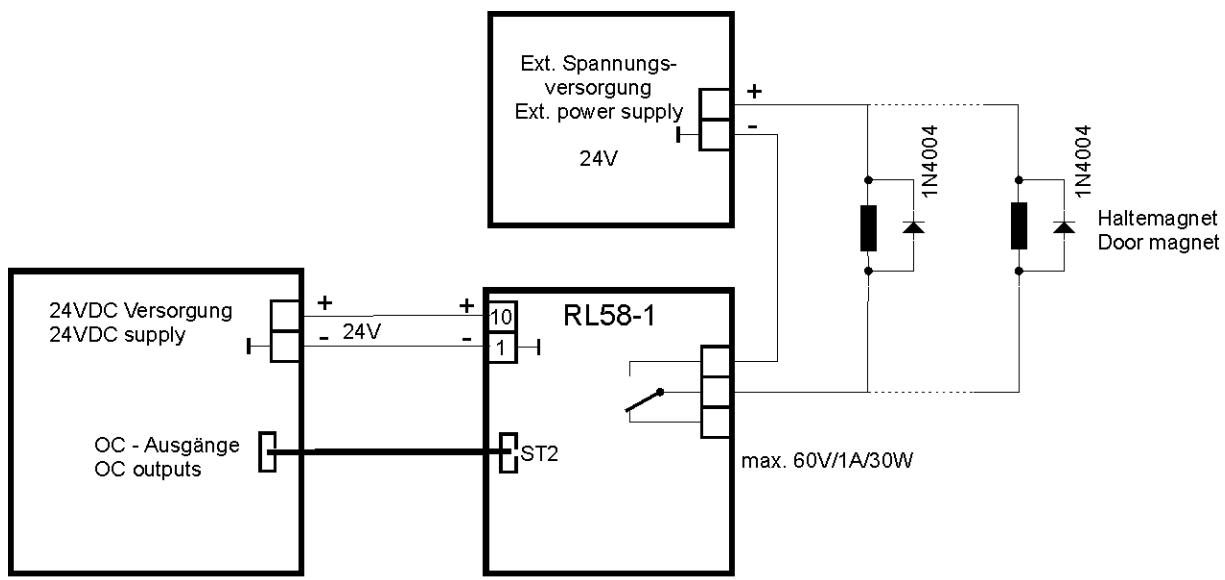


2.9.9 Smoke Aspiration System FAAST LT – Model FL01xx – with 2 channels



2.10 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.

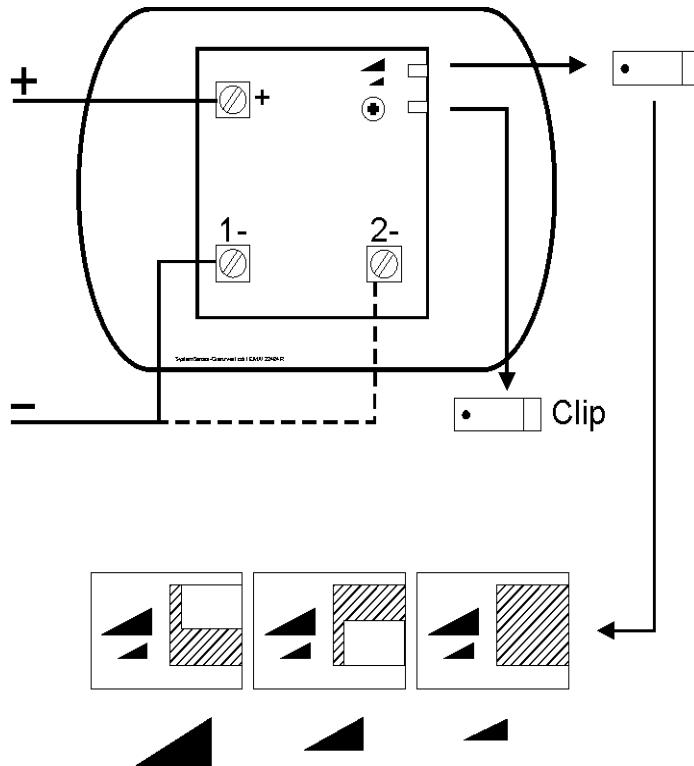


2.11 Connection of sounders and strobes

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.

2.11.1 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.

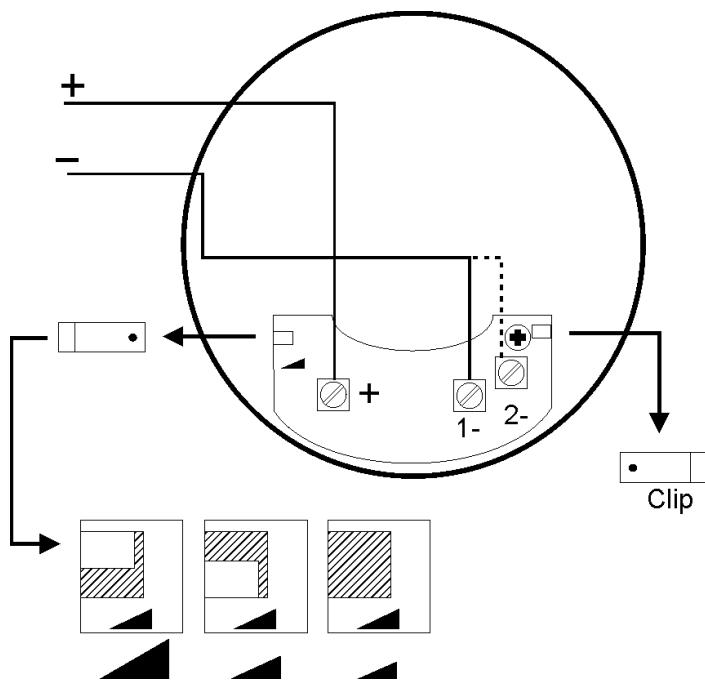
2.11.1.1 Sounder EMA1224B4R D / EMA1224B4W D (old version)

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

2.11.1.2 Sounder 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

2.11.2 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.

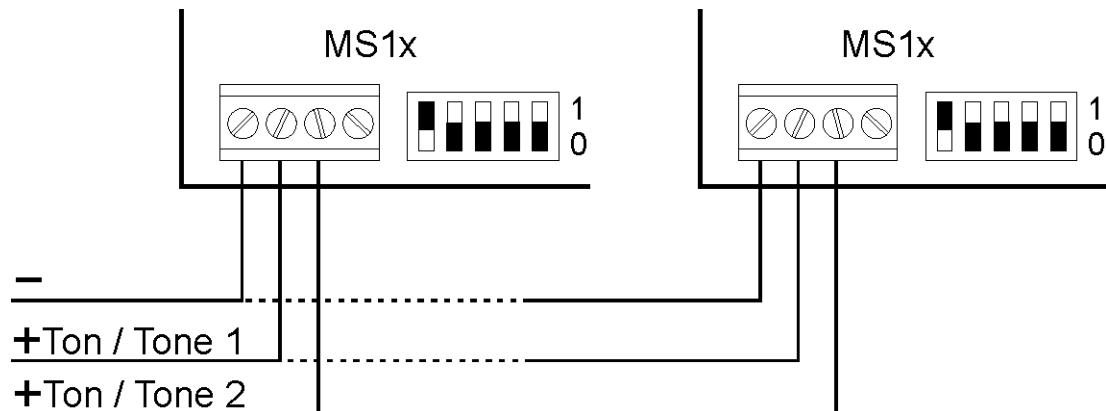
2.11.2.1 Sounder DBS1224B4W D (old version)

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

2.11.2.2 Sounder DBS1224B4W-D (new version)

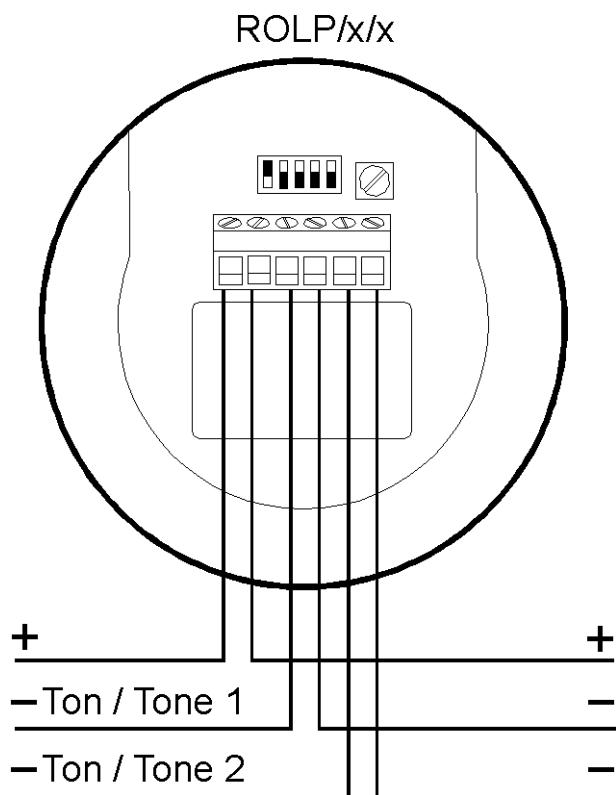
Connection Screw terminals				
+	1-	2-	Clip	Tone
✓	✓		✓	1200-500Hz DIN tone
✓		✓	✓	800Hz continuous tone
✓	✓		removed	500-1200Hz Slow whoop tone
✓		✓	removed	1200-500Hz DIN tone

2.11.3 Sounder MS1R



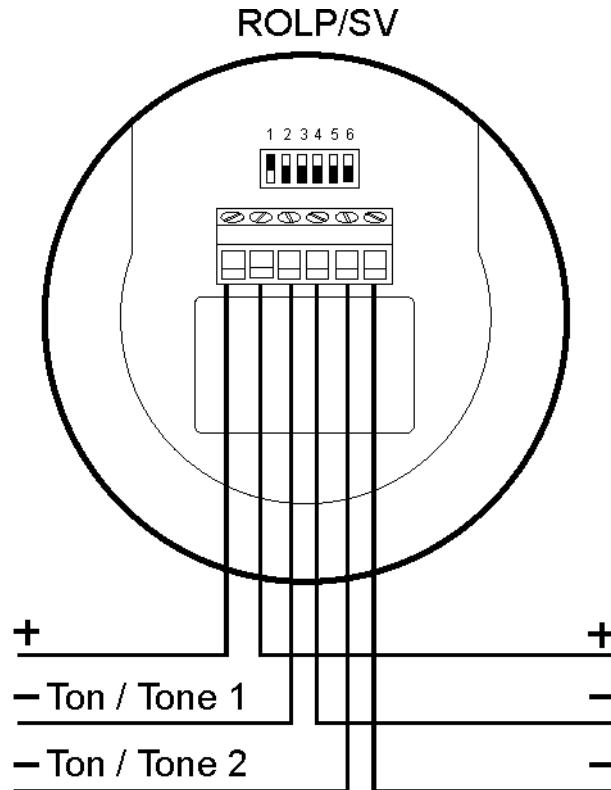
DIP switch					Tone 1	Tone 2
1	2	3	4	5		
1	0	0	0	0	1200-500Hz DIN tone	1000Hz continuous tone
0	1	0	0	0	500-1200Hz Slow whoop tone	1000Hz continuous tone

2.11.4 Sounder ROLP



DIP switch					Tone 1	Tone 2
1	2	3	4	5		
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

2.11.5 Sounder ROLP/SV

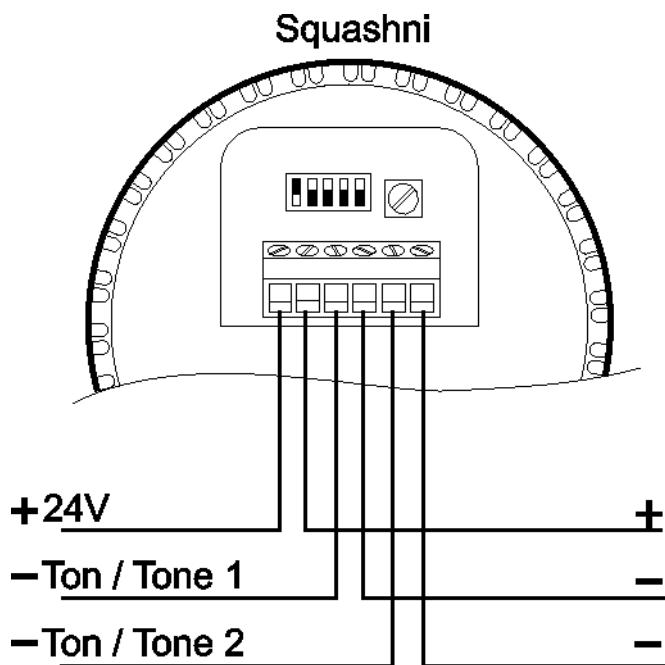


DIP switch 1 is used for setting the sound level: 0 = low; 1 = high. This corresponds to a difference of 20dB.

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

DIP switch					Tone 1	Tone 2
2	3	4	5	6		
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

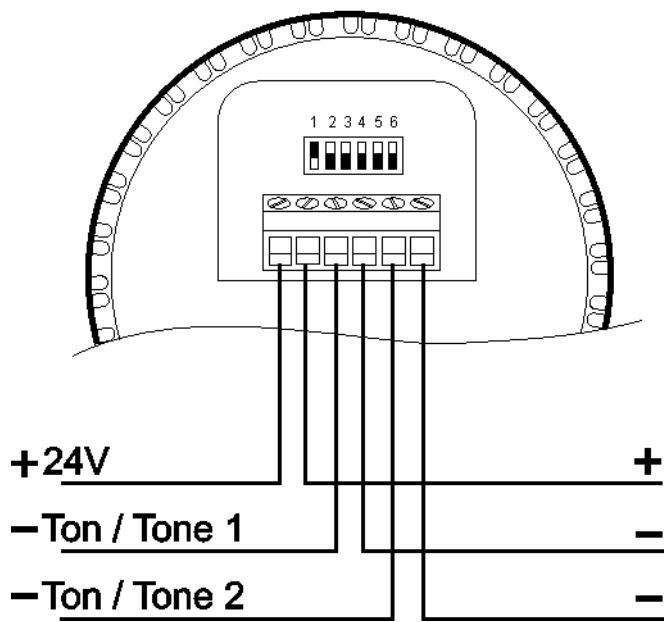
2.11.6 Sounder SQUASHNI



DIP switch					Tone 1	Tone 2
1	2	3	4	5		
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

2.11.7 Sounder SQUASHNI/SV

Squashni/SV

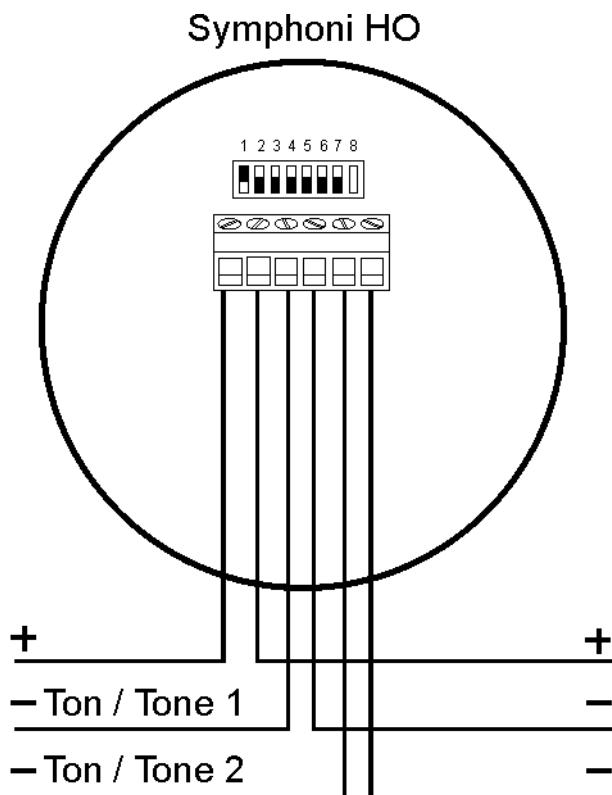


DIP switch 1 is used for setting the sound level: 0 = low; 1 = high.

Furthermore, 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

2.11.8 Sounder SYMPHONI HO



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

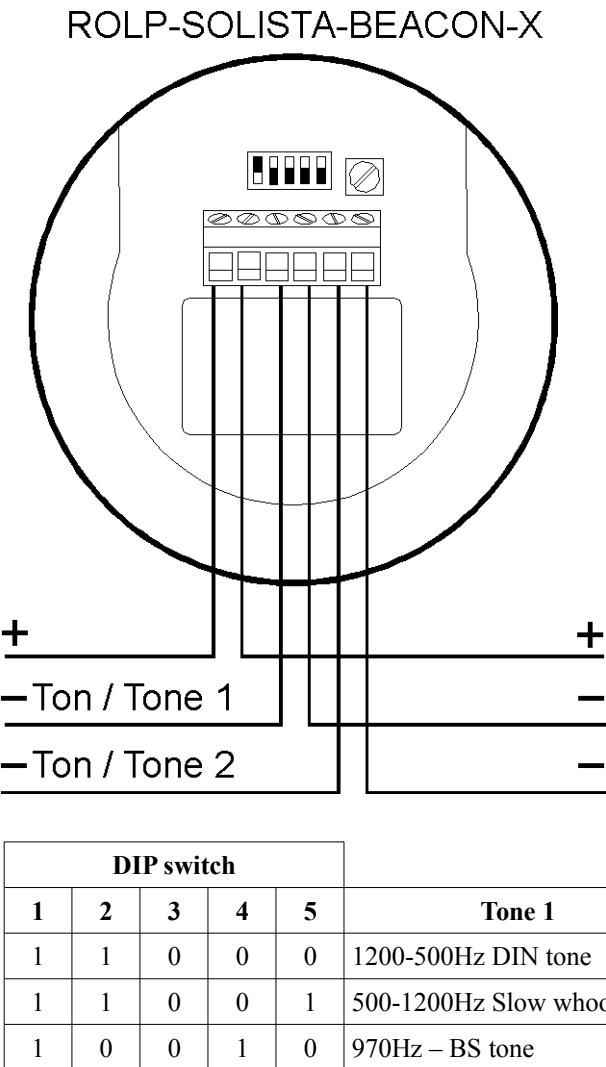
DIP switch					Tone 1	Tone 2
1	2	3	4	5		
1	1	0	0	0	1200-500Hz DIN tone	970Hz – BS tone
1	1	0	0	1	500-1200Hz Slow whoop tone	970Hz – BS tone
1	0	0	1	0	970Hz – BS tone	970Hz – BS tone

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

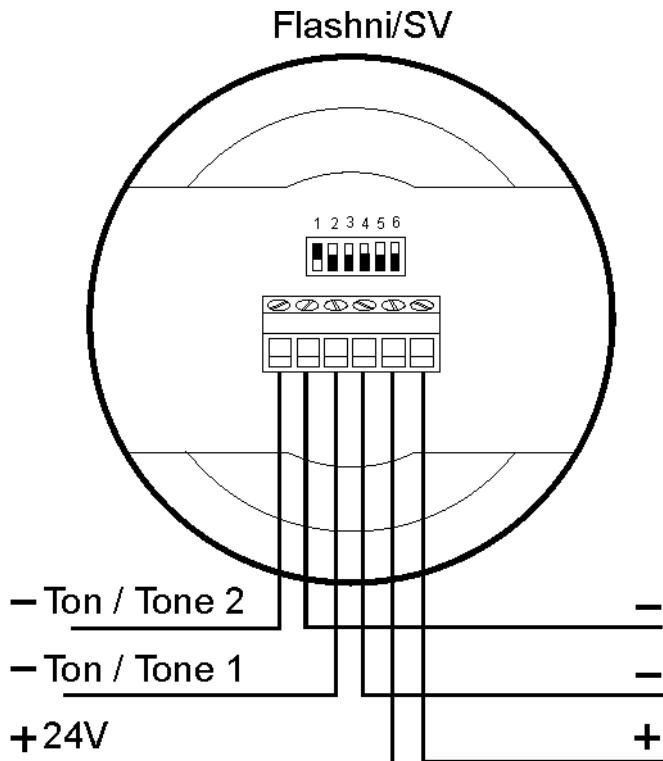
DIP switch 8 is not used.

2.11.9 Sounder-Strobe ROLP-SOLISTA



2.11.10 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.



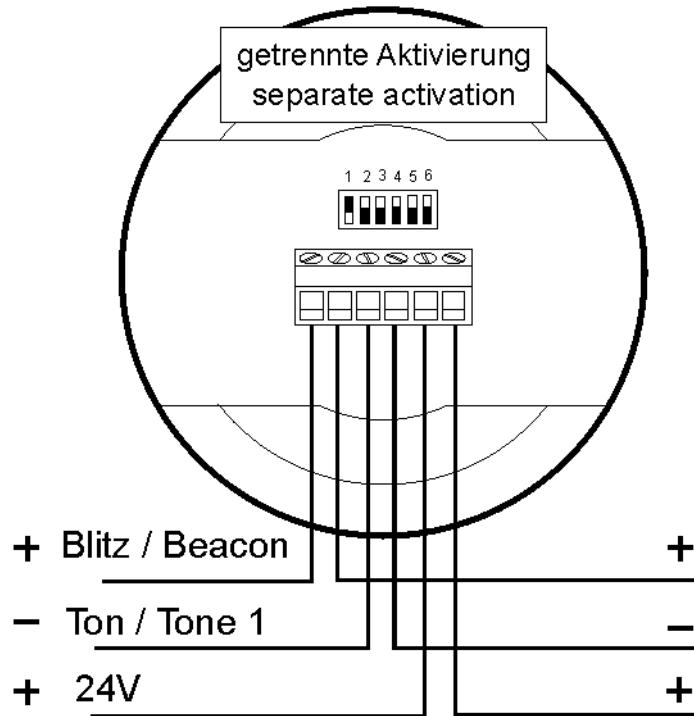
DIP switch 1 is used for setting the sound level: 0 = low; 1 = high.

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

DIP switch						Tone 1	Tone 2
2	3	4	5	6			
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	

2.11.11 Sounder-Strobe FLASHNI-SV with separate actuation

Flashni/SV

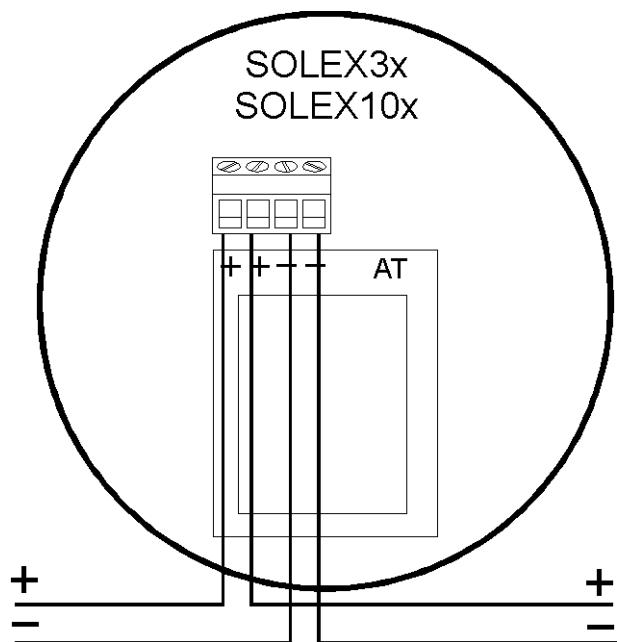


DIP switch 1 is used for setting the sound level: 0 = low; 1 = high.

Furthermore, the DIP switches 2 through 6 allow you to set the tones.

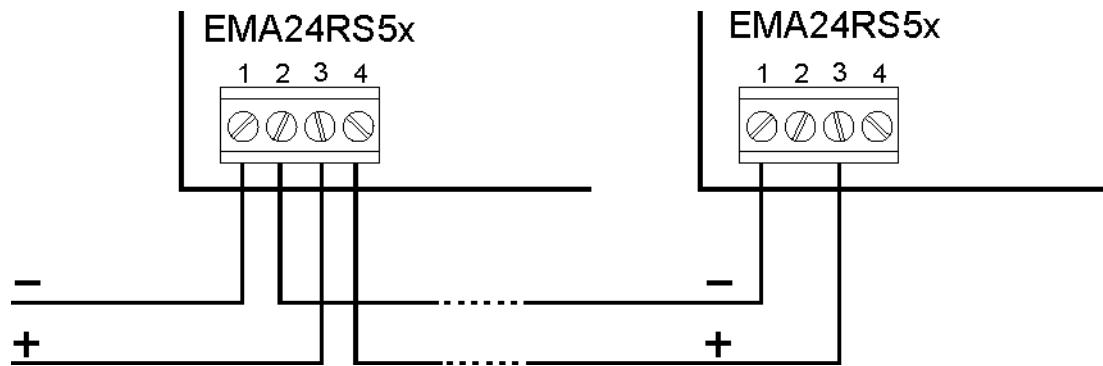
DIP switch					
2	3	4	5	6	Tone 1
1	1	0	0	0	1200-500Hz DIN tone
1	1	0	0	1	500-1200Hz Slow whoop tone
1	0	0	1	0	970Hz – BS tone

2.11.12 Strobe SOLEX



2.11.13 Strobe EMA24RS5x

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



2.12 Coding of Address Module NG58-1

Together with the Fire Detection Control Panel 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 with 3 digits on the control panel. The number to be displayed must be preset (coded) on the address module within the range 0 to 63.

 In the parameter settings of the Fire Detection Control Panels BC216 and BC016, the detector address mode must be set to „binary“ („Global settings“ menu). In the case of the BC600, the type of evaluation does not have to be parameterised. The 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:

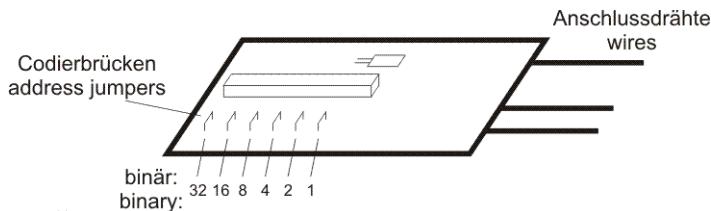
binary coding: 1, 2, 4, 8, 16 and 32

Example: number 25

binary coding: $25 = 16 + 8 + 1 \rightarrow$ Jumpers with the value 16, 8 and 1 must be cut.

Example: number 12

binary coding: $12 = 8 + 4 \rightarrow$ 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 corresponding local authority. Of course we are also at your disposal for any further information.

3.1.1 Hints for project planning

The loop interface is designed to supervise dialog detectors and allows you to connect up to 240 elements of the Series FI700 and FI750. All detectors and modules on a loop are connected on a two-wire line.



The installation must **only** be done in loops. You will find some examples on page 158 in Chapter 3.14: „Examples 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 (LOOPCALC_INT_xxxx.xls), which can be downloaded from the LST website after registration. This is even more important when you have many loop elements, loop-powered modules or a long distance between the control panel and the detectors.

All elements of the Series FI700 and FI750 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“ (PARSOFT window **Element parameters – General**).

3.2 Cable requirements

The line resistance of the detection loop must be below 50 Ohm per wire. This corresponds to a loop length of approx. 1400m, using a 0.5mm² wire.

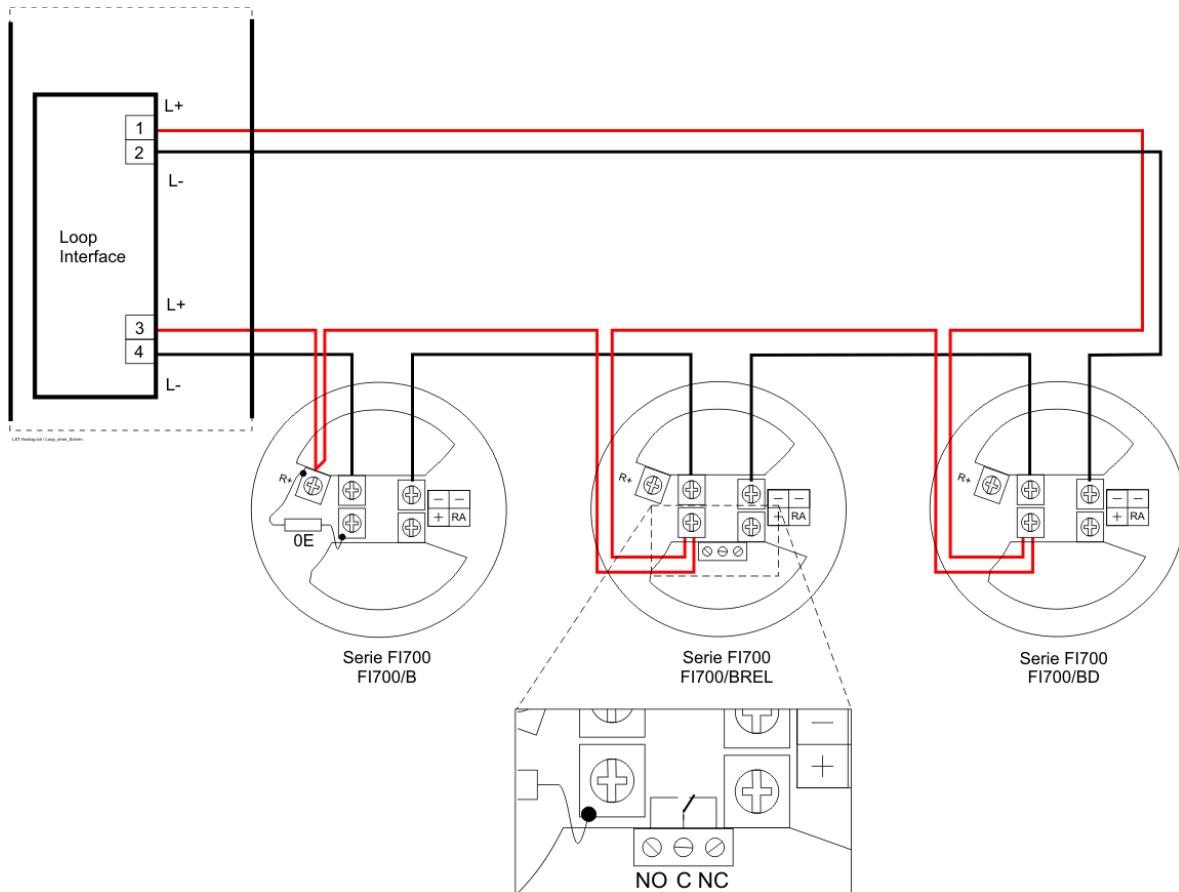
The capacitance of the whole loop line must not exceed 400nF.



Loop lines of several loop interfaces **must not** be combined in 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.



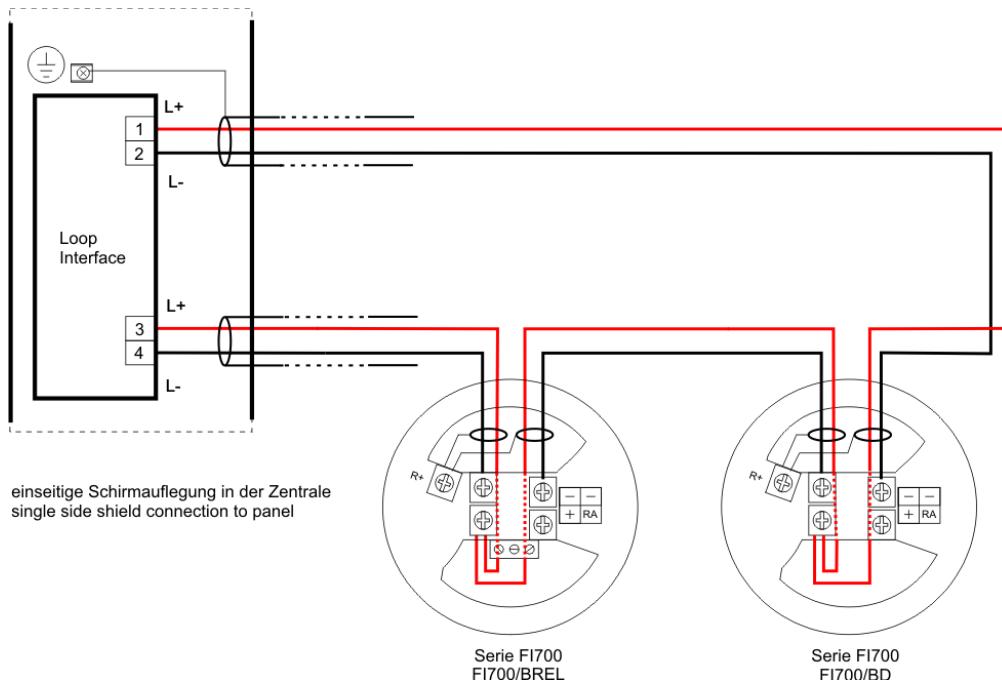
3.2.2 Shielded cable

When using a shielded cable you have to take care about 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 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+“ at the detector base FI700/BD is 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 determination of configuration, 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, according to the installed components and loop devices.
2. Automatic update of the configuration, menu item [Initialize new devices]. This function detects new elements on the loop, transfers them into the 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 meters.

The wiring is only allowed in the form of a ring. An example can be found on page 158 in Chapter 3.14: „Examples 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.

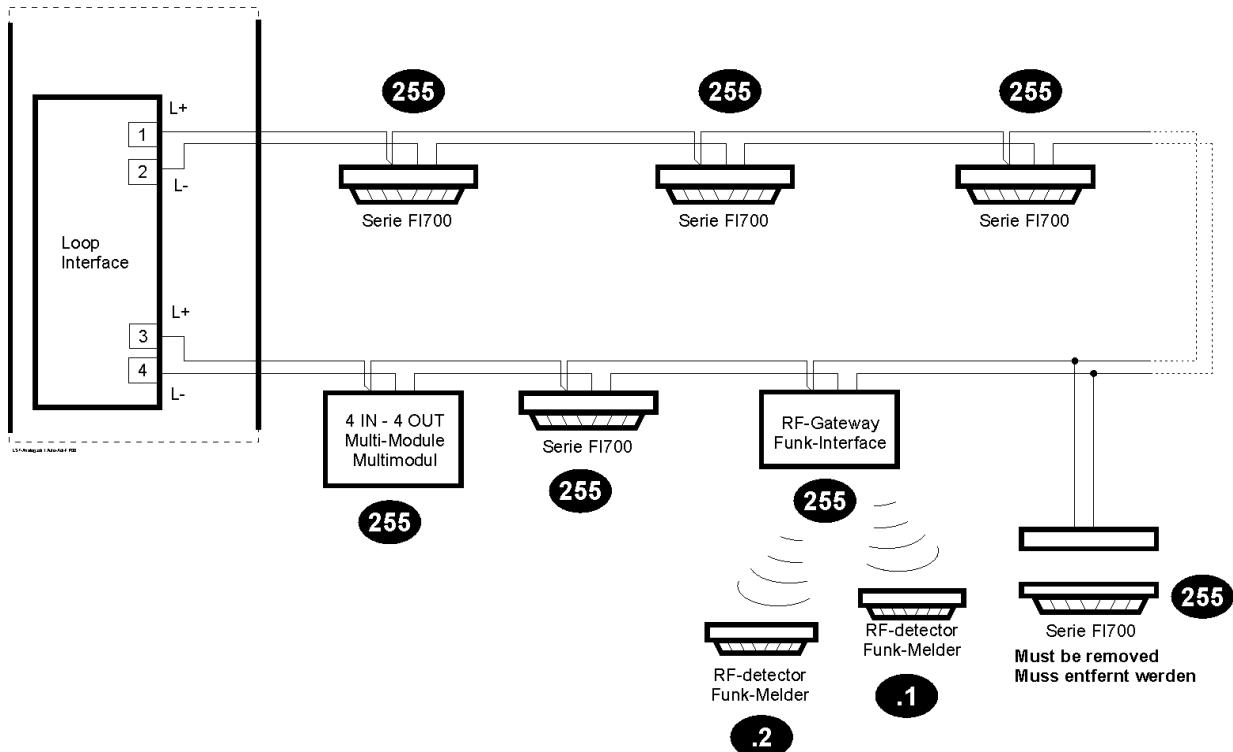
3.3.1.1 AUTO-setup – automatic addressing of all loop elements

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]

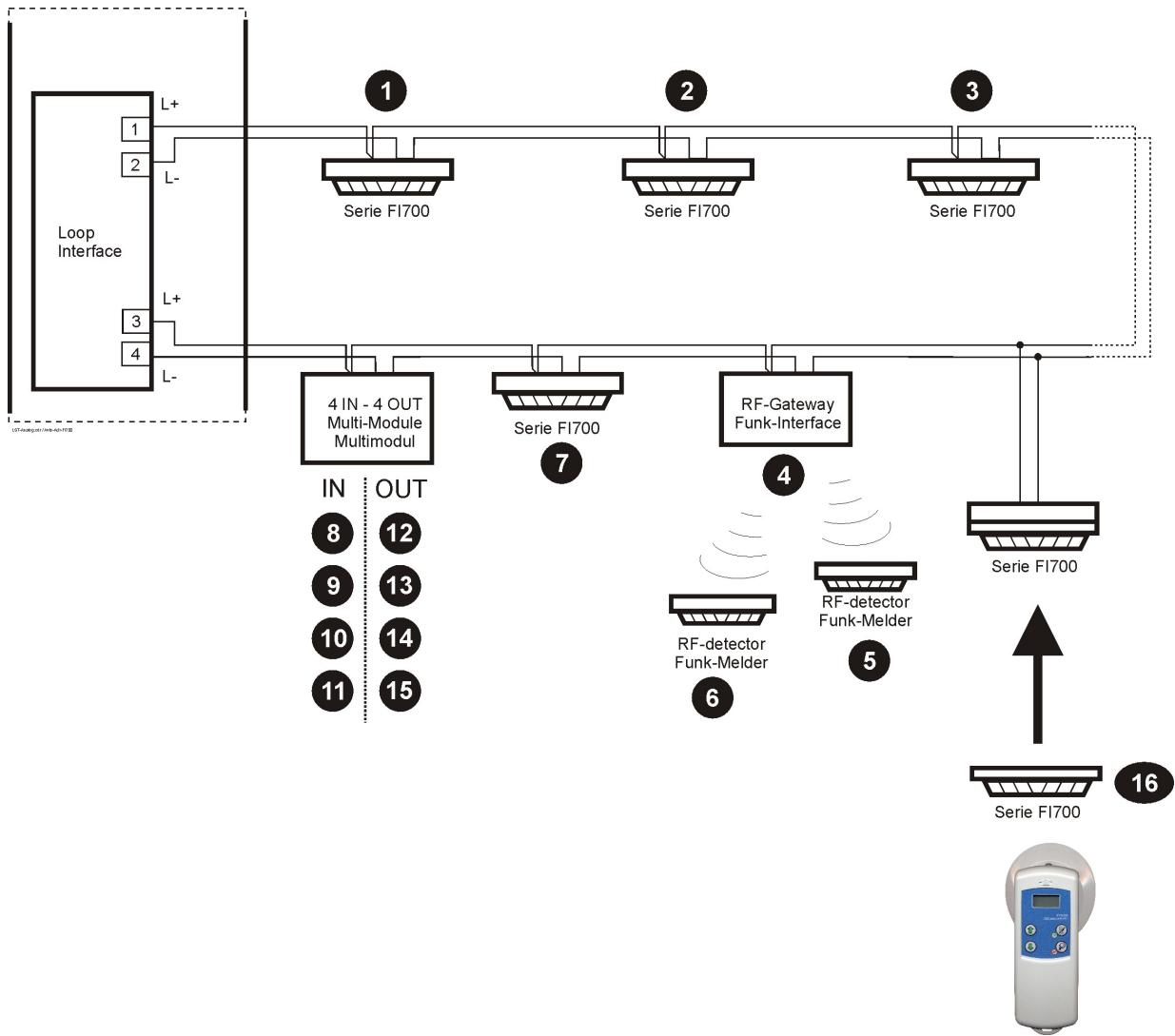
The next picture shows the address condition after the start of the AUTO-setup. The element addresses have been set to 255 (factory default value).



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 separated **BEFORE** starting the addressing procedure, the addressing of the loop elements will be incorrect.

If an RF Gateway (FI700/RF/W2W) is present at the loop, the addresses of the already configured radio elements are also automatically assigned. A later expansion of the radio system (further RF detectors) is not possible, as there may be an overlap of addresses after the insertion of RF detectors. The automatic assignment of addresses also applies to multi-modules. A unique address will be allocated to each input and output.

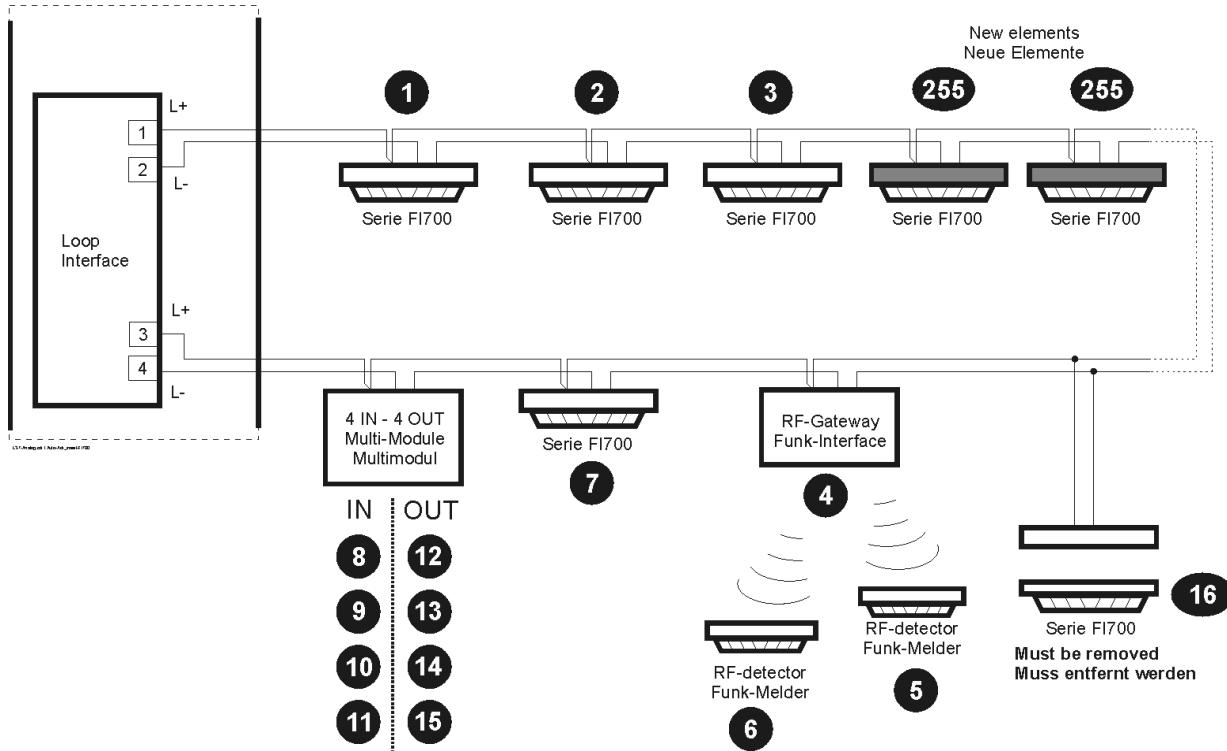
After the initialisation of the element addresses (to 255), the addresses are reassigned based on the element's loop position. After the AUTO-setup, automatically addressed elements are displayed as AUTO-setup elements in PARSOFT and also on the fire detection control panel. If no address has been assigned 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]

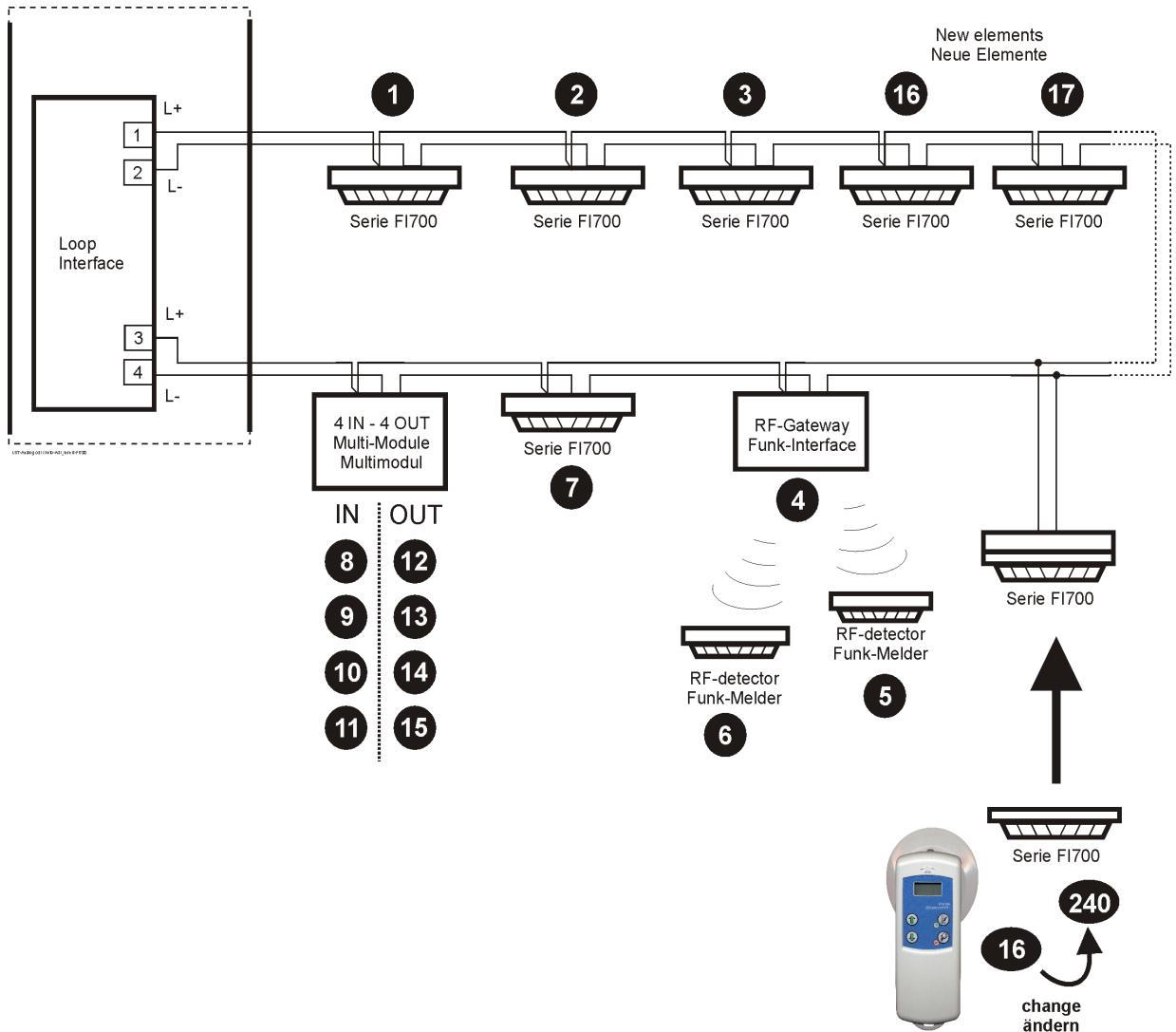
Starting the AUTO-setup at the **control panel** (authorisation level 3) is done by selecting:
[Parameter settings]
[AUTO-setup]
[Initialize new devices]

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 don't have to modify the panel setup after AUTO-addressing, as the addresses of the branch devices don't 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 RF devices 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 loop elements (detectors, modules and sounders) of the Series FI700 and FI750. 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 determined.

 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.

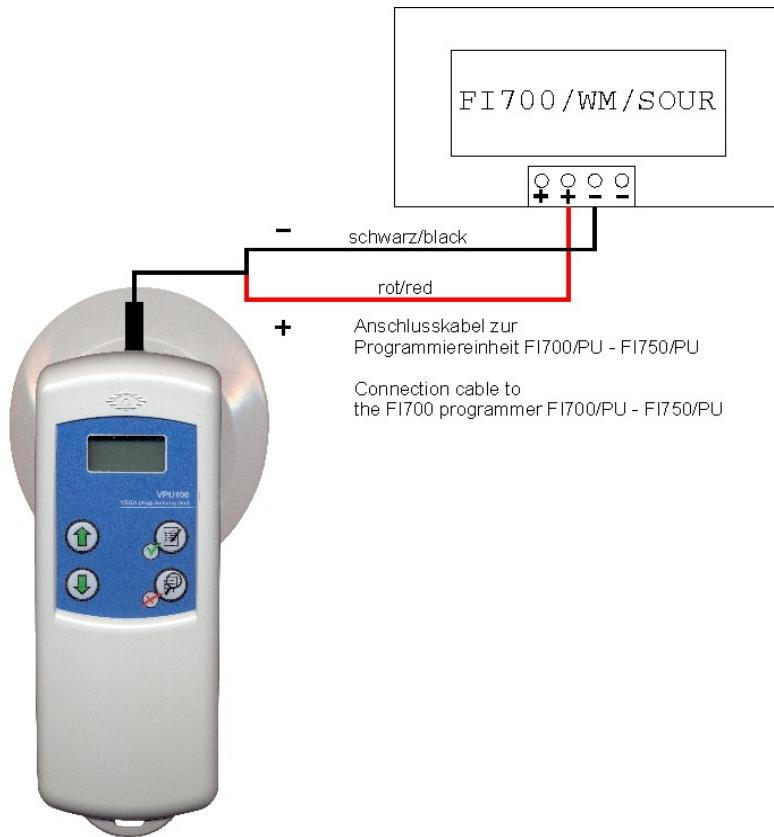
Automatic detectors

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 has 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.

3.4 Connection of Manual Call Points

The following manual call points can be connected to the fire detection control panel using 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/Handa	HM/1/72/17/xx

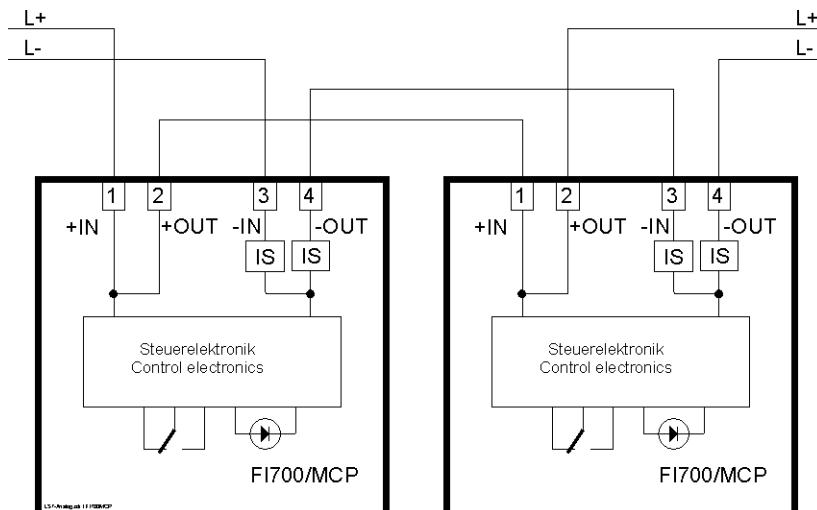
Each manual call point includes an isolator.

3.4.1.1 Programming of the address

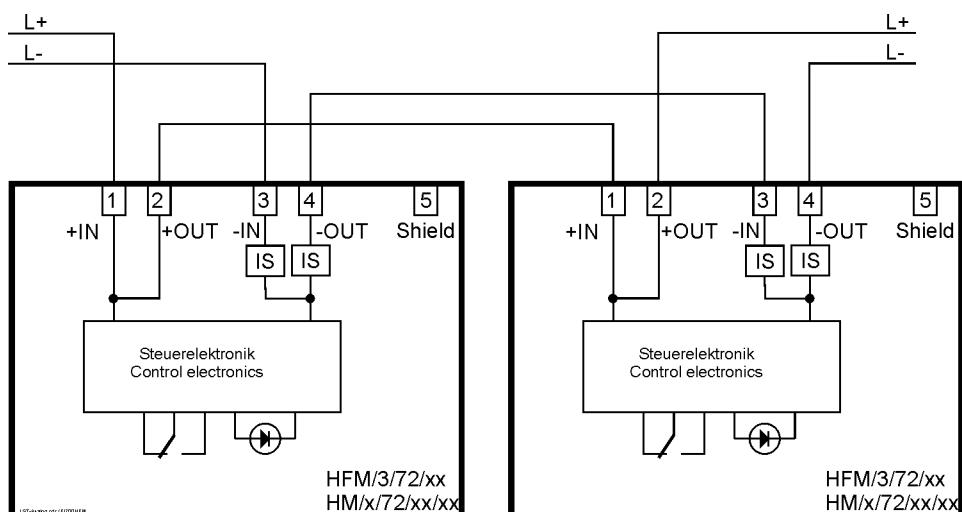
Detailed information can be found on page 79 in Chapter 3.3: „Address programming of loop elements“.

3.4.2 Manual Call Points – Series FI700/MCP

Connection of FI700/MCP



3.4.3 Manual Call Points – HFM / HM



3.5 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 ohms resistor is connected. All detectors Series FI700 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 fire detectors Series FI700 can be connected to a loop with 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 79 in Chapter 3.3: „Address programming of loop elements“.

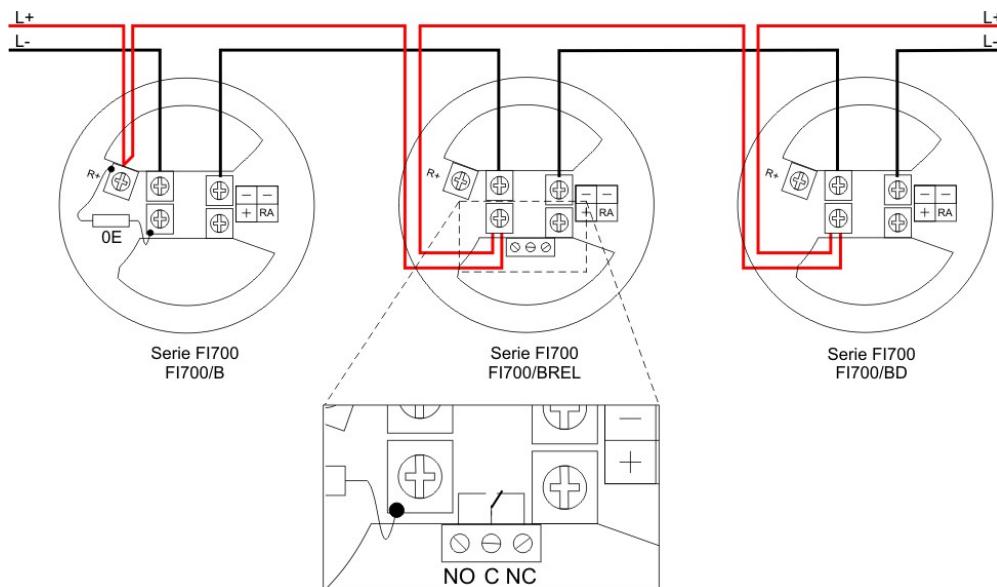
3.5.2 Connection of detector bases

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

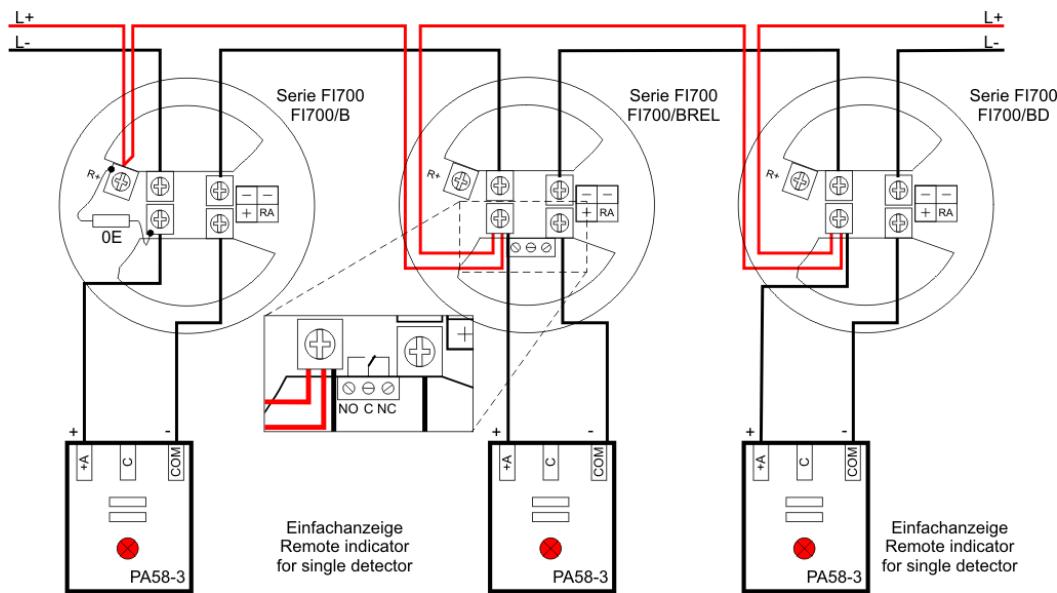
The contact rating of the relay base FI700/BREL is 1A at 30VDC.



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 can **not** 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 (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

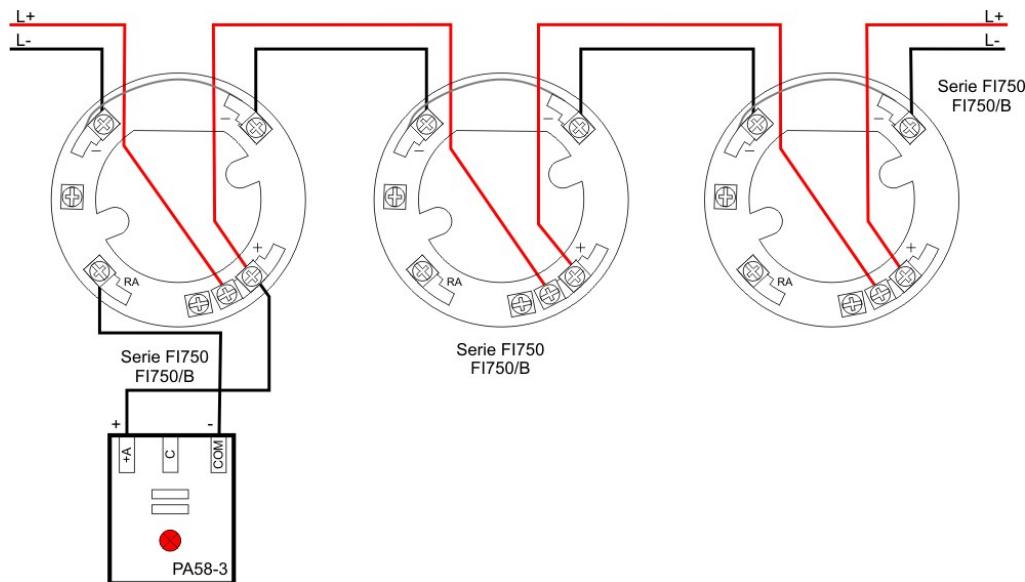
3.5.3.1 Programming the address of automatic detectors

How the address is set is described from page 79 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



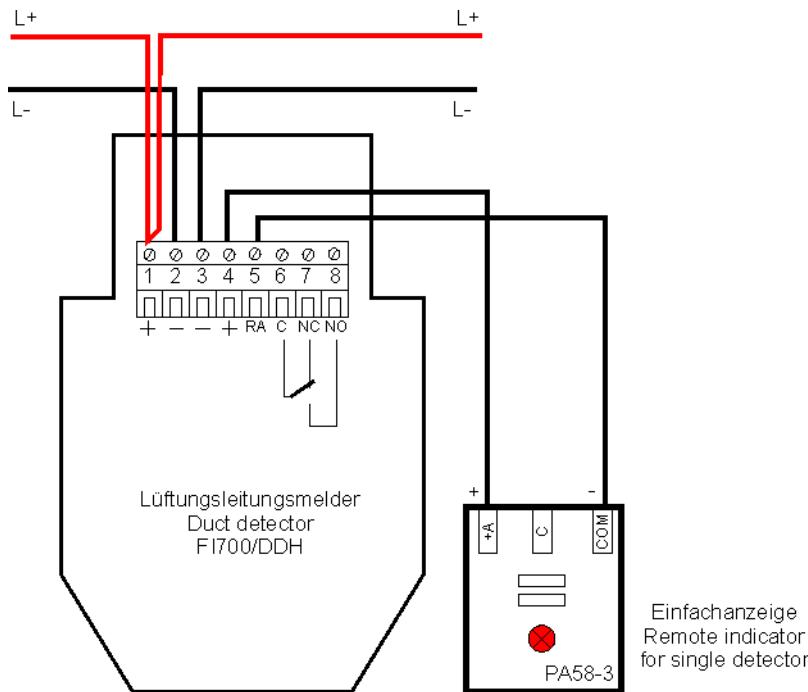
If the remote indicators are connected to Fire Detection Control Panels Series BC216, a maximum of 8 remote indicators can be simultaneously activated per loop, because the number of detector/module LEDs that can be activated is limited.



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 (available in the download area of the LST-website – registration required).

3.5.4 Connection of duct detector FI700/DDH

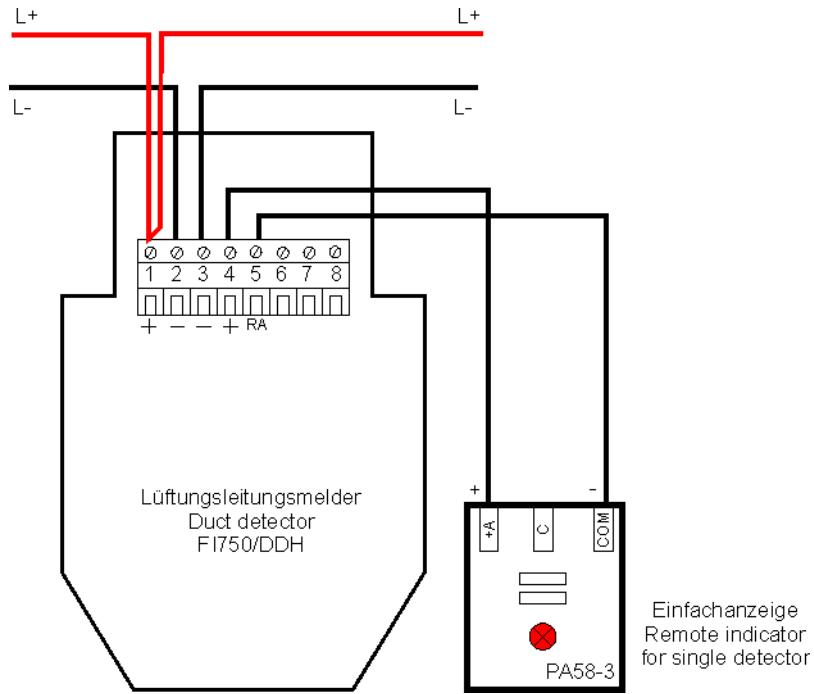
3.5.4.1 FI700/DDH with Series FI700



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 shown relay contacts 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.



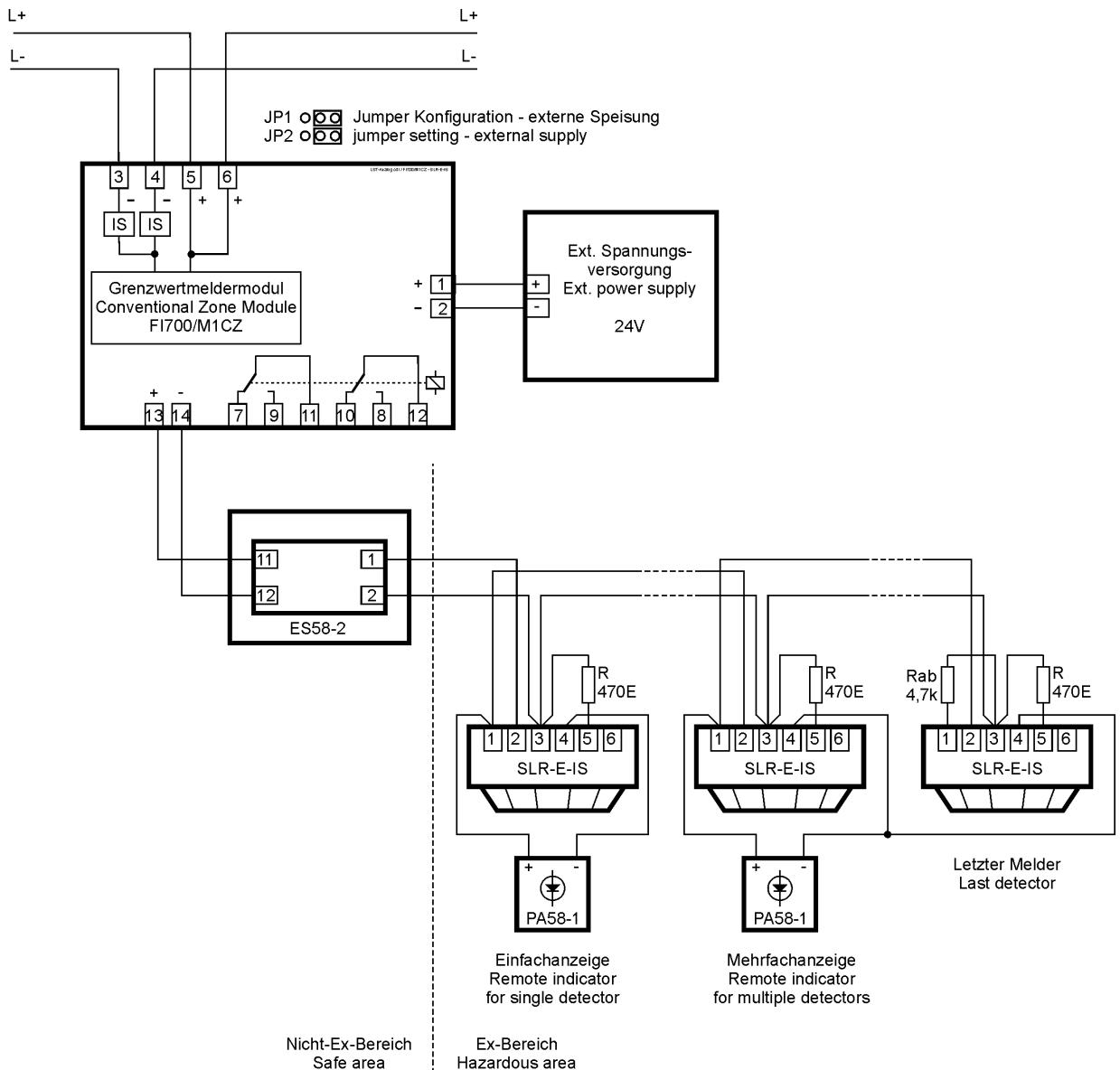
If the Conventional Zone Module FI700/M1CZ is used for the connection in a hazardous area, a resistive EOL element has to be installed.

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.



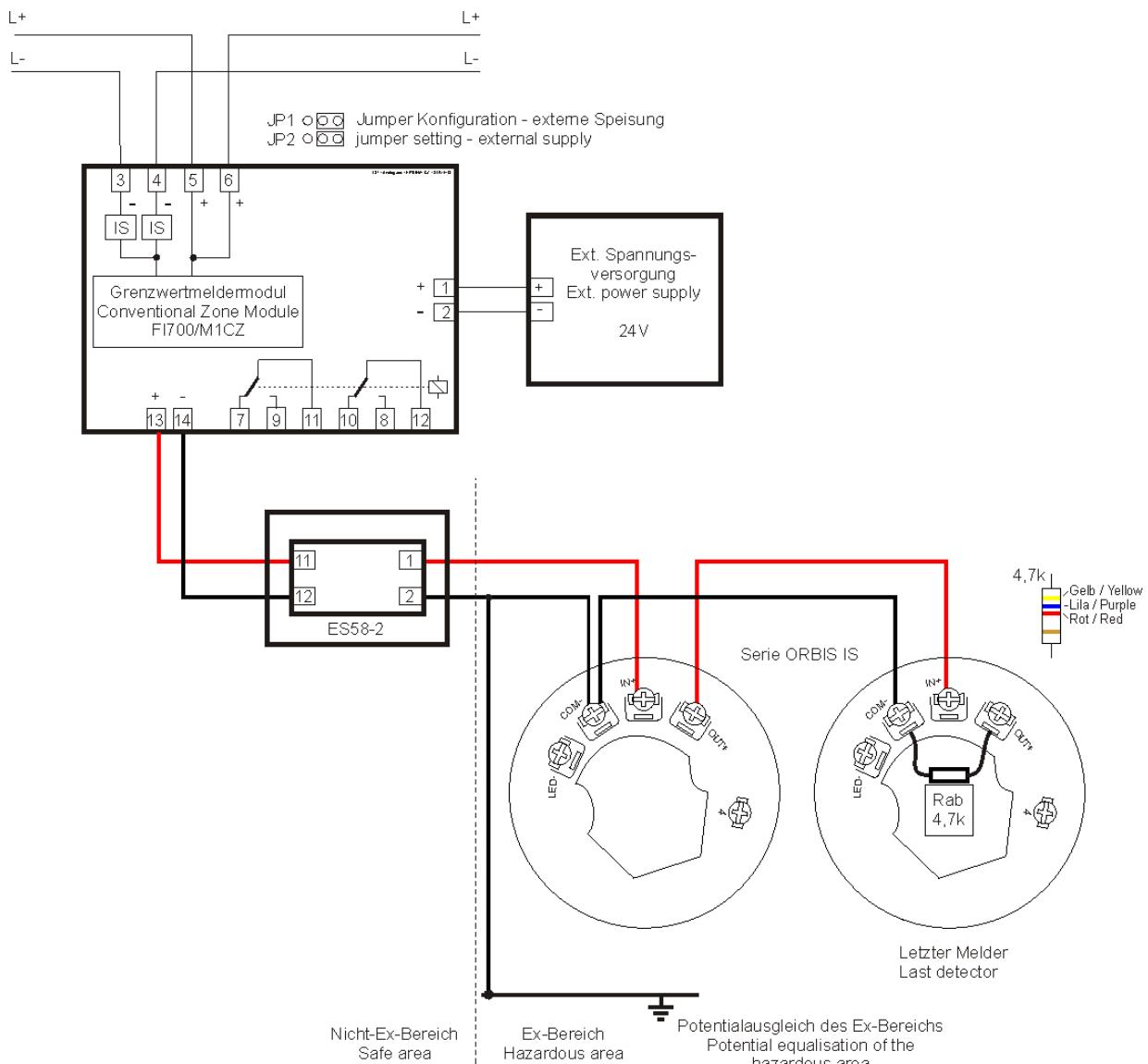
The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

3.6.1.2 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)

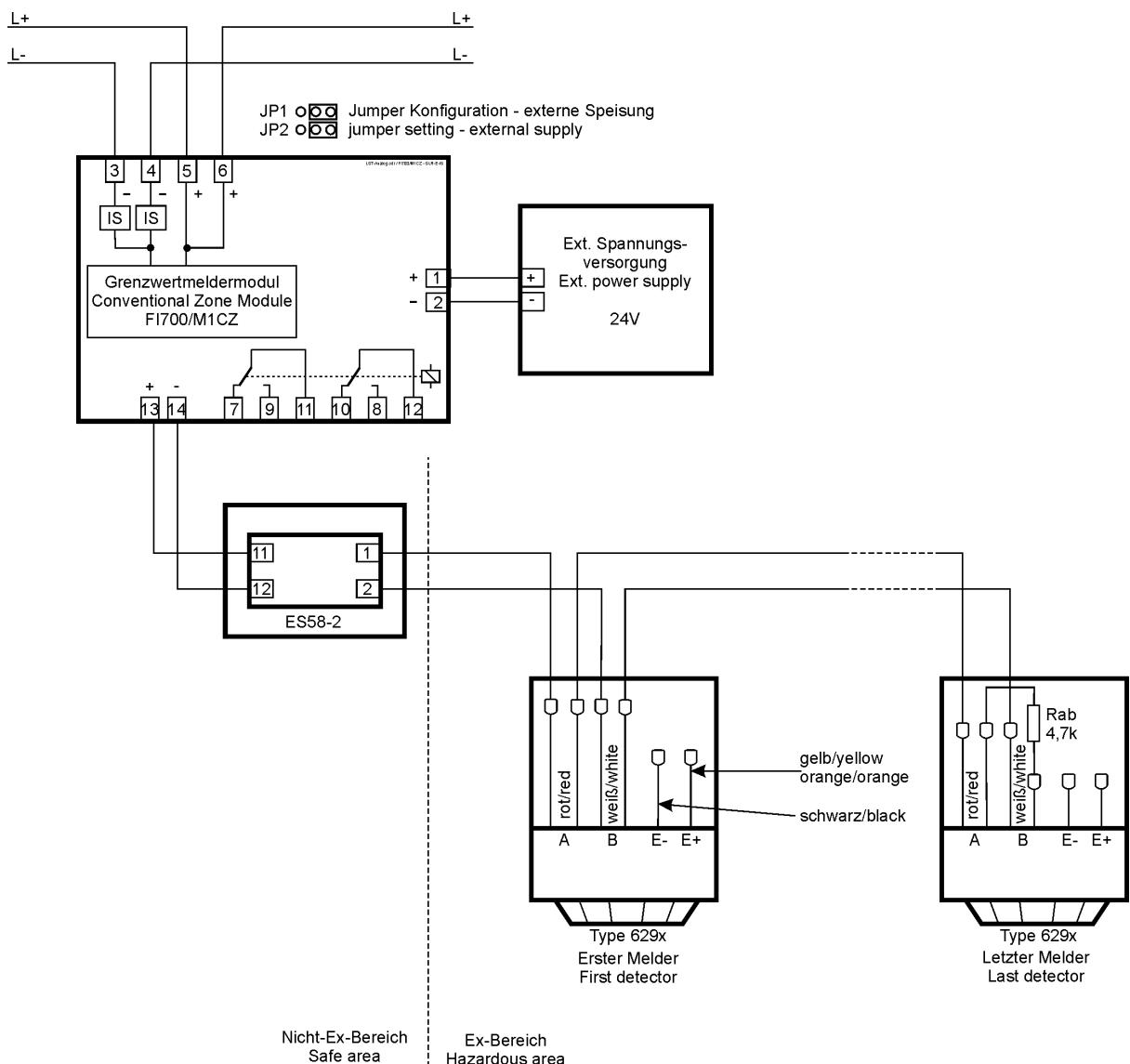
In the hazardous area, up to 28 detectors may be connected. For the connection of the ORBIS I.S. detectors, the Detector Base MB-50018 is needed.



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

3.6.1.3 Thermal Detectors 6295 and 6296

A maximum of 32 detectors 6295 or 6296 may be connected to a conventional zone interface.



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



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

3.6.2 Intrinsically safe detectors for hazardous areas

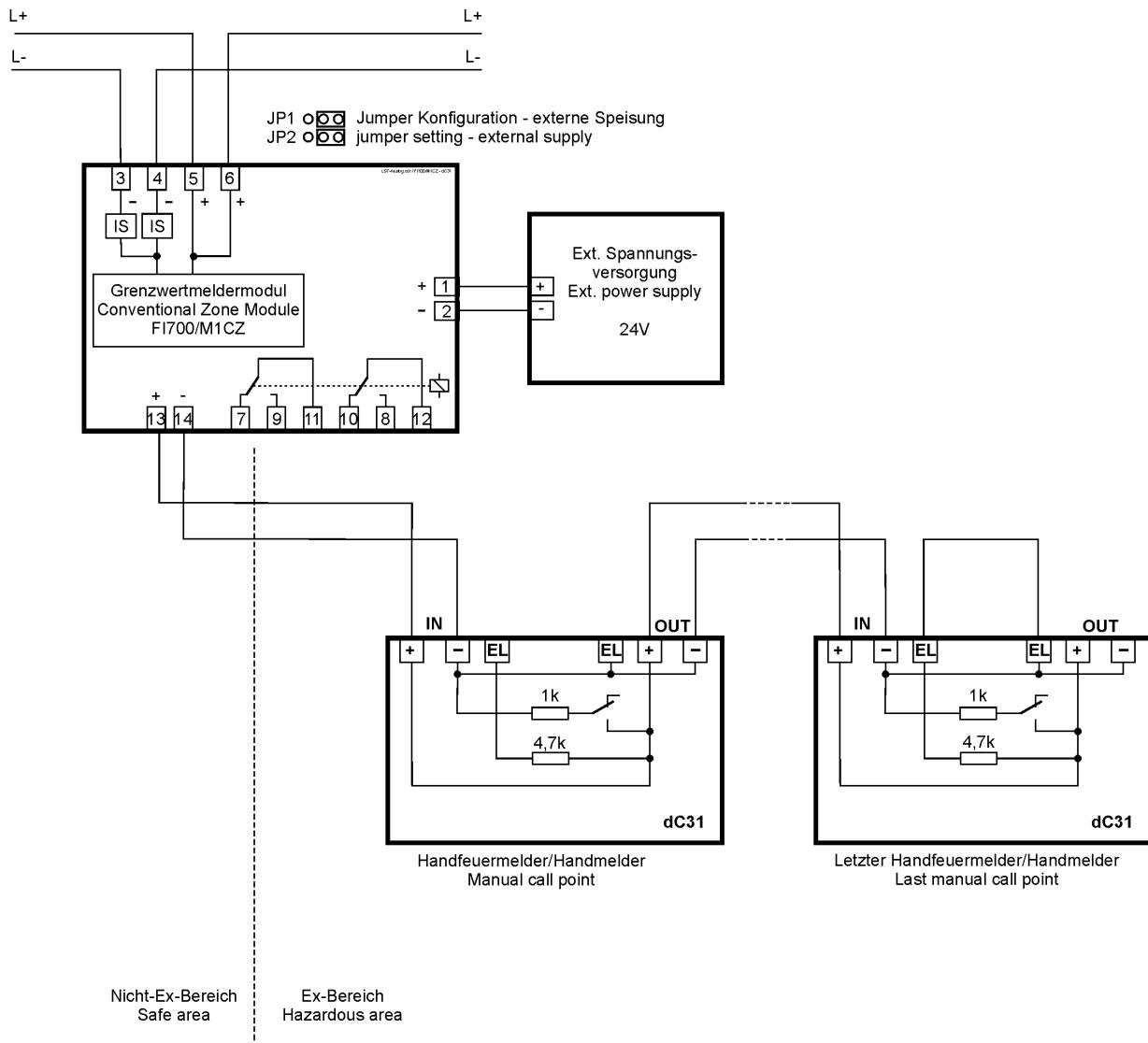
3.6.2.1 Manual call point Ex dC31

Due to the protection principles „increased safety“, „encapsulation“ and „protection by enclosures“ the Manual Call Point Ex dC31 can be used without any Safety Barrier ES58-2 or Z978.

 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 can not be changed at a later stage.

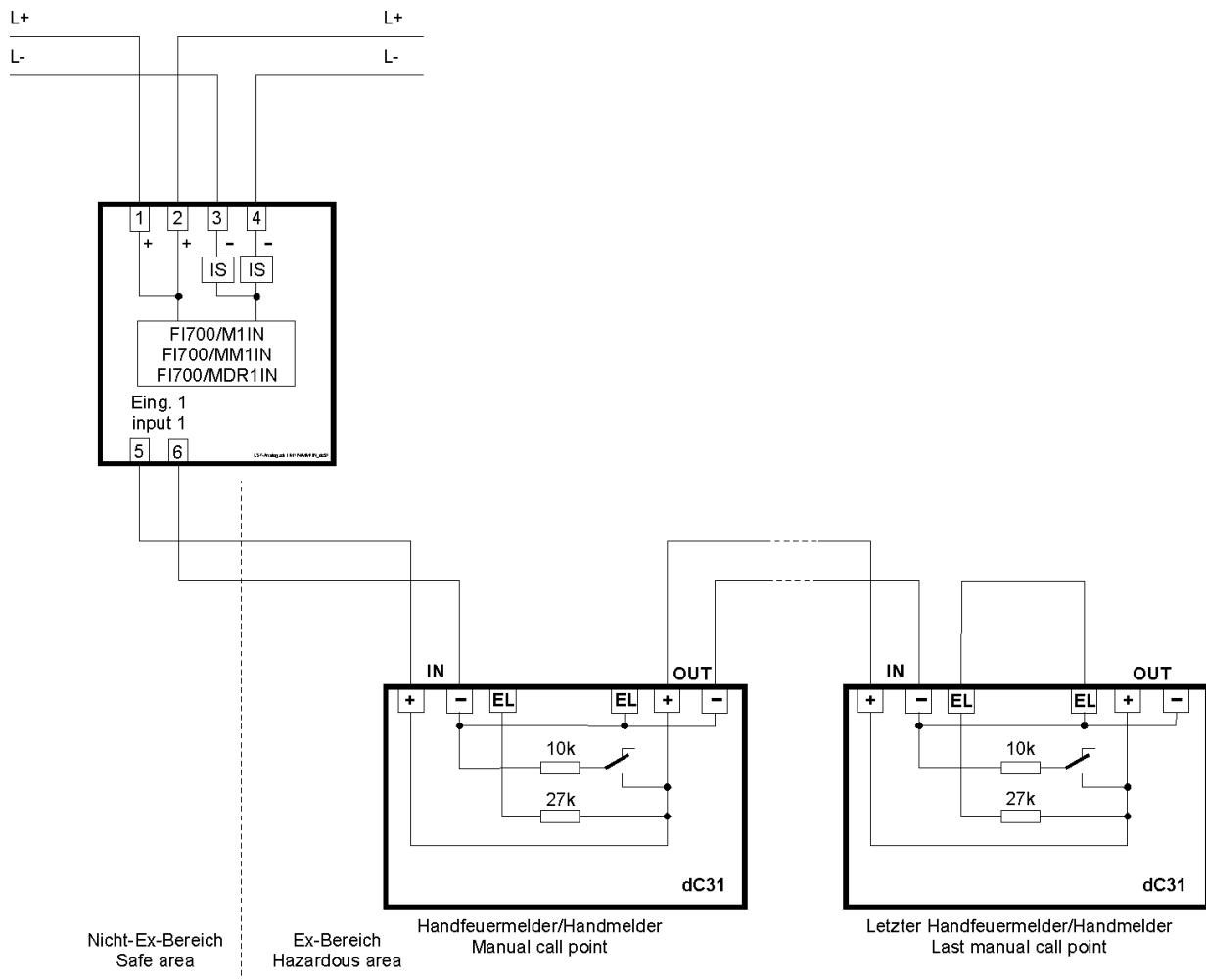
 The installation in the hazardous area has to comply with the local regulations and with EN 60079 because the energy in the supply line is not limited by a safety barrier.

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.

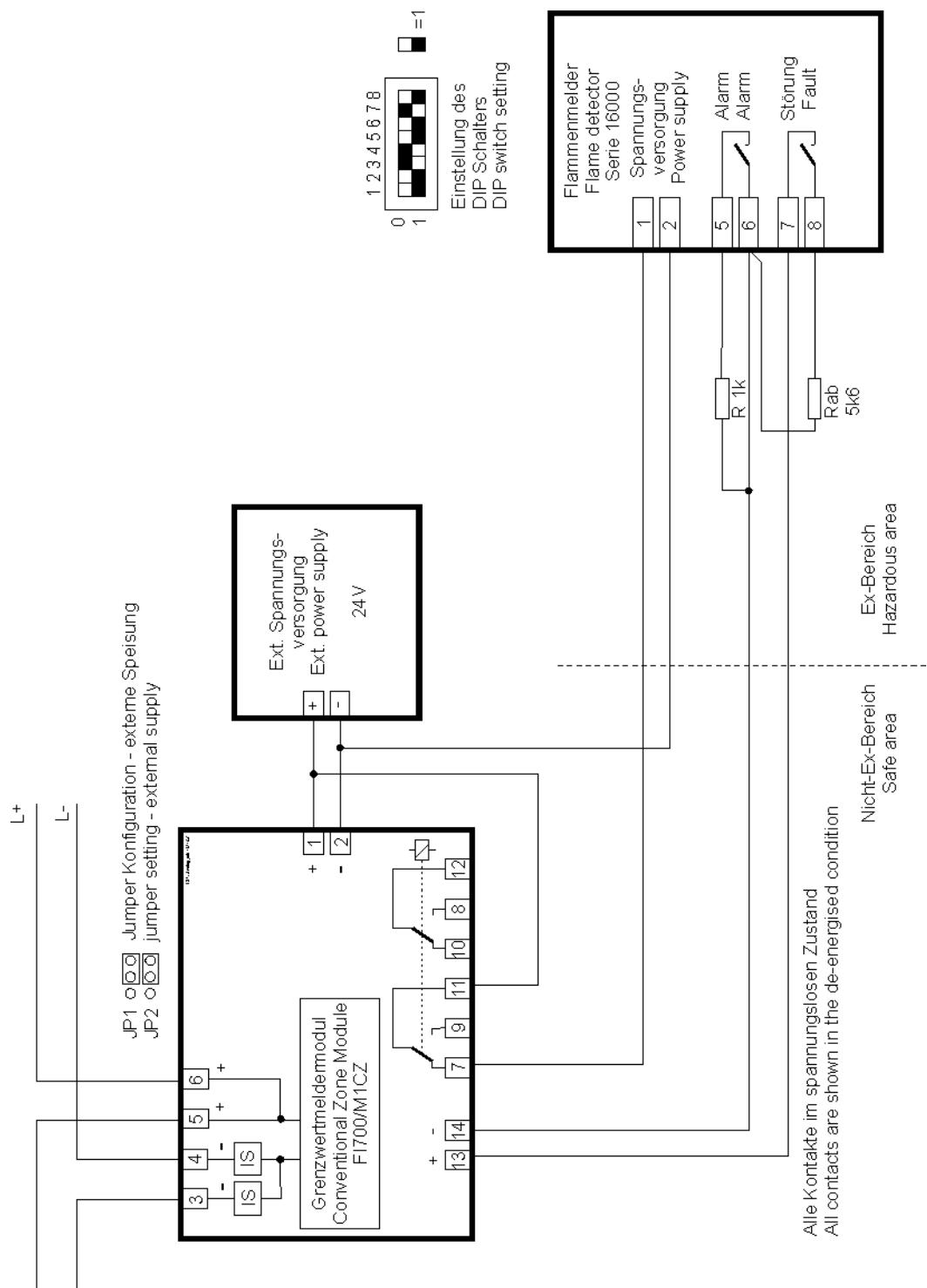
Type	EN54-10 Class 1	SW6	SW7	Response time
16511	IR2	0	0	8s
16519	IR3	1	0	4s
16521	UV/IR2	0	1	2s
		1	1	1s

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.



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

Connection with Conventional Zone Module FI700/M1CZ:



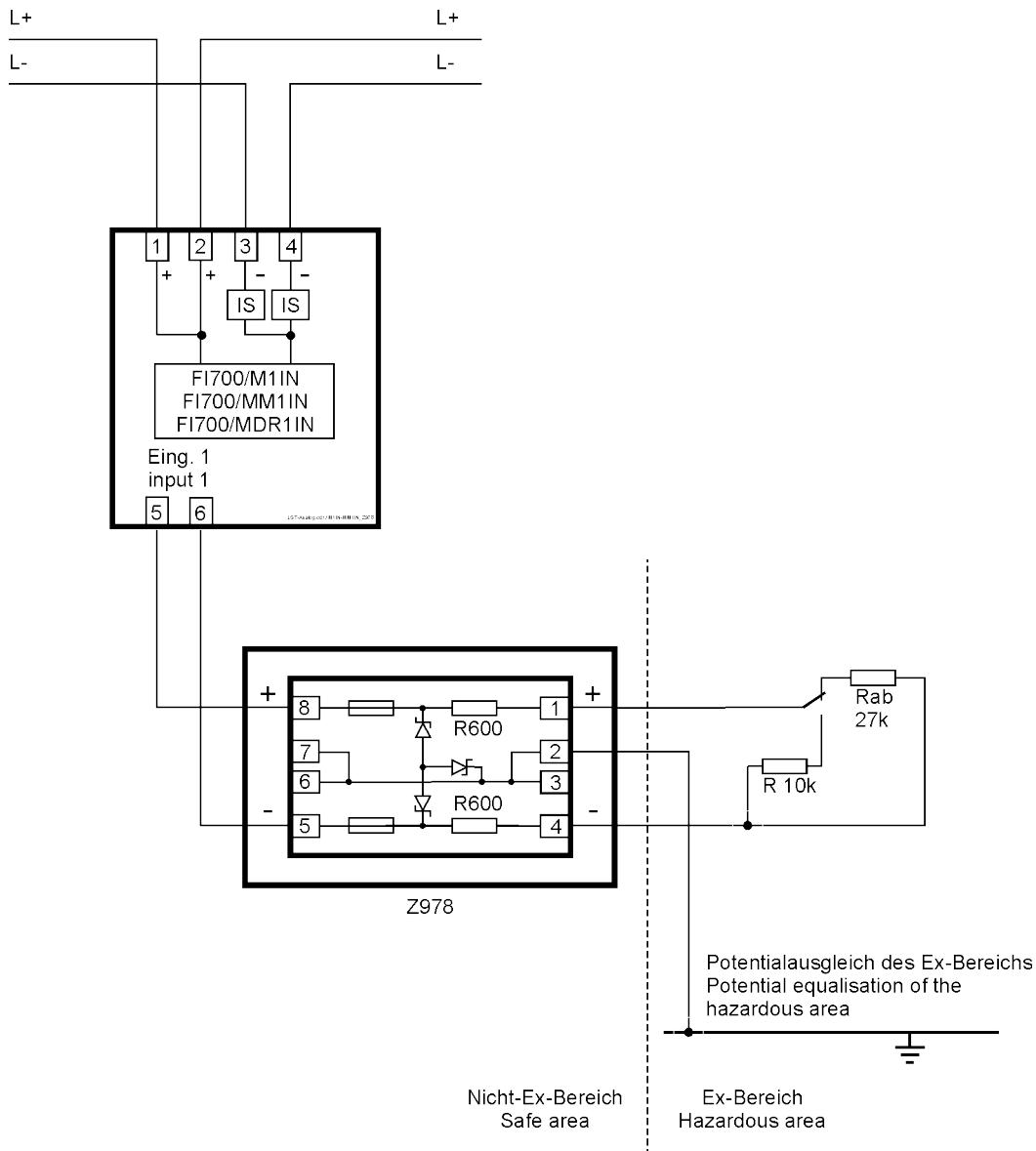
The installation in the hazardous area has to comply with the local regulations, guidelines and requirements.

3.6.3 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 designation in accordance with Section 12 of DIN EN 50020 in intrinsically safe circuits. For this purpose the Zener Barrier Z978 is used.

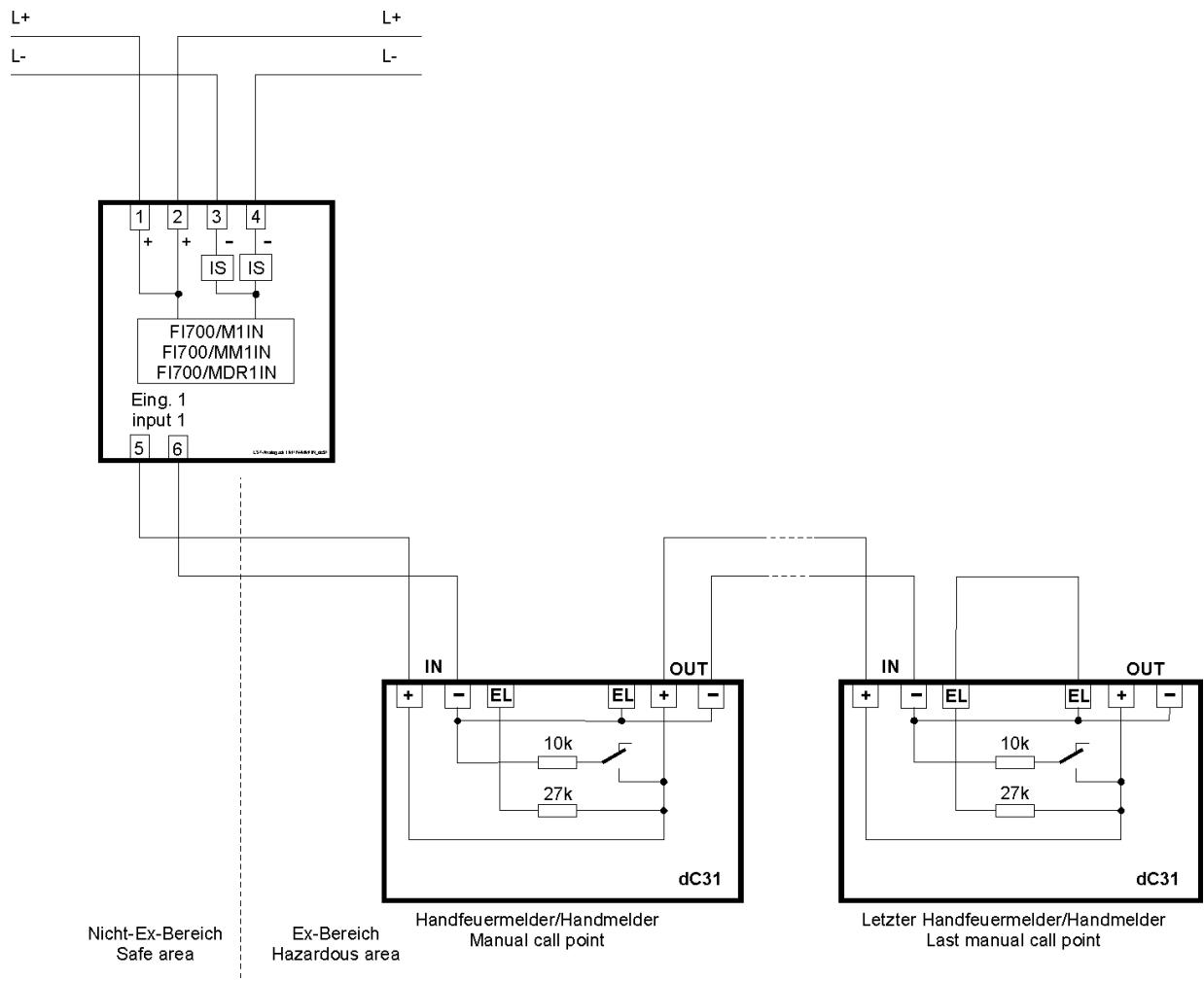
3.6.3.1 Contact detectors with monitor modules and Zener Barrier Z978

Monitor modules can be used to connect contact detectors which are located in the hazardous area. The usual alarm resistor and end-of-line resistor has to be used. The below diagram shows the connection to a Monitor Module FI700/M1IN.



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 radio detectors Series FI700/RF

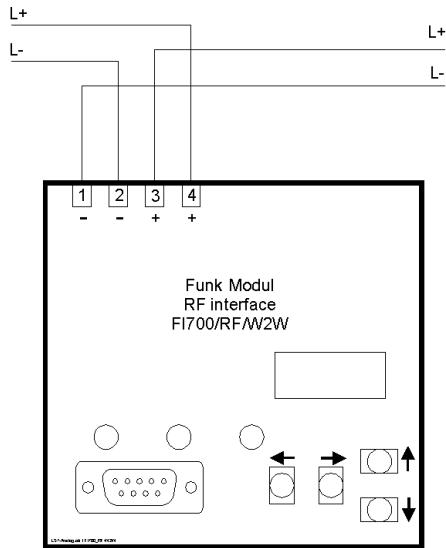
In order to be able to use radio detectors Series FI700/RF, you first have to connect an RF Interface FI700/RF/W2W to the loop. Also see the User Manual „RF fire detection system FI700/RF“.

3.7.1 RF Interface FI700/RF/W2W

3.7.1.1 Notes

- ◆ Please consult the manual of the radio interface to obtain relevant information about how to link radio devices to the interface.
- ◆ The RF Interface FI700/RF/W2W supports up to 32 devices.

3.7.1.2 Connection

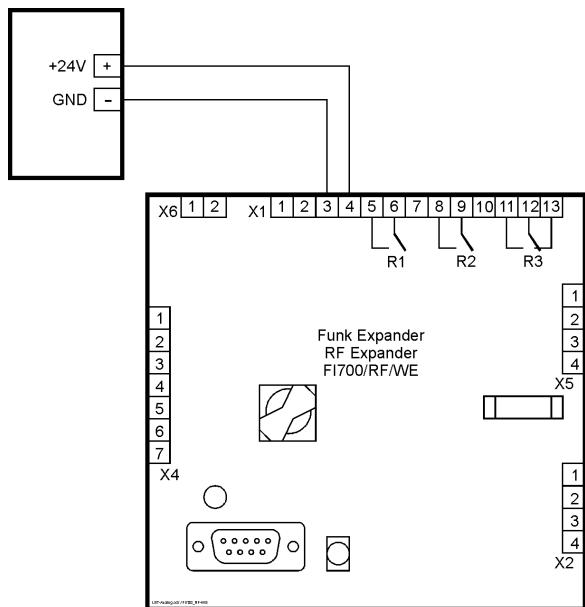


The radio interface is directly connected to the loop and does not require any additional power supply.

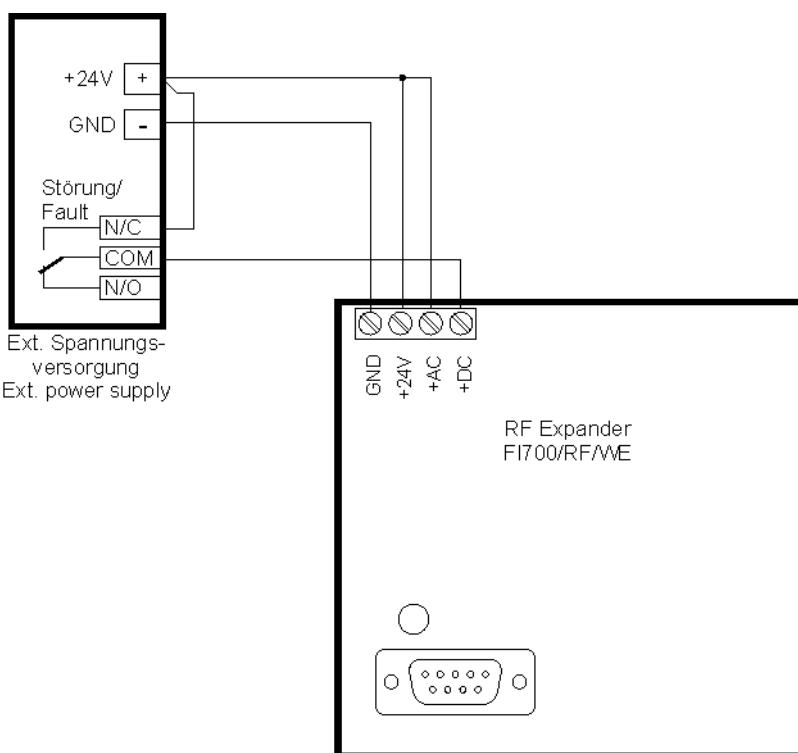
3.7.2 RF Expander FI700/RF/WE

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

3.7.2.1 Connection – old version



3.7.2.2 Connection – new version



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

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

By means of the Conventional Zone Module FI700/M1CZ, the following automatic conventional detectors can be connected to the fire detection control panel:

- ◆ Detectors Series FC600 / FC650
- ◆ Flame Detector Series 16000
- ◆ Linear Heat Detector Unit Alarmline LWM-1
- ◆ Linear Heat Detector Unit SKM-03
- ◆ Linear Heat Detector Unit SCU800
- ◆ Beam Smoke Detector FR50/100
- ◆ Beam Smoke Detector FR2000
- ◆ Beam Smoke Detector FR3000
- ◆ Beam Smoke Detector FR5000
- ◆ Beam Smoke Detector FR5000 (Issue-11)
- ◆ Beam Smoke Detector thefirebeam plus
- ◆ Beam Smoke Detectors 6500R and 6500RS
- ◆ Smoke Aspiration System Titanus PRO·SENS – TP-1/A with one detector module
- ◆ Smoke Aspiration System Titanus PRO·SENS – TP1/A with 2 detector modules
- ◆ Smoke Aspiration System Titanus Super Sens - T-SS
- ◆ Smoke Aspiration System Vesda VLF-250 / VLF-500
- ◆ Smoke Aspiration System ASD535 with one channel
- ◆ Smoke Aspiration System ASD535 with two channels
- ◆ Smoke Aspiration System ASD533
- ◆ Smoke Aspiration System FFAST LT – Model FL0122
- ◆ Smoke Aspiration System FFAST 8100E
- ◆ Thermal Detectors 6295, 6296, 6297 and 6298
- ◆ Thermal Max Detector SWM-1KL
- ◆ Thermal Max Detector SWM-1KL-140
- ◆ Thermal Max Detector HT-27121-275

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 disconnecting the zone for at least 10 seconds.

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

According to the programming 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 capacitor **4.7µF** or the **4k7** resistor.

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

3.8.1 Address setting

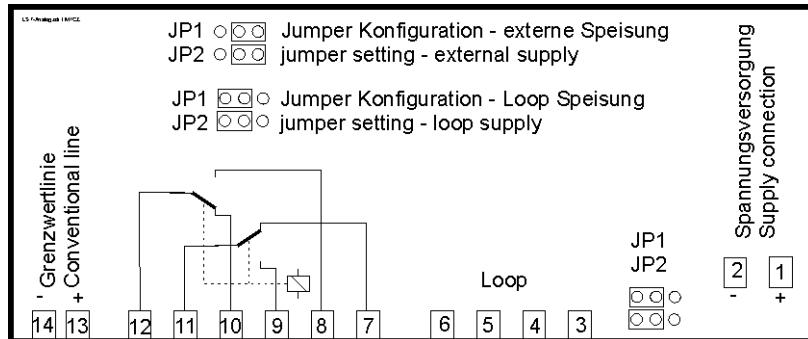
Detailed information can be found on page 79 in Chapter 3.3: „Address programming of loop elements“.

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

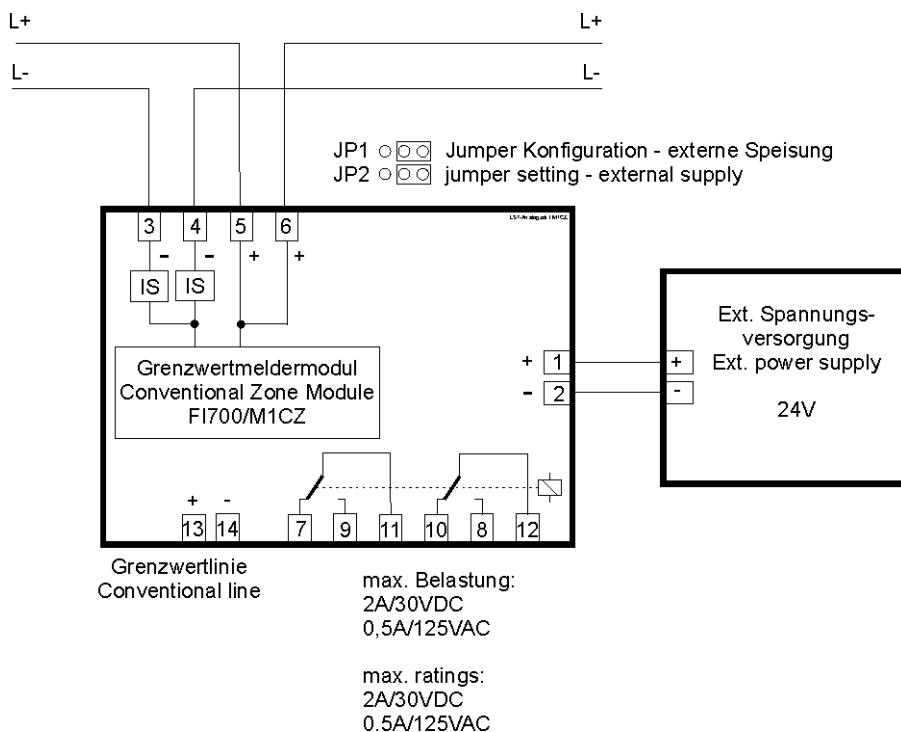
3.8.2 Power supply

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

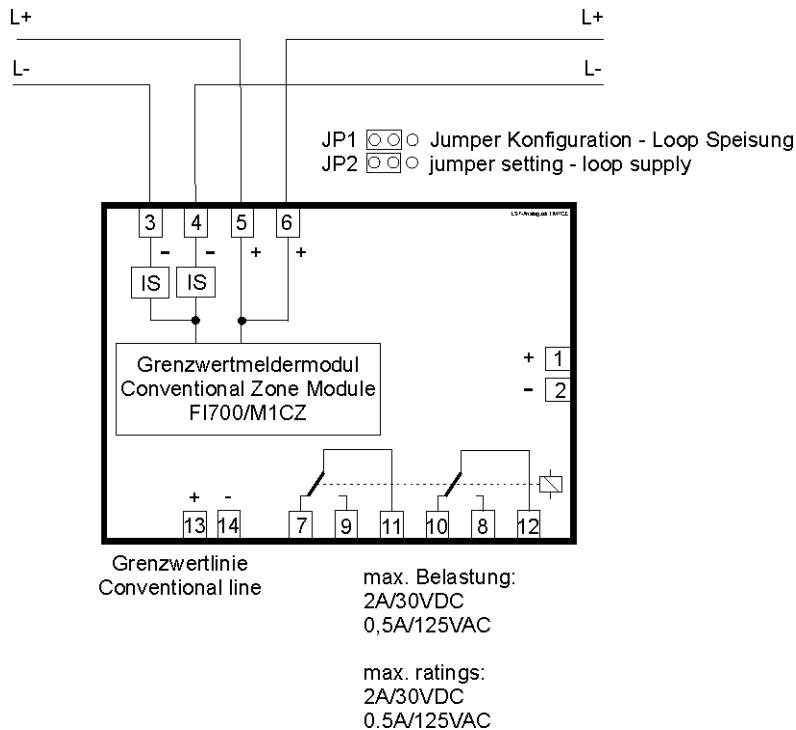


If an external power supply is used for the FI700/M1CZ, the two jumpers on the module have to be set according to the above drawing.



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



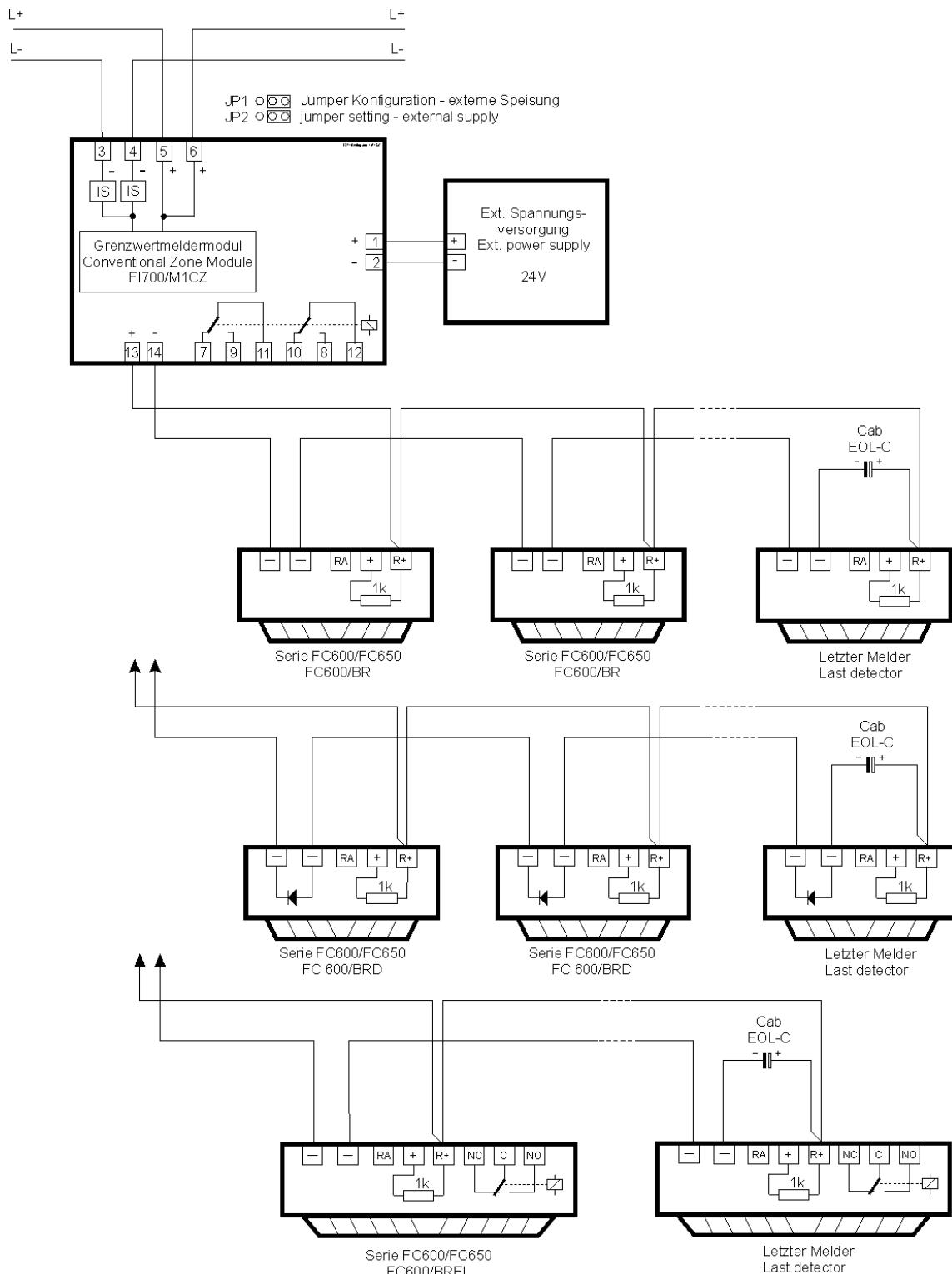
If power is supplied through the loop, the two jumpers on the module have to be set according to the drawing. In this case, the current demand of the loop can be ascertained by means of the loop calculator spreadsheet for Labor Strauss detectors. It is available in the download area of the LST-website (registration required) under „Tools - Spreadsheets for calculation“.

3.8.3 Detectors Series FC600 / FC650

A maximum of **20** detectors Series FC600 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.

3.8.3.1 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.

3.8.4 Flame Detector Series 16000

3.8.4.1 Note

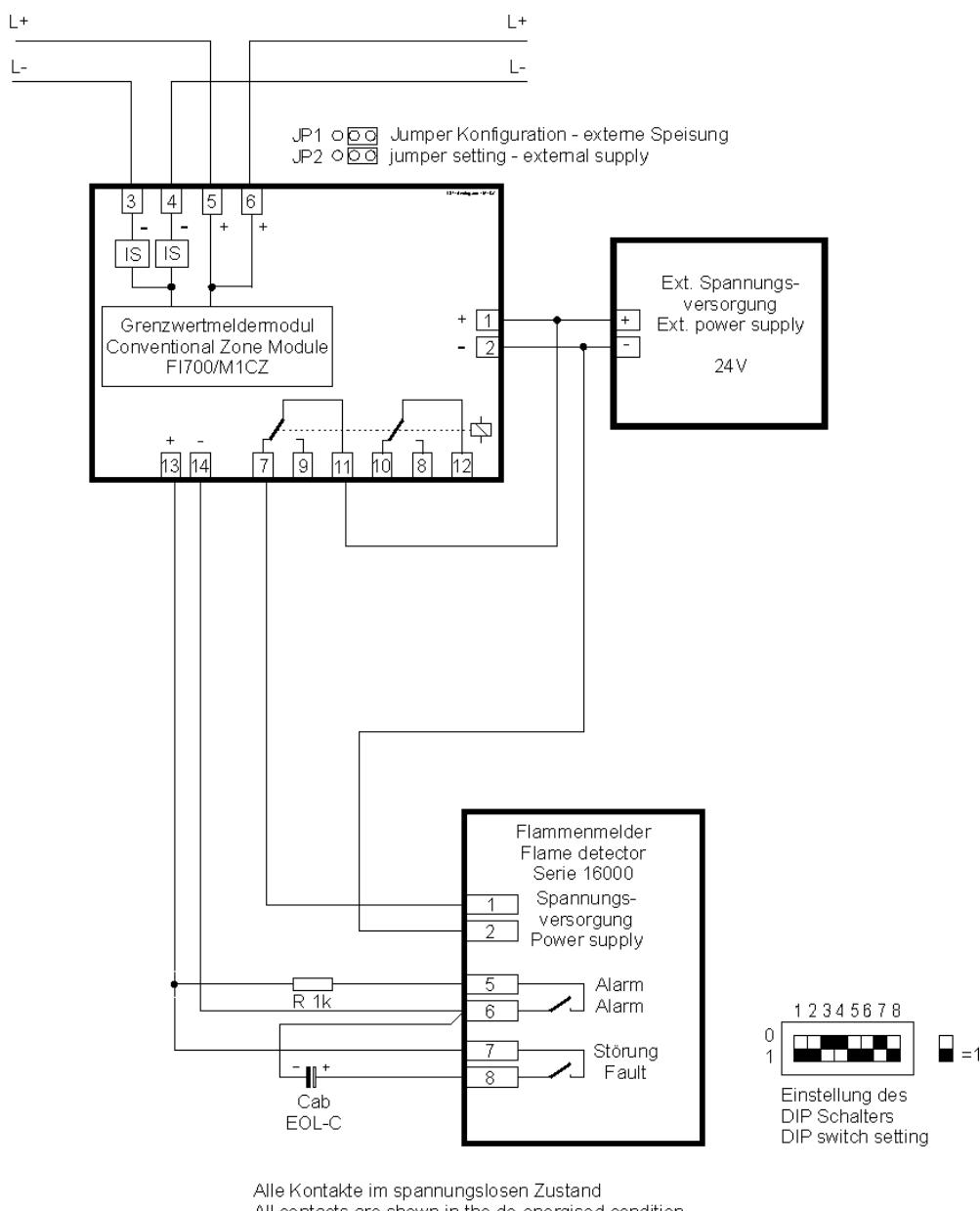
The supply voltage of the flame detector is routed via the Conventional Zone Module FI700/M1CZ. The supply voltage is interrupted by the module to reset the alarm condition.

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	EN54-10 Class 1
16581	IR2
16589	IR3
16591	UV/IR2

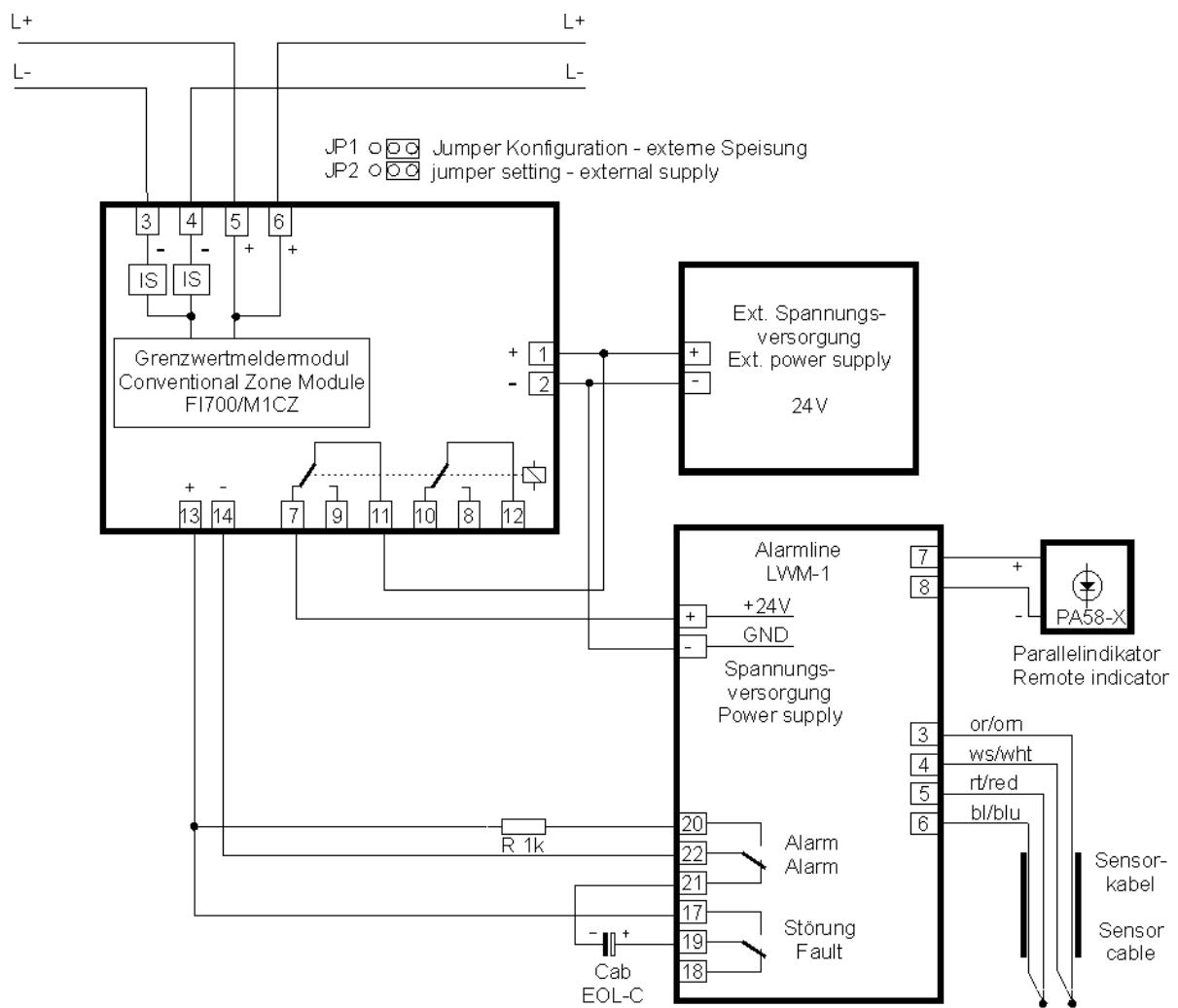
SW6	SW7	Response time
0	0	8s
1	0	4s
0	1	2s
1	1	1s

3.8.4.2 Connection



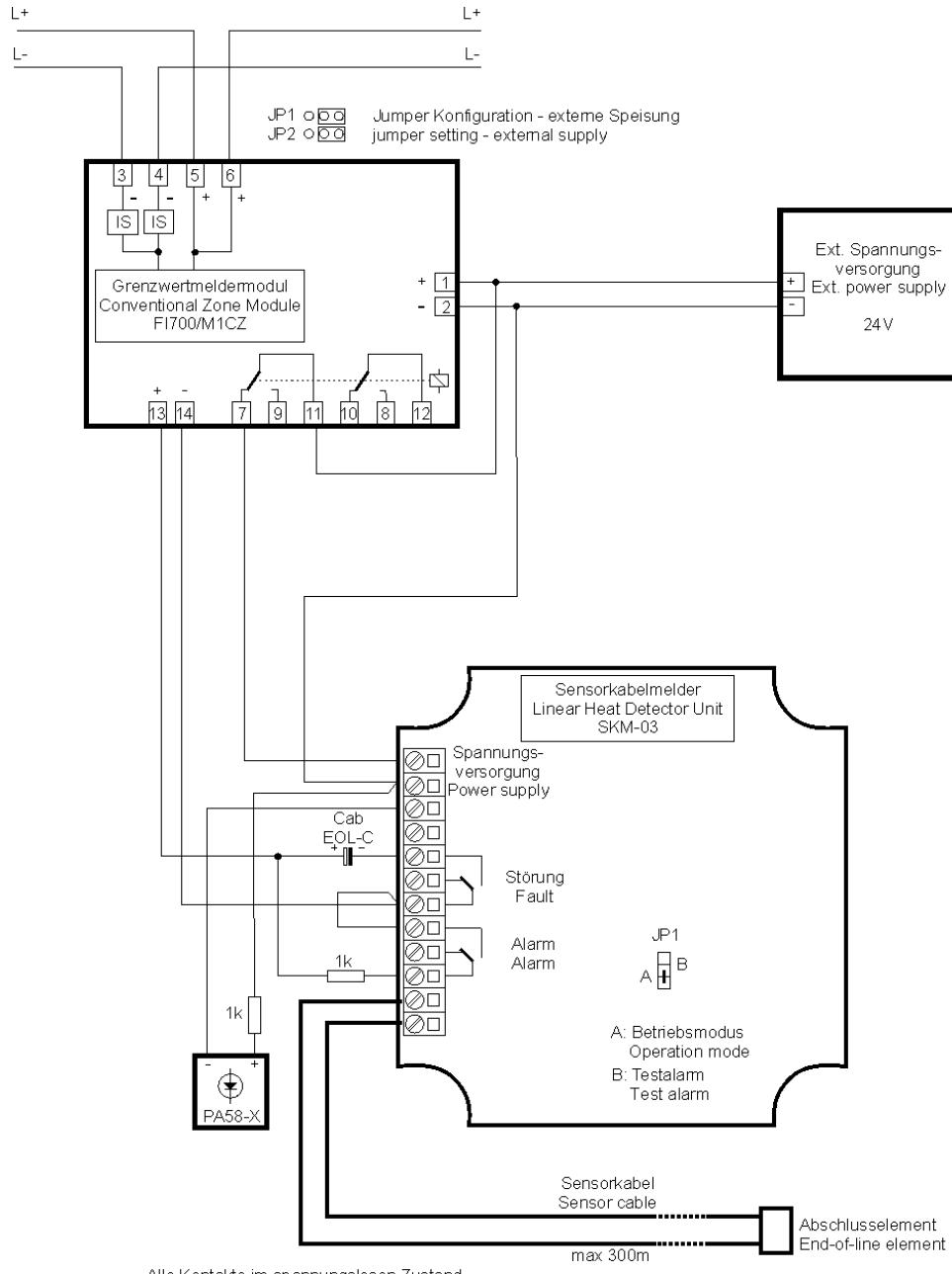
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.5 Linear Heat Detector Unit Alarmline LWM-1



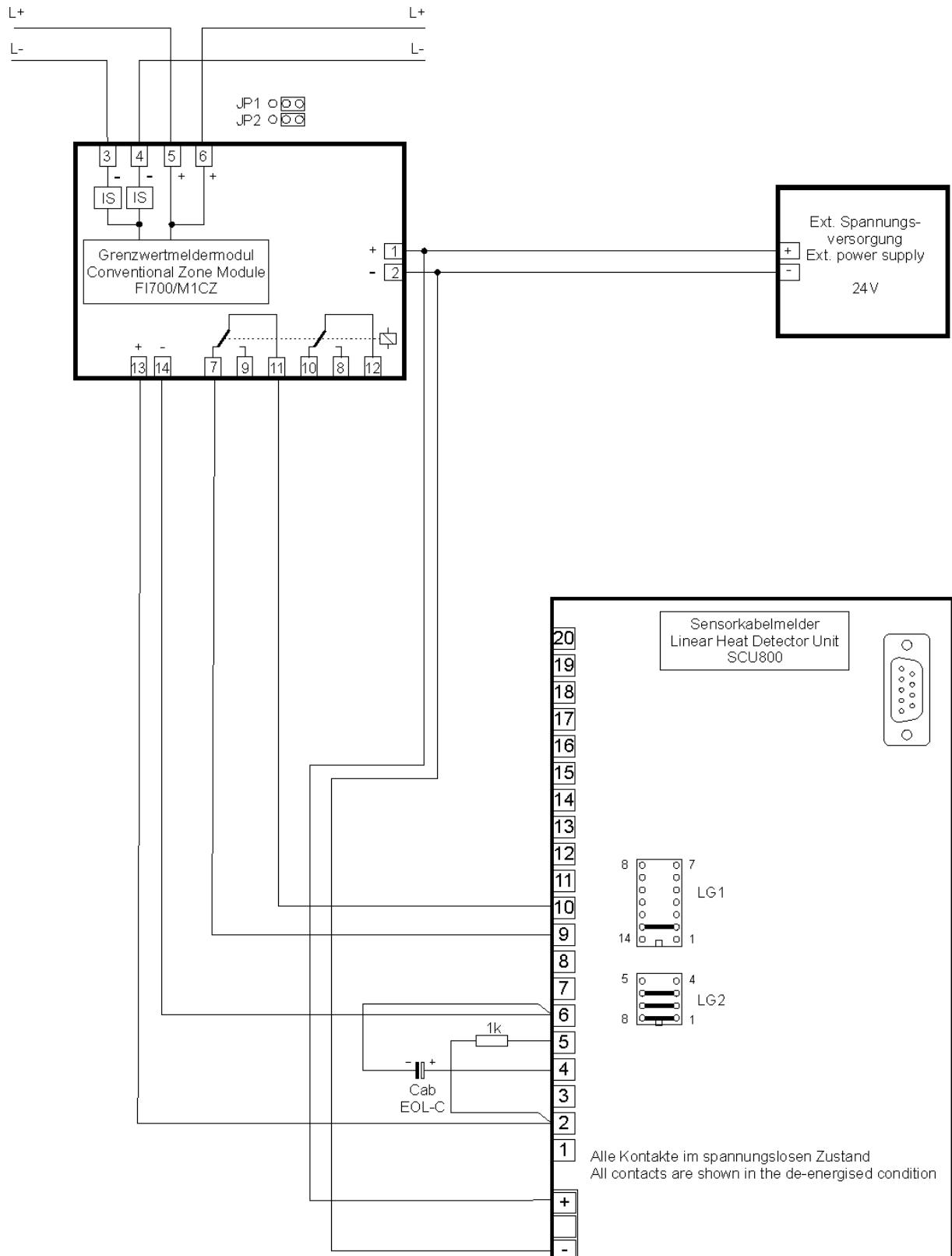
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.6 Linear Heat Detector Unit SKM-03



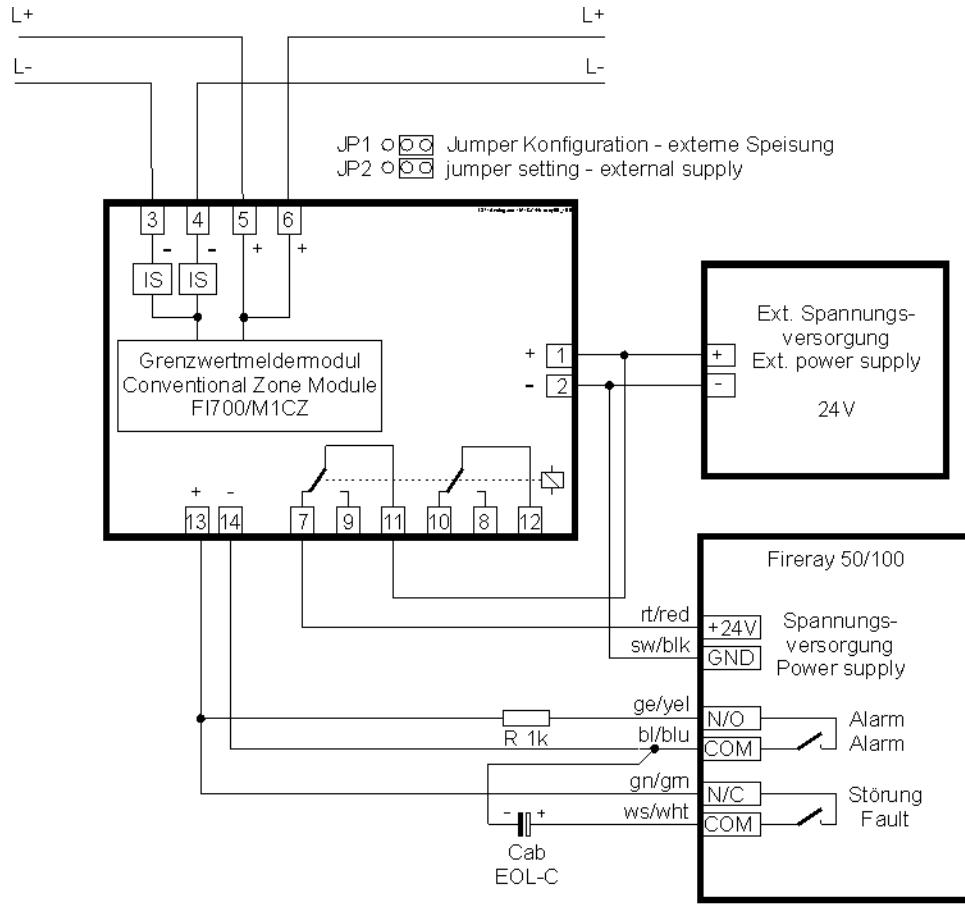
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.7 Linear Heat Detector Unit SCU800



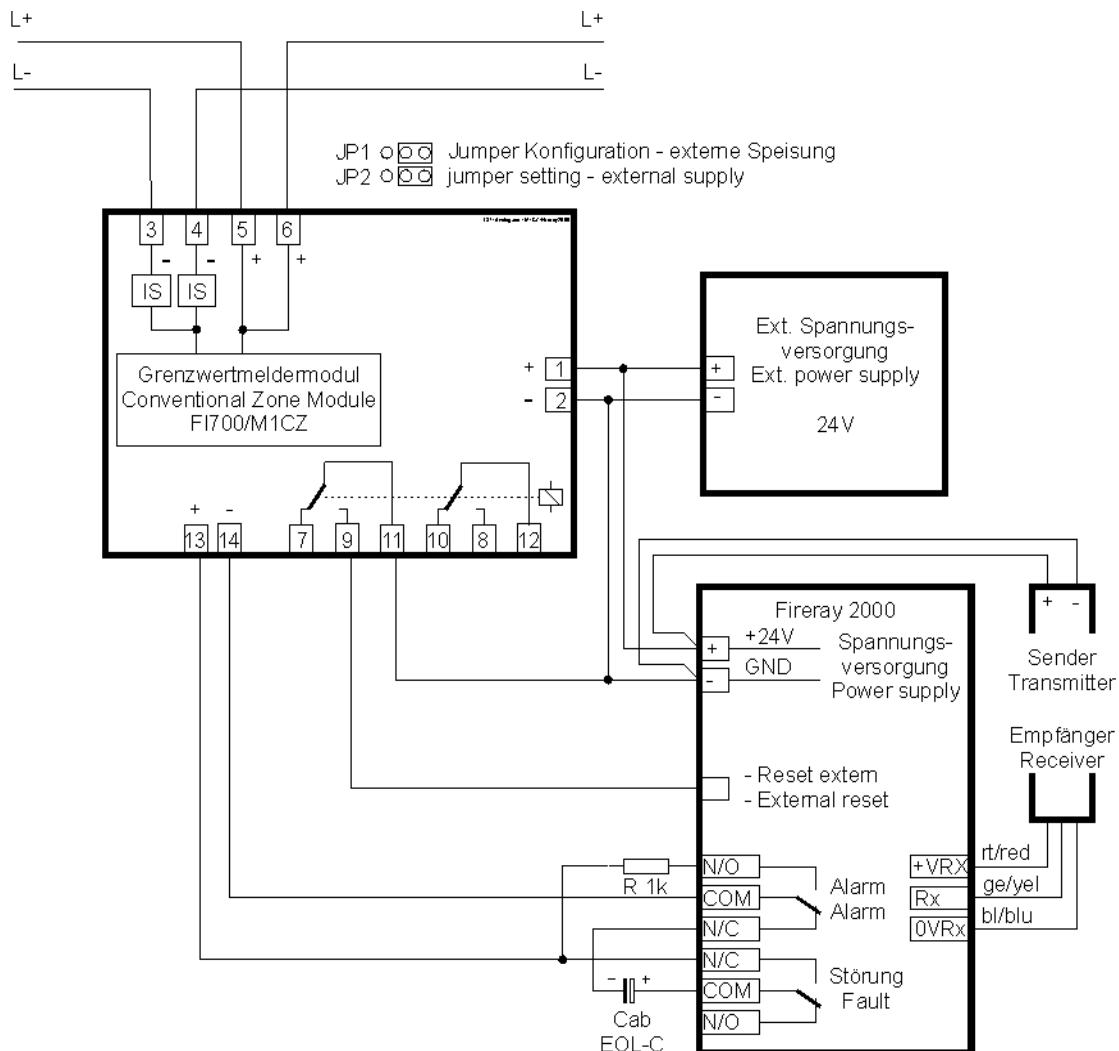
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.8 Beam Smoke Detector FR50/100



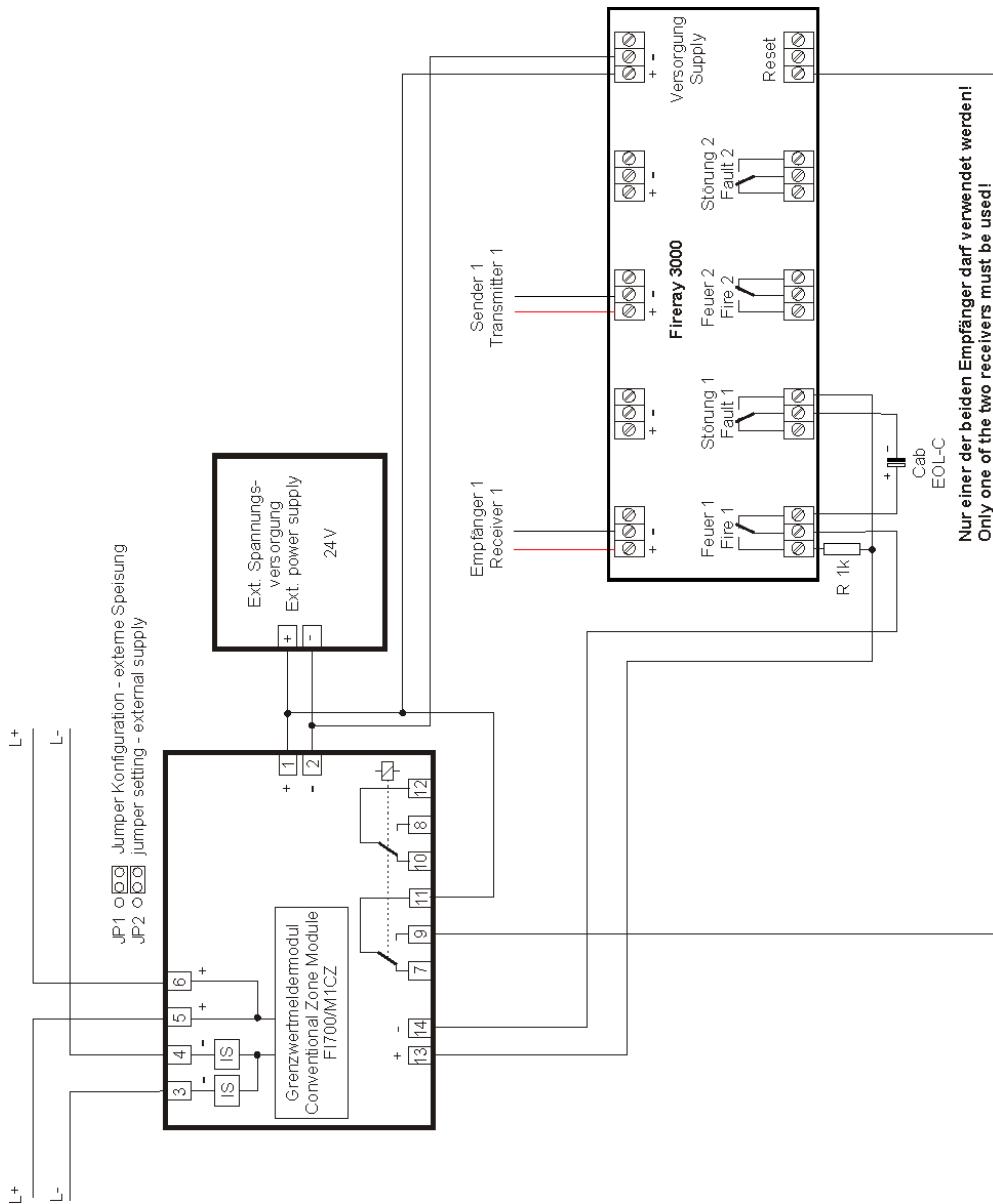
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.9 Beam Smoke Detector FR2000



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

3.8.10 Beam Smoke Detector FR3000

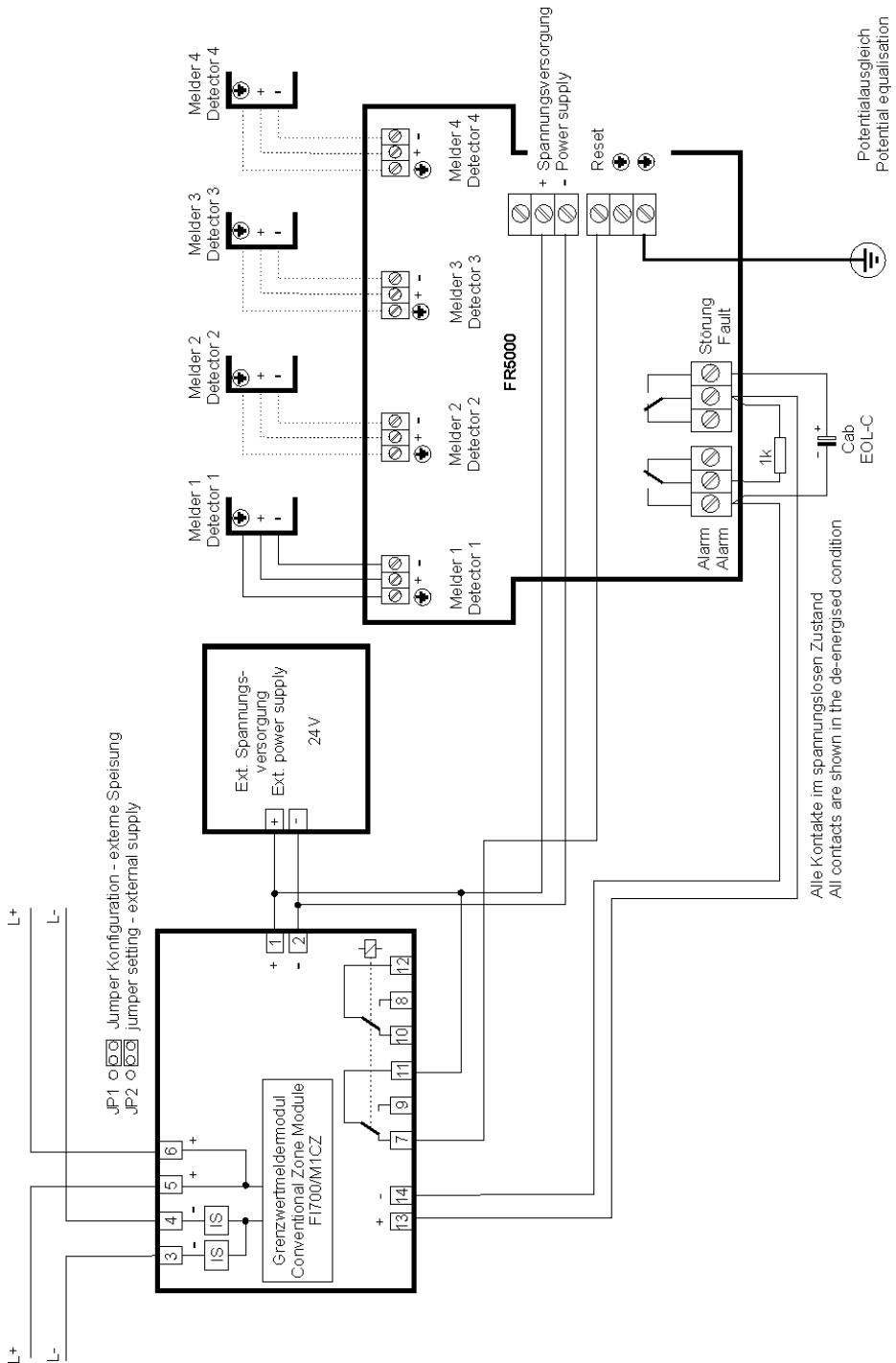


After the supply voltage is applied to the detector, the fault relay will still be de-energised for 8s. Therefore, the fire detection control panel may show a temporary fault message after enabling the conventional zone module, after panel reset or after a power on. Please note that the receivers/transmitters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

3.8.11 Beam Smoke Detector FR5000

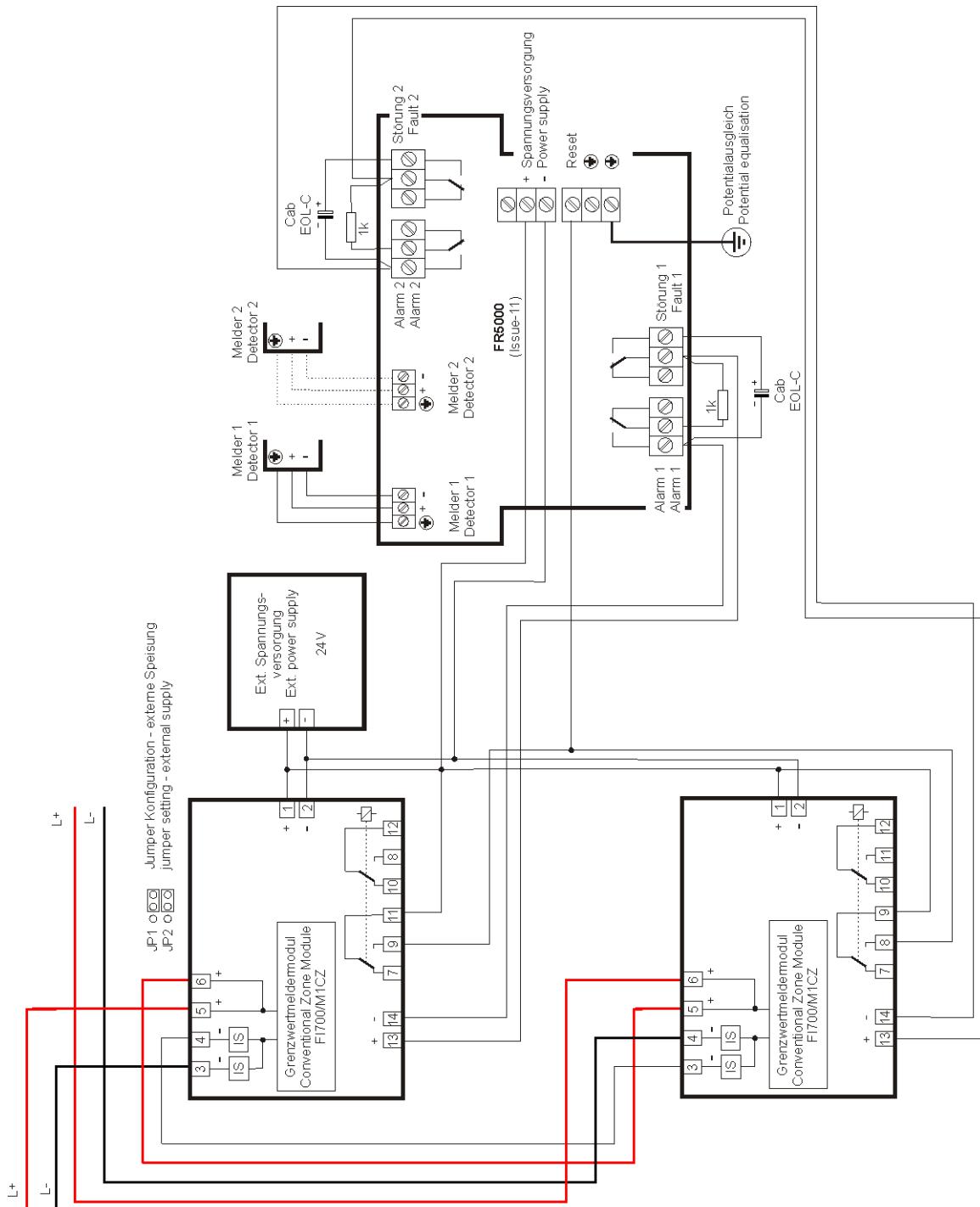


After the supply voltage is applied to the detector, the fault relay will still be de-energised for 8s. Therefore, the fire detection control panel may show a temporary fault message after enabling the conventional zone module, after panel reset or after a power on. Please note that the detectors 1 through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

3.8.12 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.

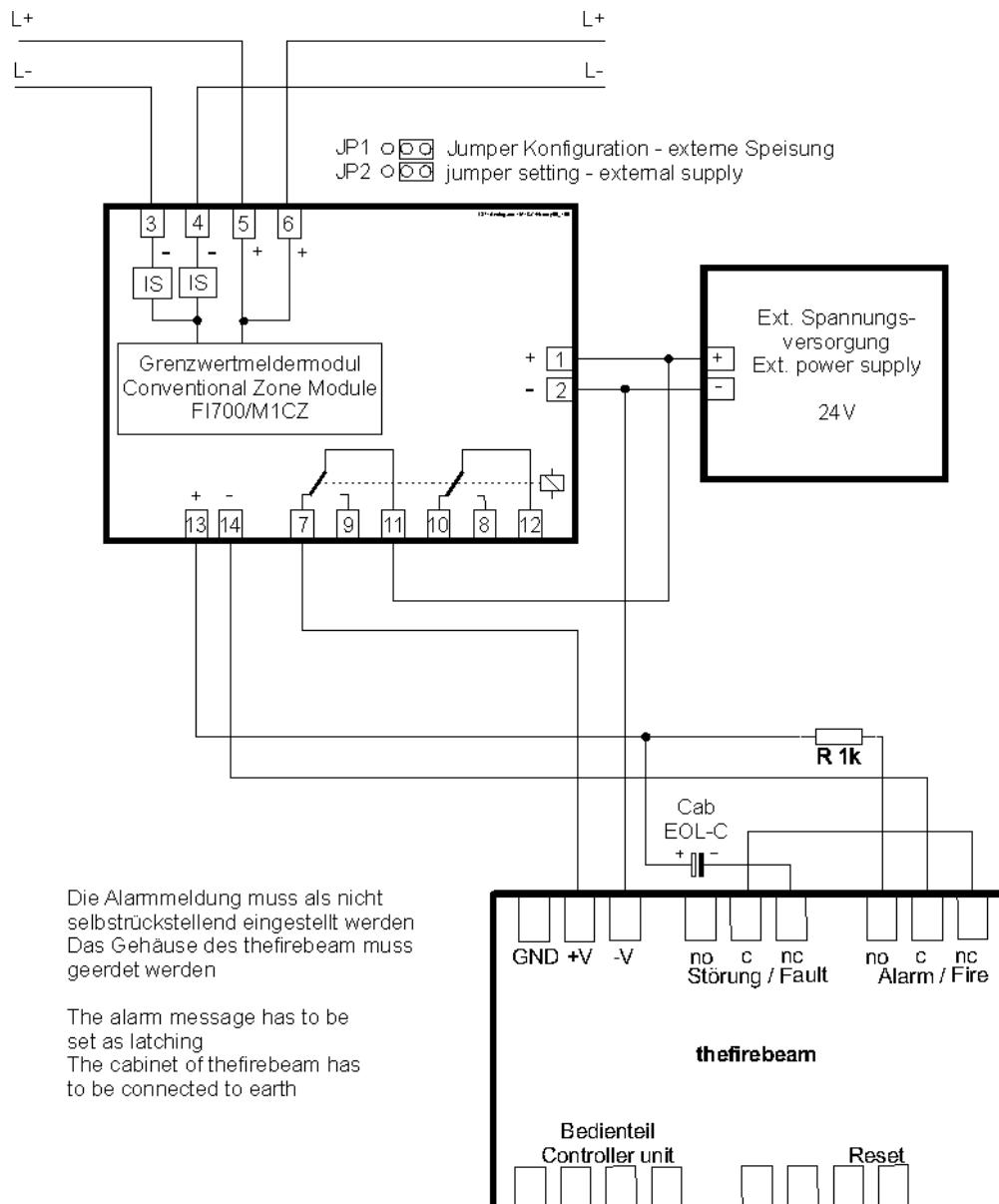


For the operation of the smoke aspiration system on Control Panels Series BC216/BC600, a firmware from calendar week 12 / 2013 or later is to be used. If an older firmware is used, the smoke aspiration system will be deactivated if one of the two modules is disabled!



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

3.8.13 Beam Smoke Detector thefirebeam plus

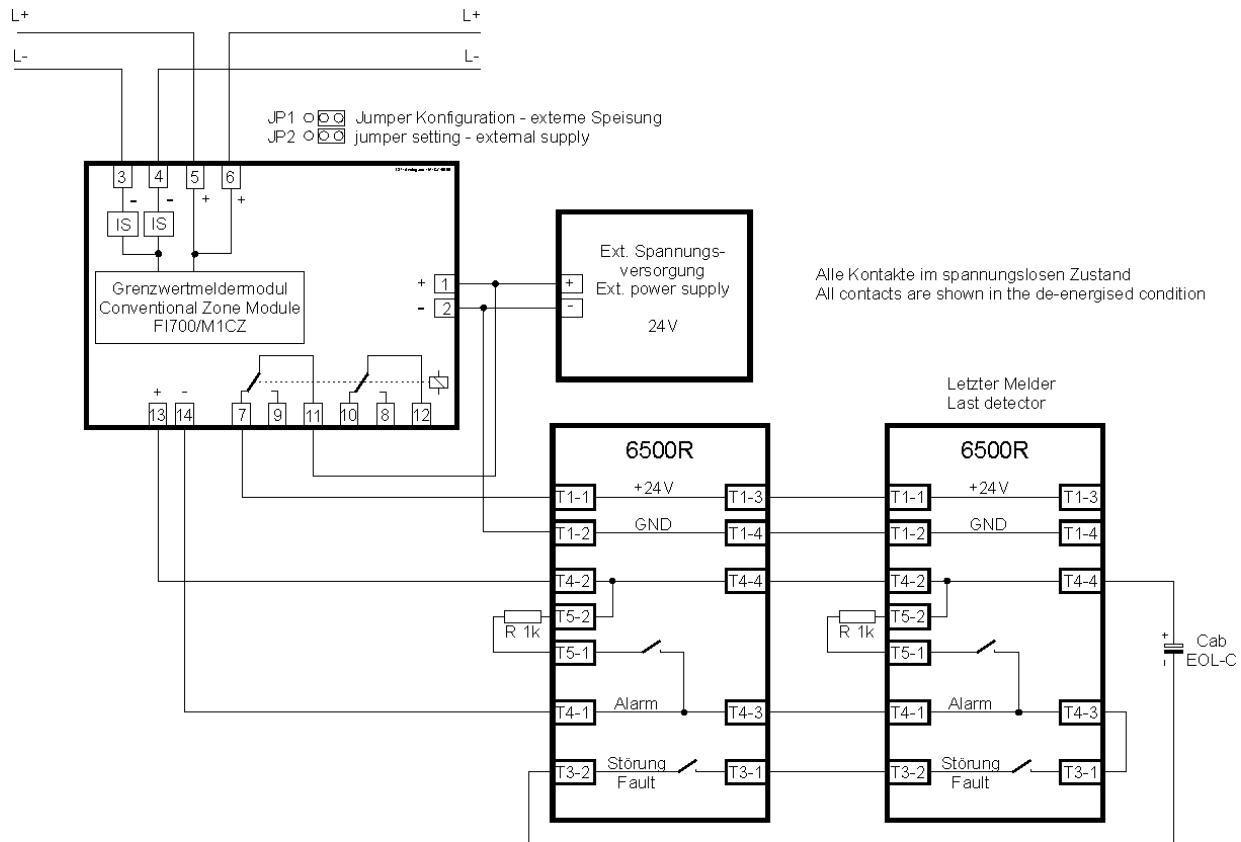


After the supply voltage is applied to the detector, the fault relay will still be de-energised for 8s. Therefore, the fire detection control panel may show a temporary fault message after enabling the conventional zone module, after panel reset or after a power on.

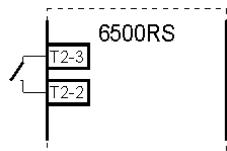


If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.14 Beam Smoke Detectors 6500R and 6500RS

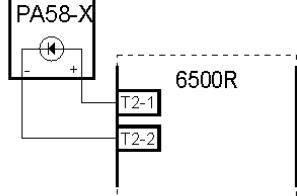


Option: Aktivierung Testfunktion
Option: activation of test function



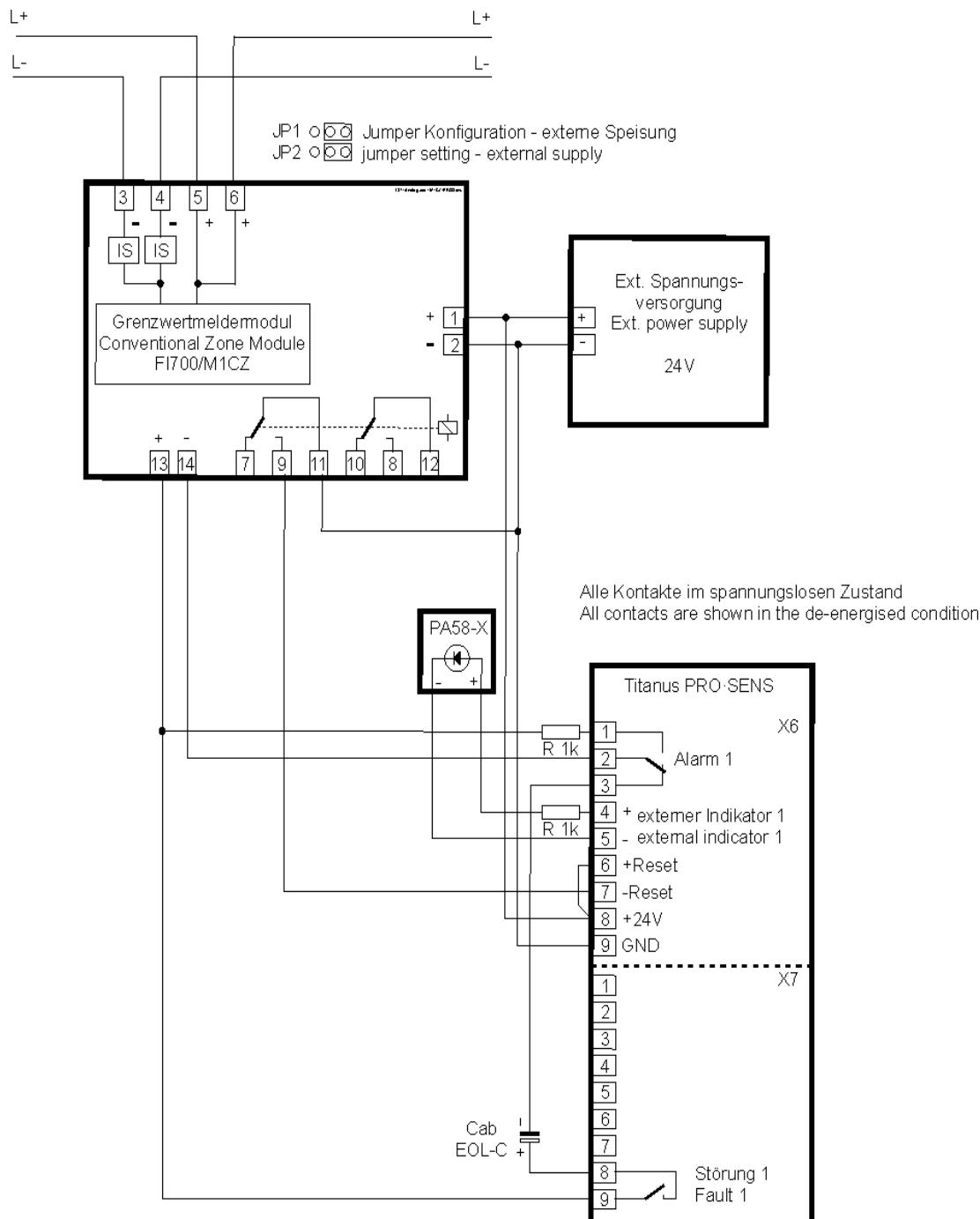
Bei Einsatz von 6500RS:
max. 2 Melder / MQZ1000-1
when using the 6500RS:
max. 2 detectors / MQZ1000-1

Option: Anschaltung Parallelindikator PA58-x
Option: connection of Remote Indicator PA58-x



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

3.8.15 Smoke Aspiration System Titanus PRO·SENS – TP-1/A with one detector module

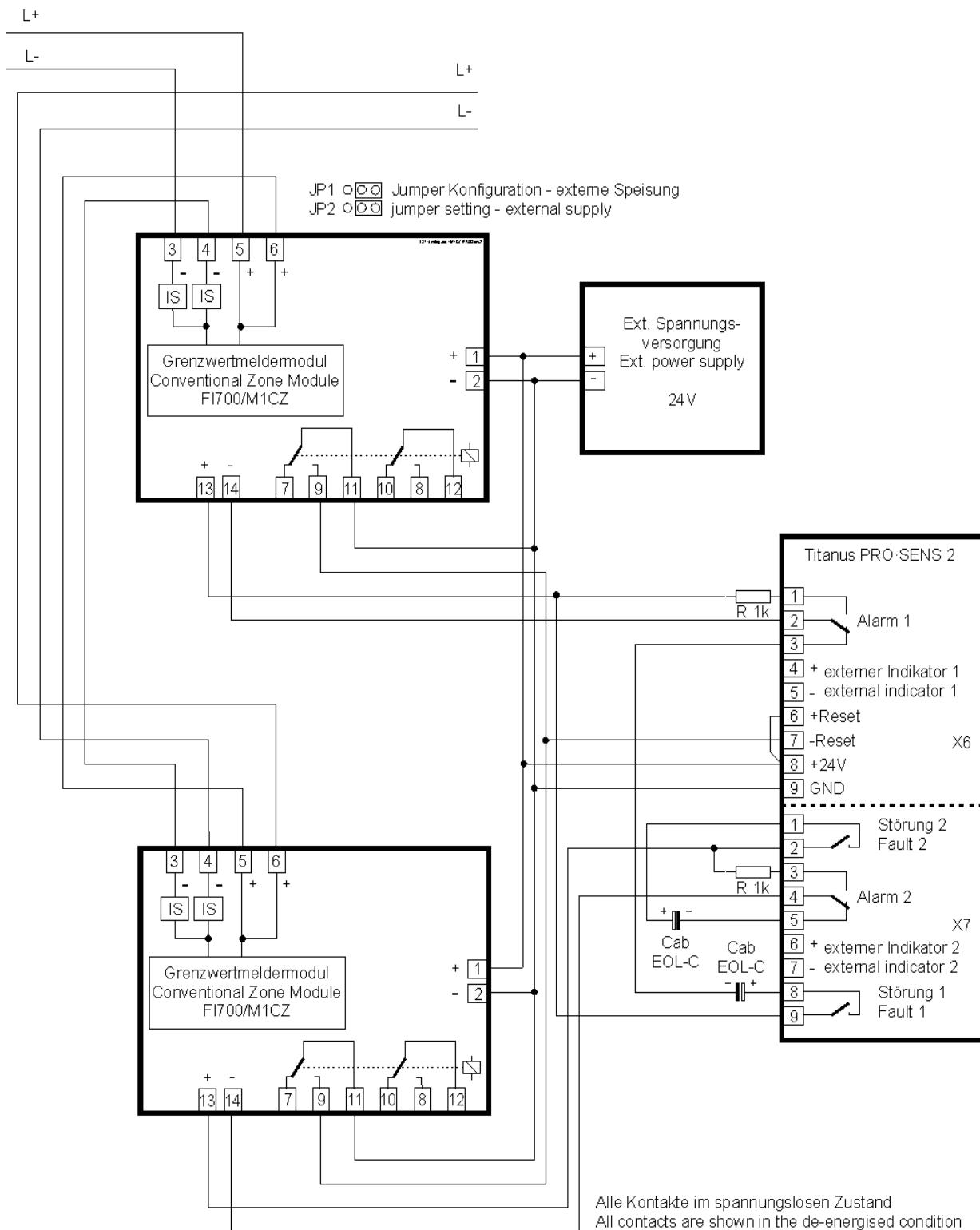


The fault contact has to be configured to operate as a NORMALLY OPEN contact.
Jumper JU2/JU3 must therefore be set to position 1-2.



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

3.8.16 Smoke Aspiration System Titanus PRO-SENS – TP1/A with 2 detector modules



The fault contact has to be configured to operate as a NORMALLY OPEN contact.

Jumper JU2/JU3 must therefore be set to position 1-2.

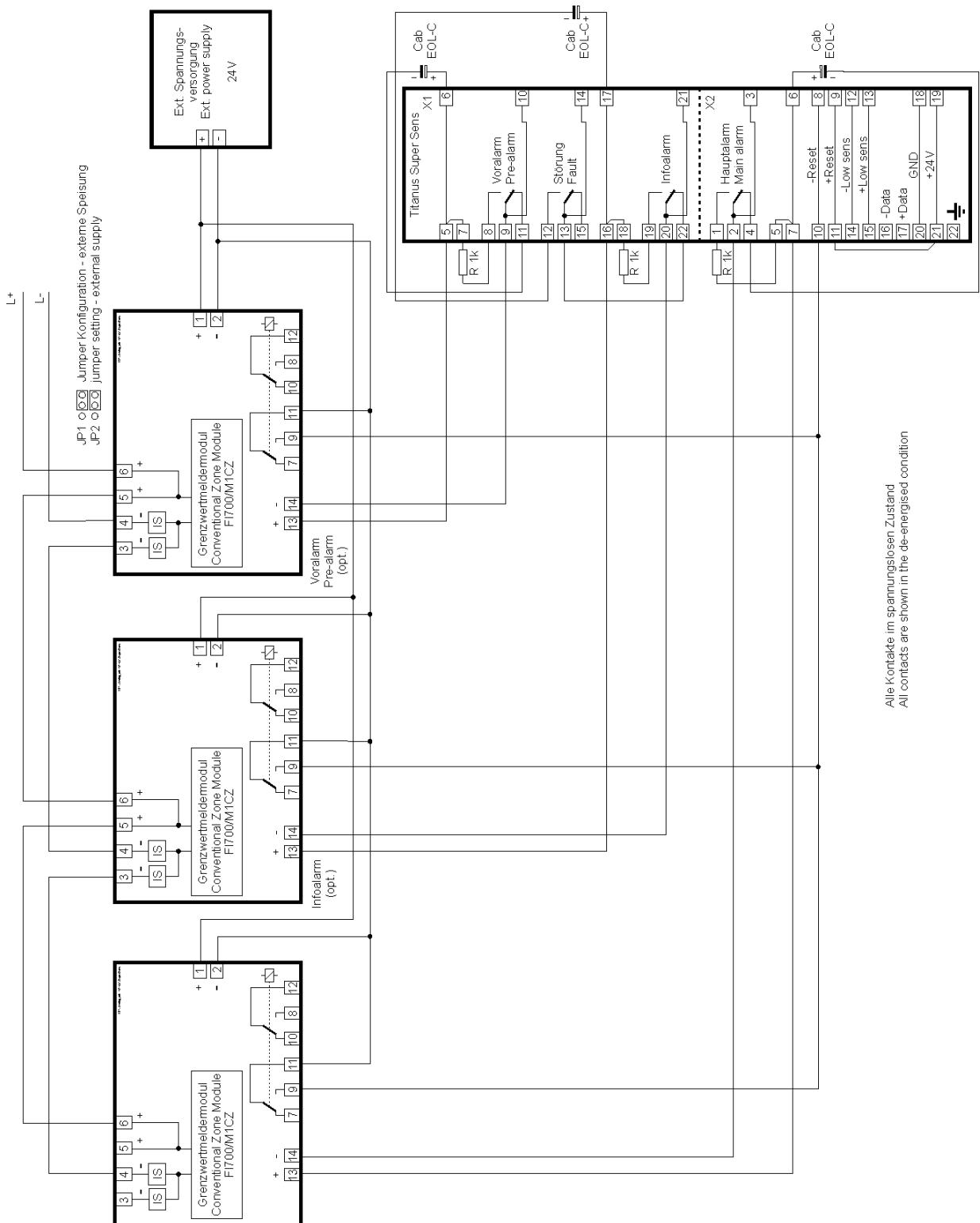


For the operation of the smoke aspiration system on Control Panels Series BC216 and BC600, a firmware from calendar week 12 / 2013 or later is to be used. If an older firmware is used, the smoke aspiration system will be deactivated if one of the two modules is disabled!



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

3.8.17 Smoke Aspiration System Titanus Super Sens - T-SS



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

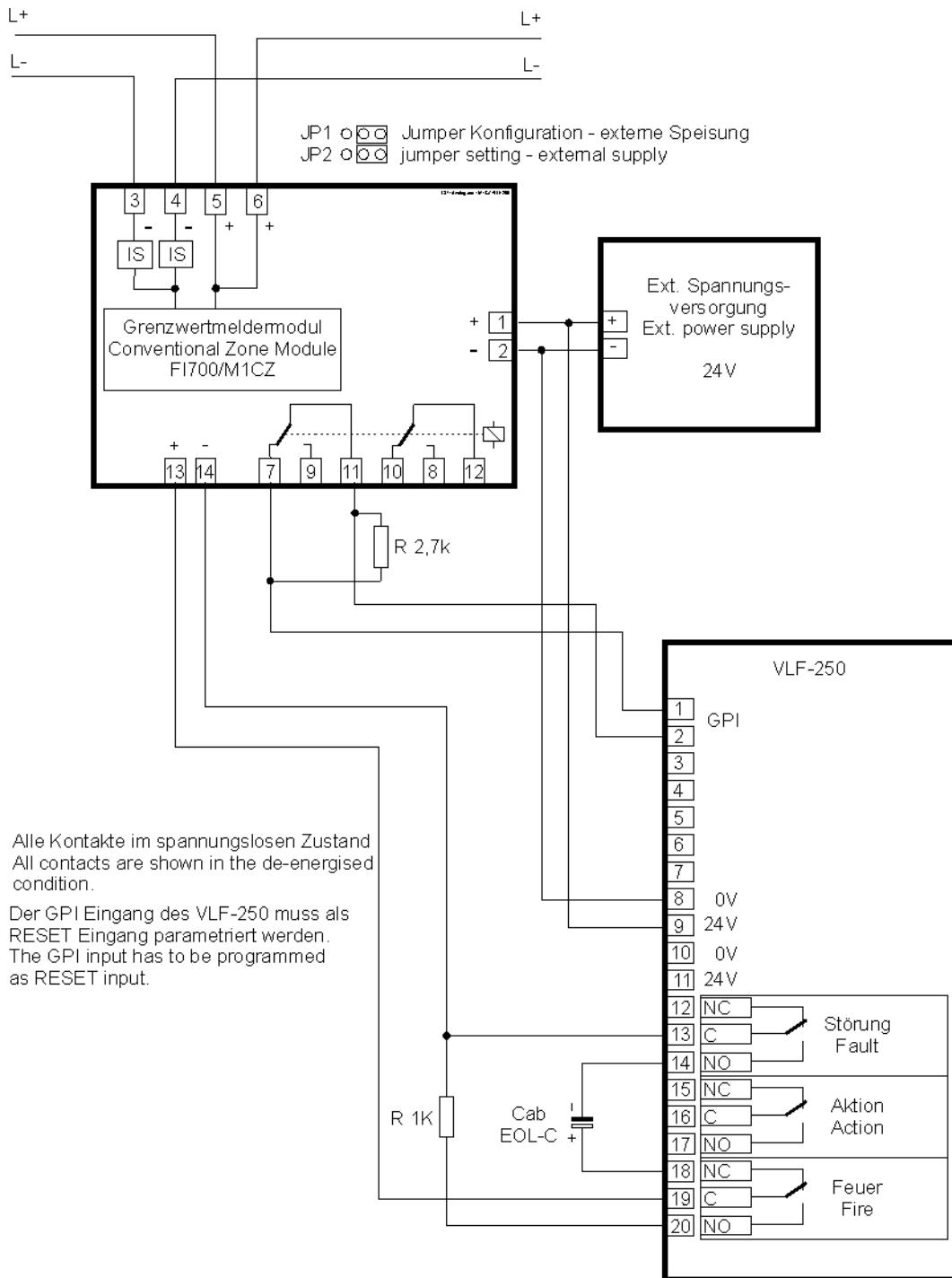


For the operation of the smoke aspiration system on Control Panels Series BC216/BC600, a firmware from calendar week 12 / 2013 or later is to be used. If an older firmware is used, the smoke aspiration system will be deactivated if one of the two modules is disabled!



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

3.8.18 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.

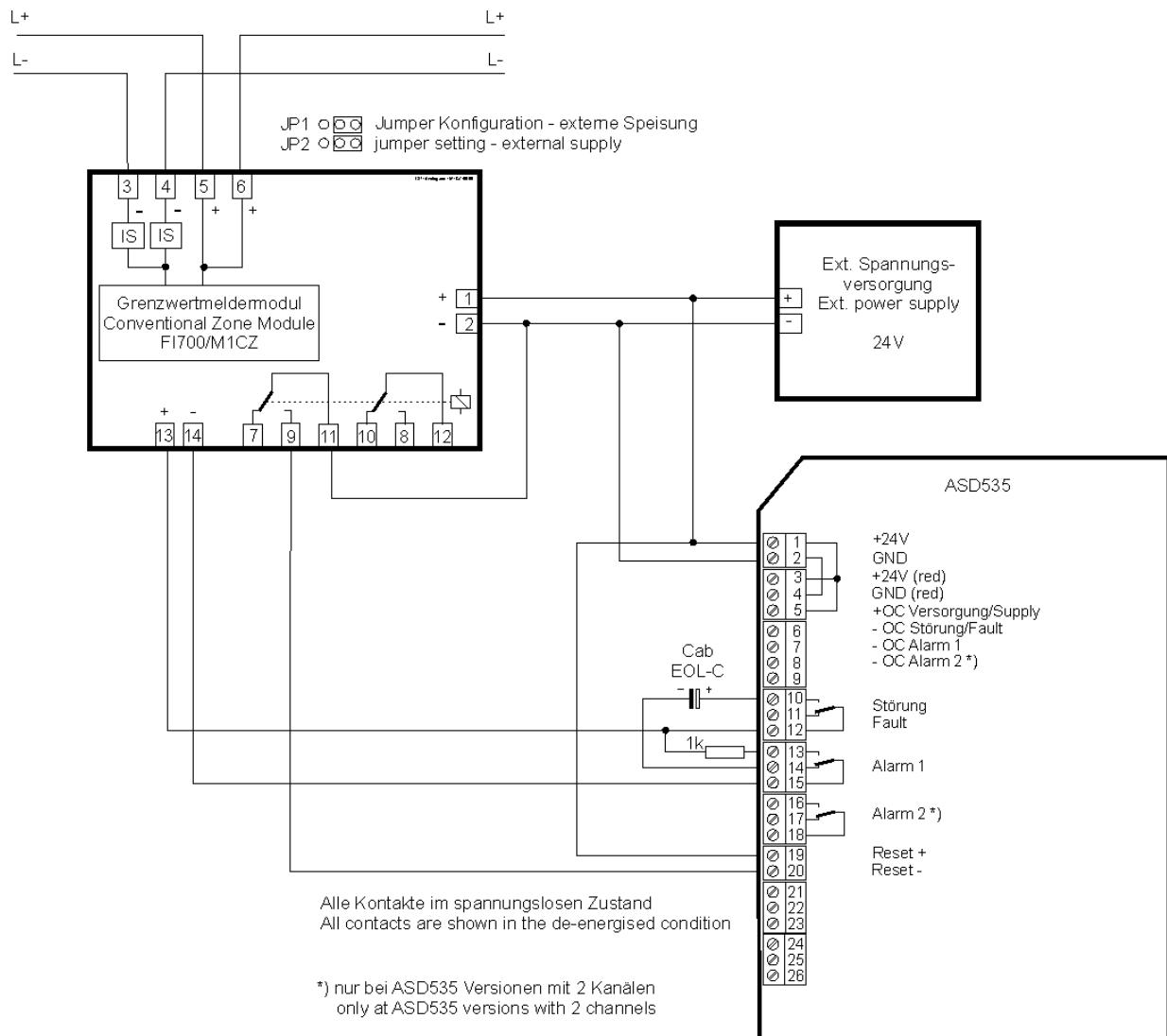


The Smoke Aspiration System Vesda VLF-500 has the same terminal configuration as the VLF-250.



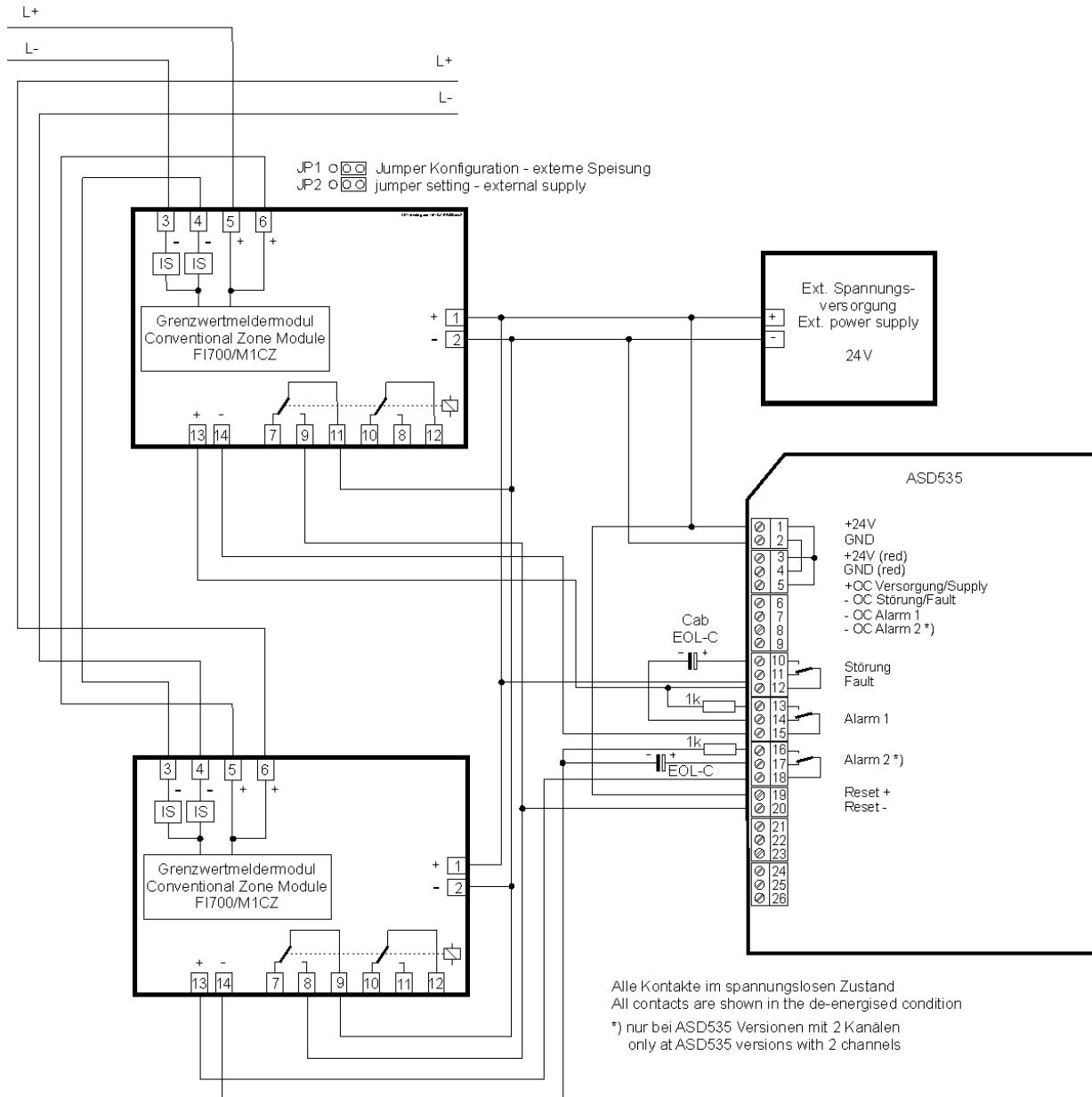
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.19 Smoke Aspiration System ASD535 with one channel



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

3.8.20 Smoke Aspiration System ASD535 with two channels

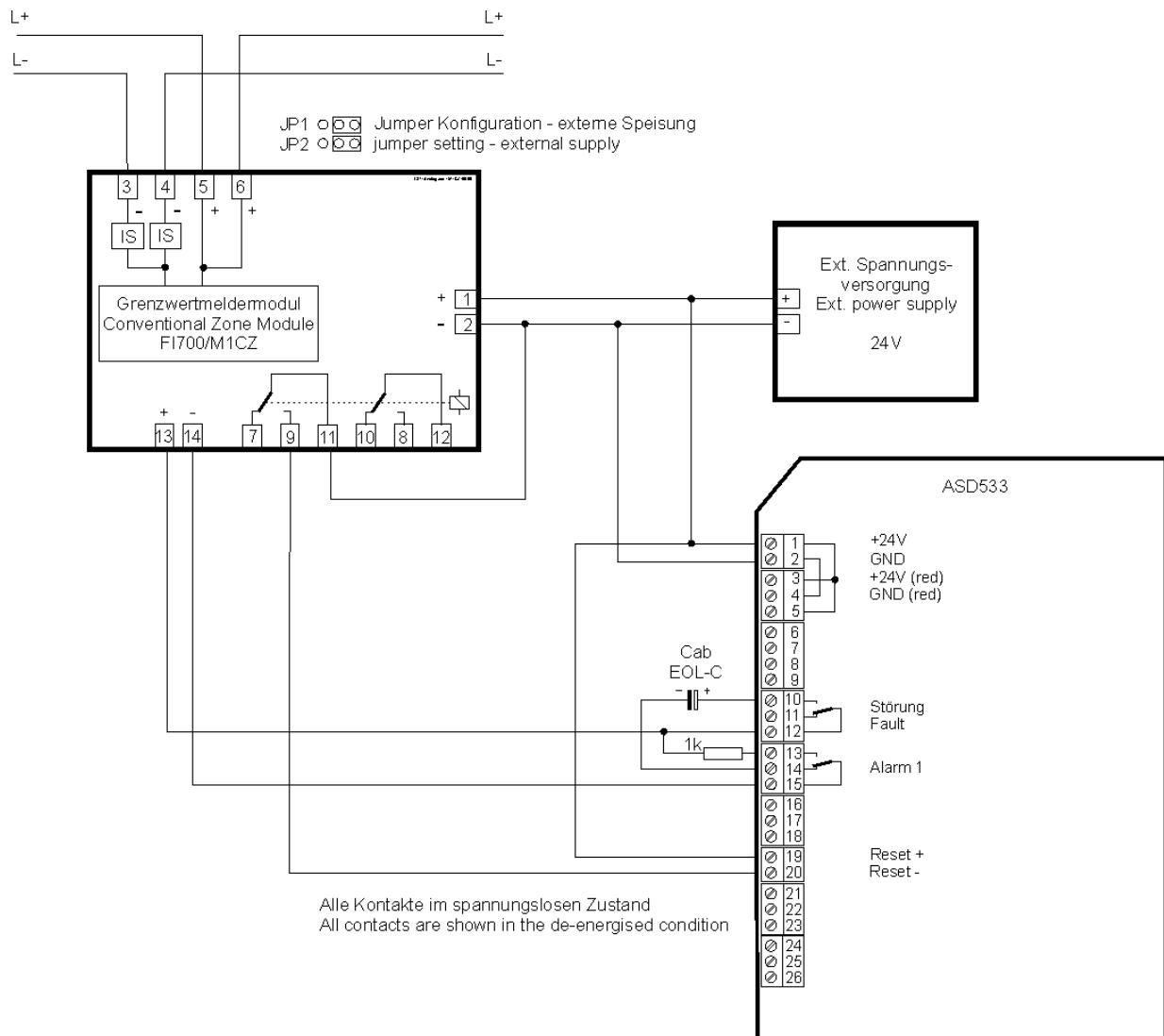


For the operation of the smoke aspiration system on Control Panels Series BC216 and BC600, a firmware from calendar week 12 / 2013 or later is to be used. If an older firmware is used, the smoke aspiration system will be deactivated if one of the two modules is disabled!



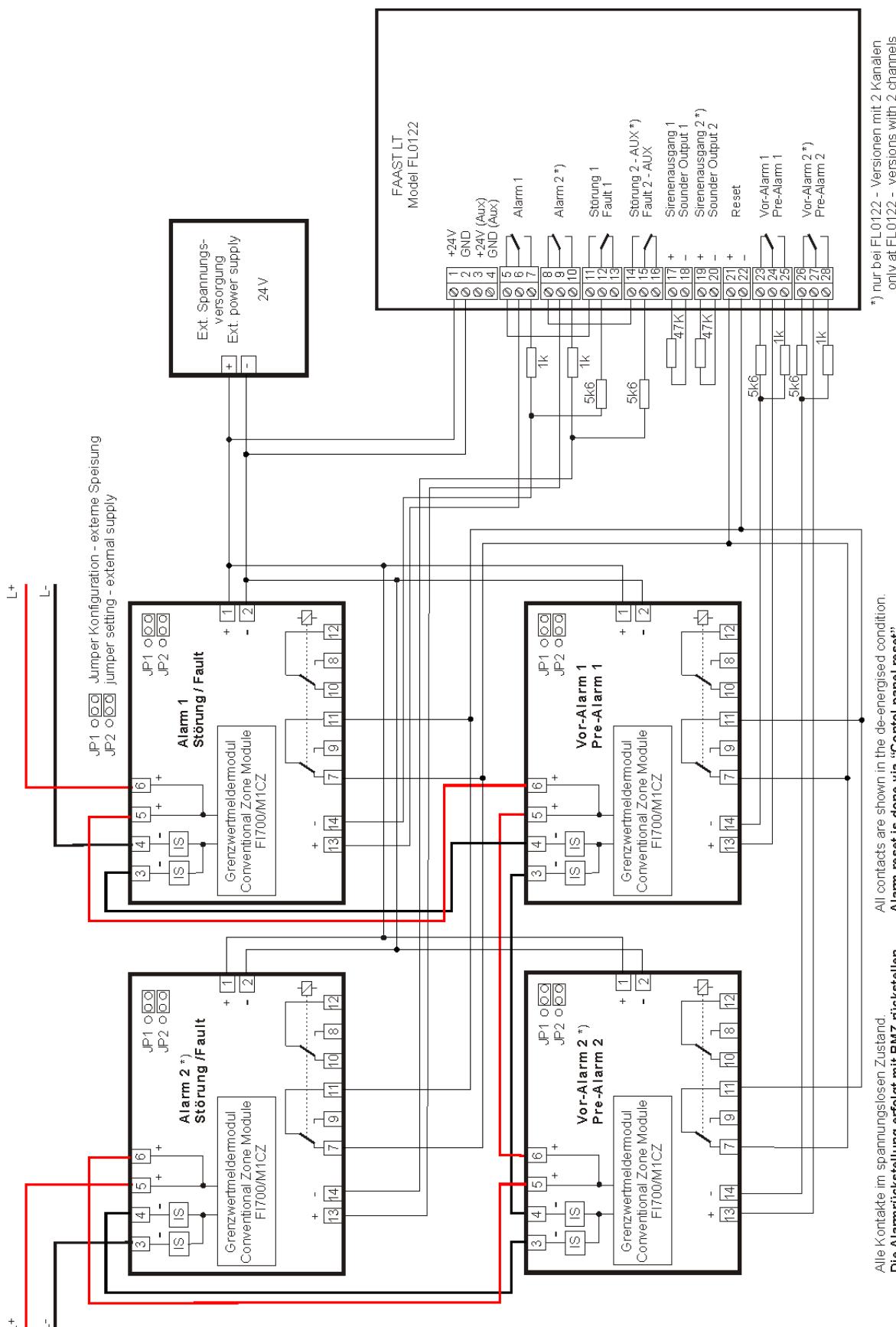
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.21 Smoke Aspiration System ASD533



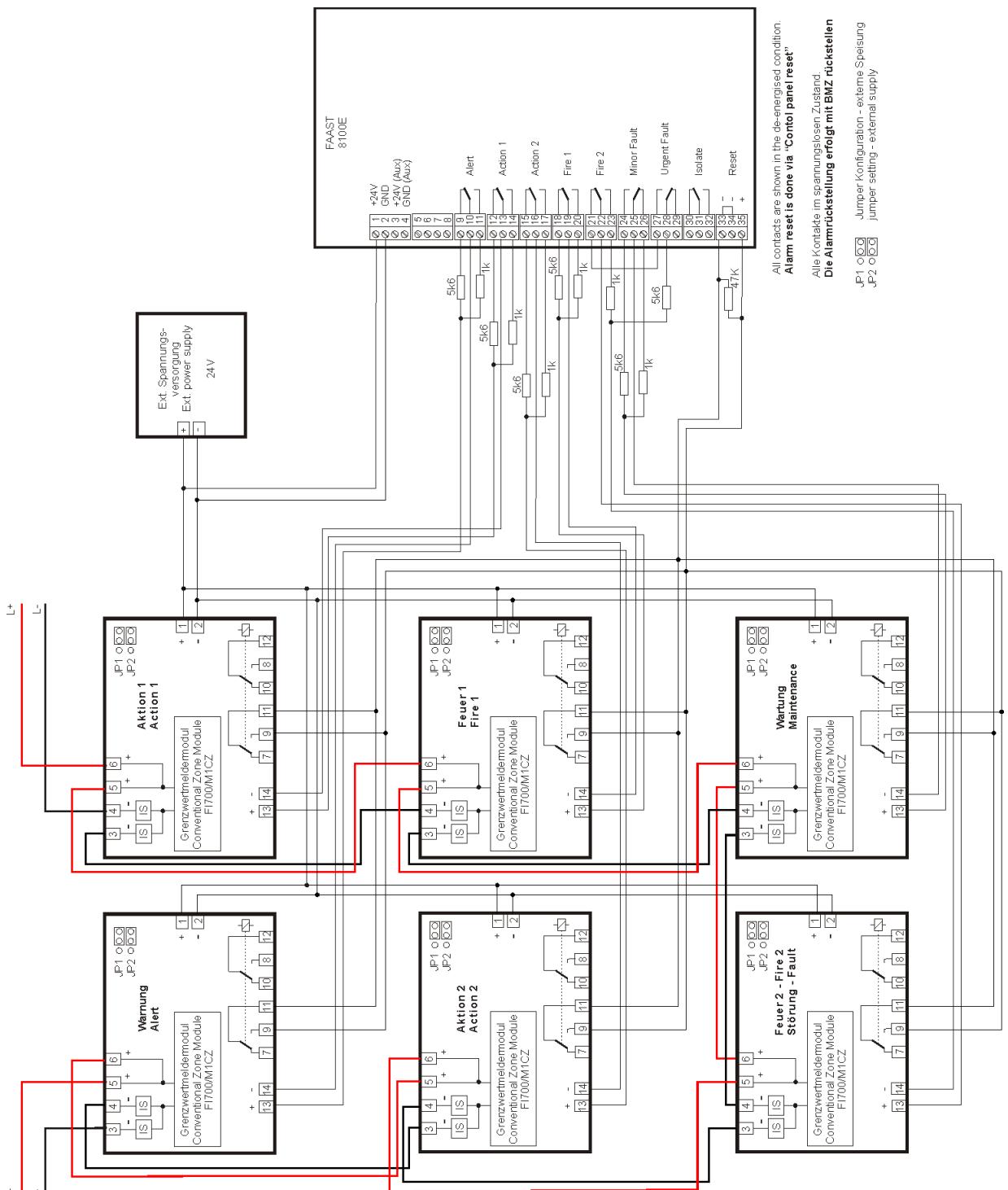
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

3.8.22 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!

3.8.23 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!

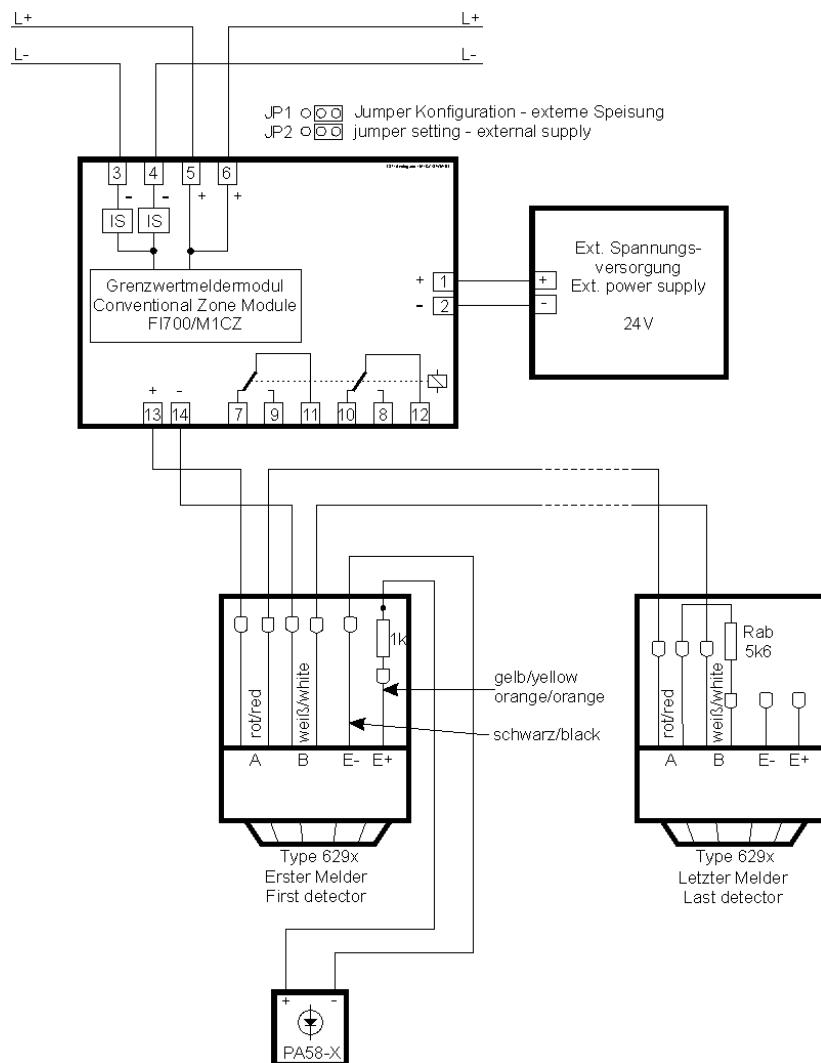
3.8.24 Thermal Detectors 6295, 6296, 6297 and 6298

3.8.24.1 Notes

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

Type	EN54-5 Class
6295	57°C – A2S
6296	72°C – B2
6297	87°C – CS
6298	117°C – ES

3.8.24.2 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.

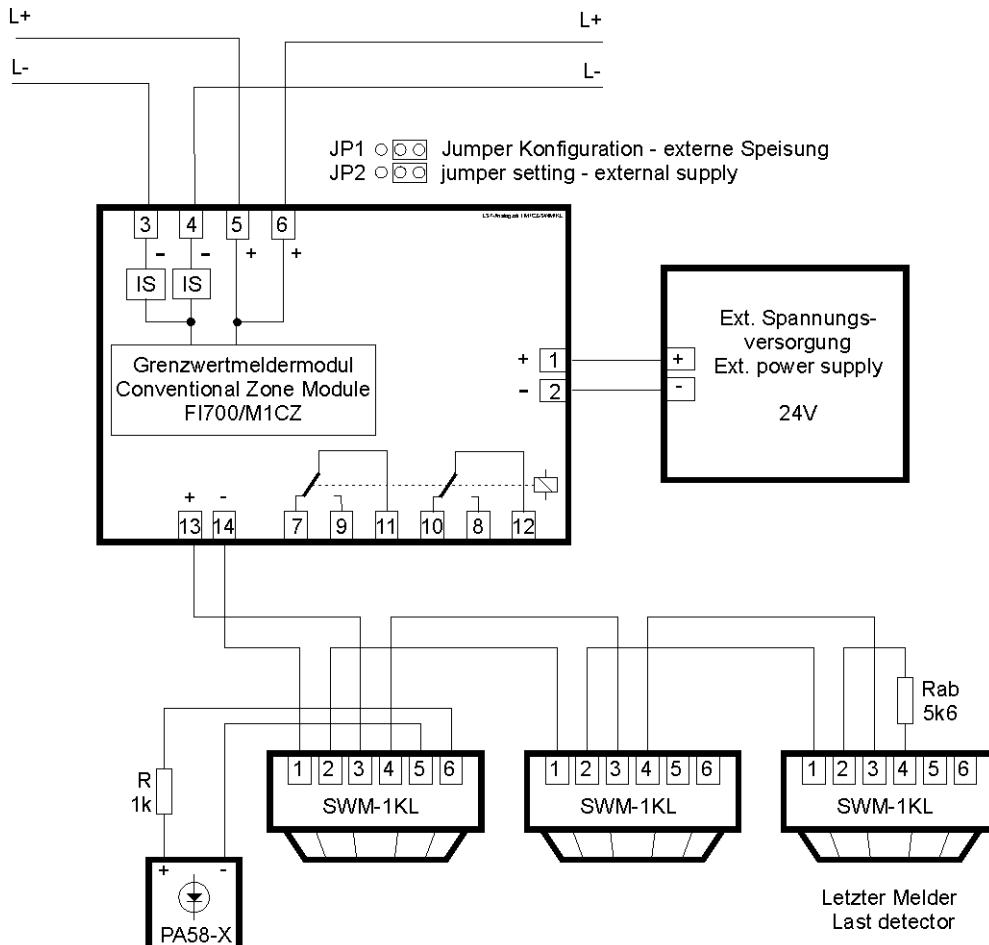


Make sure that the temperature resistance of the connection cable is sufficient.

3.8.25 Thermal Max Detector SWM-1KL

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.



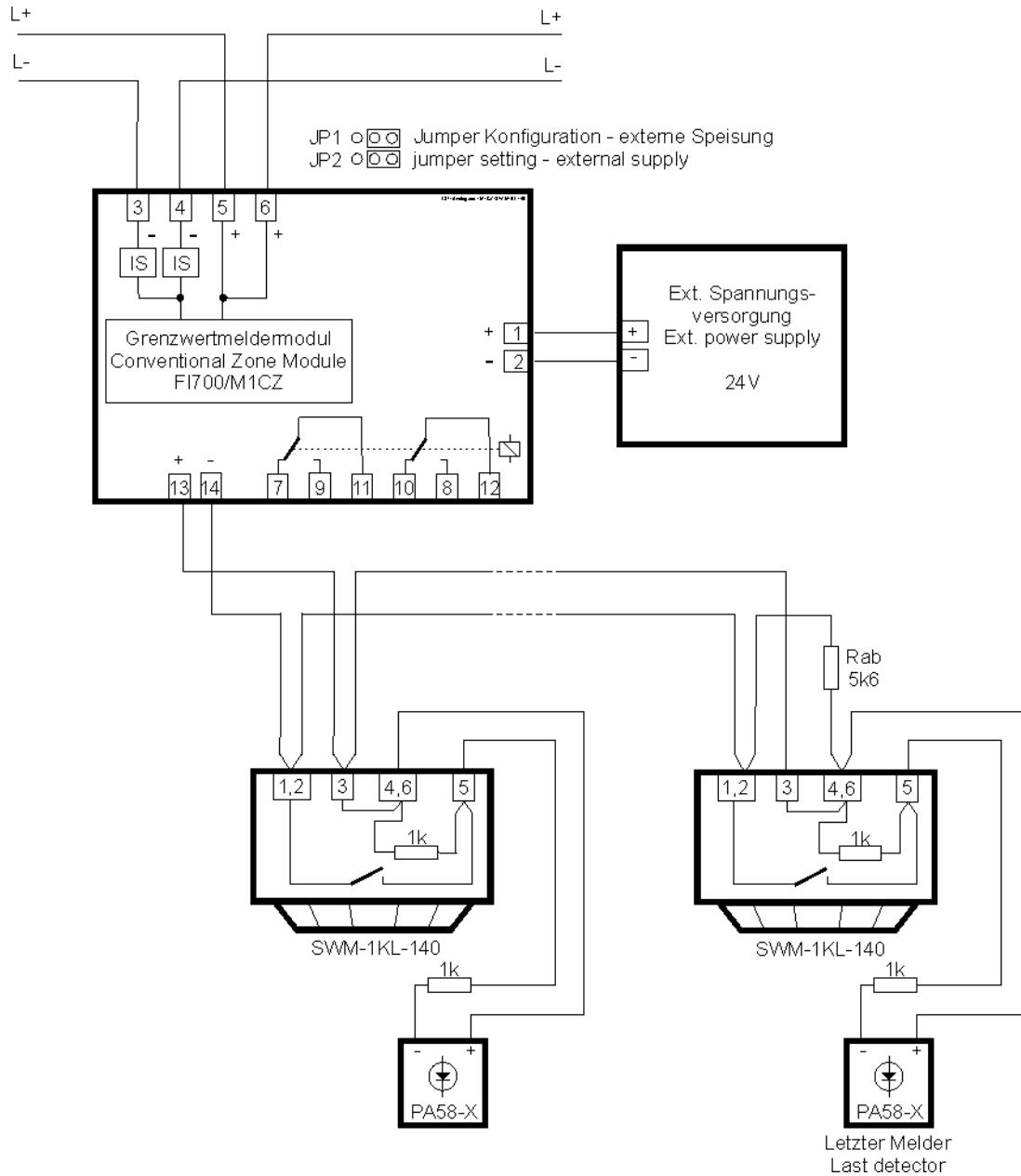
If the conventional zone module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.



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



3.8.26 Thermal Max Detector SWM-1KL-140



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.

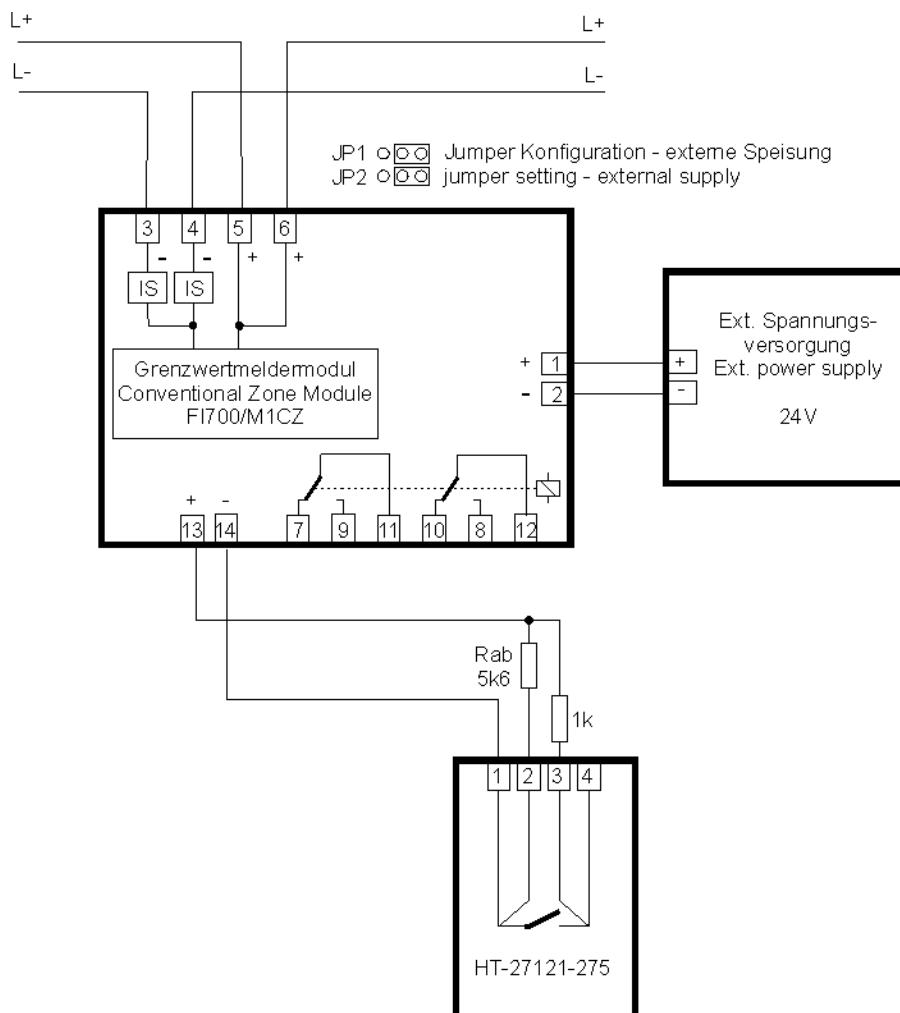
3.8.27 Thermal Max Detector HT-27121-275

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.

3.9 Connection of contact detectors with a monitor module

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

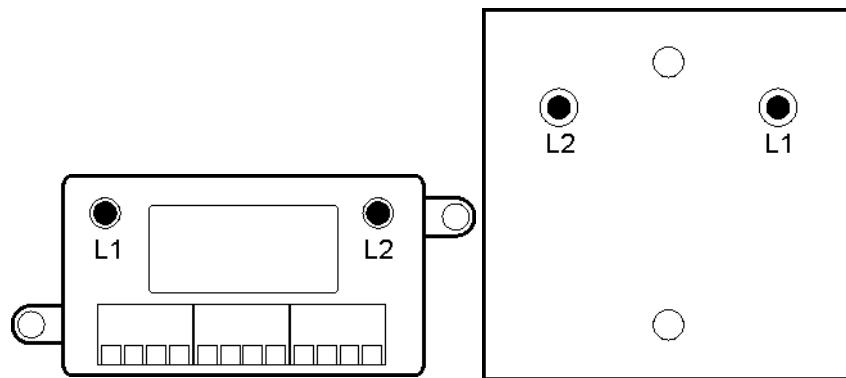
Detailed information can be found on page 79 in Chapter 3.3: „Address programming of loop elements“.

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

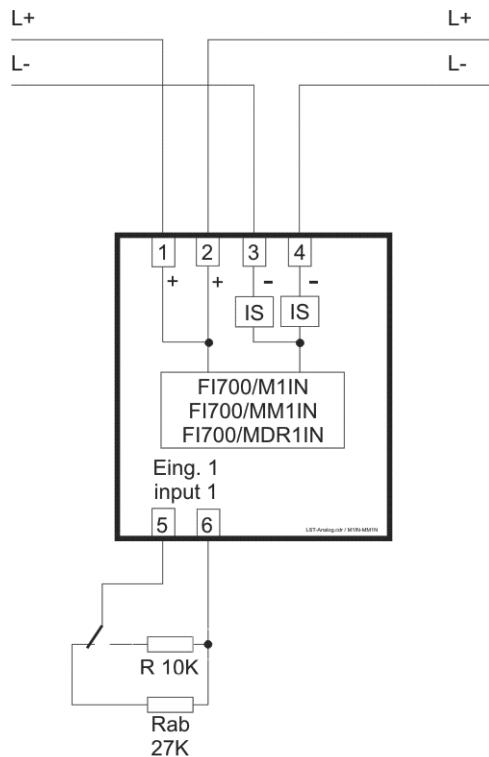
These modules have one supervised input, an integrated isolator and they use one address on the loop.

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

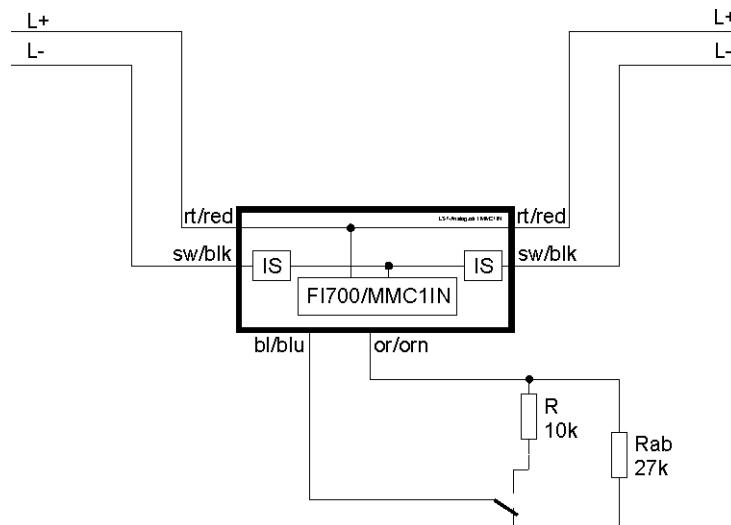


3.9.3 Monitor Module FI700/MMC1IN

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 supervised devices (fire controls, acoustical alarming devices, remote indicators, ...).



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

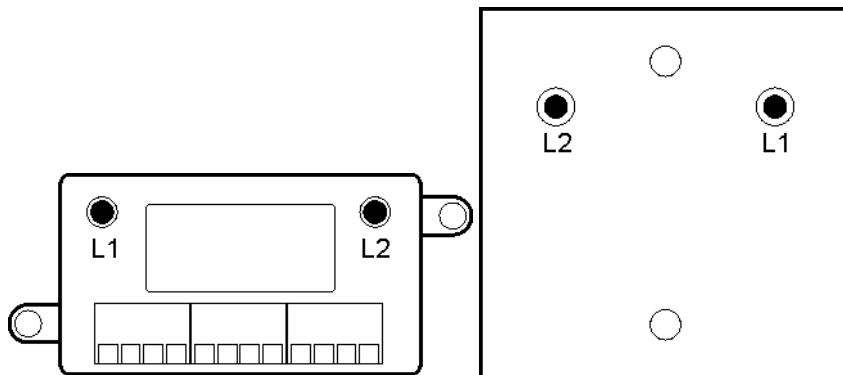


If the module is powered by an external power supply, the country-specific regulations concerning emergency power supply have to be observed.

The output of the modules is supervised and a bi-colour LED indicates the condition of the output.

3.10.1.1 Function of the LED

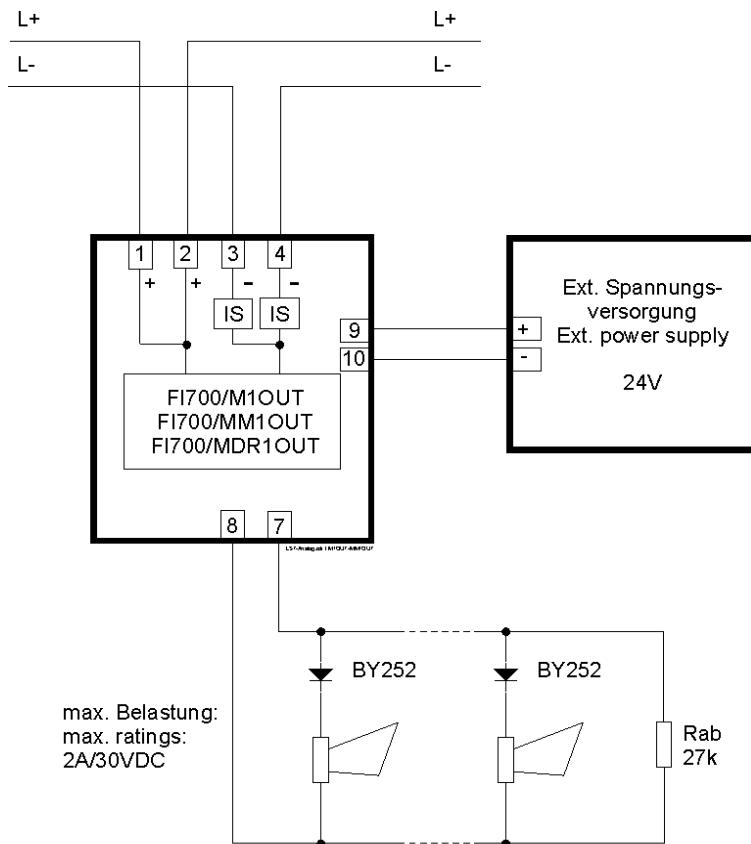
L2 indicates the condition of the output. It illuminates GREEN in case of activation and illuminates YELLOW in the event of a fault (monitored output).



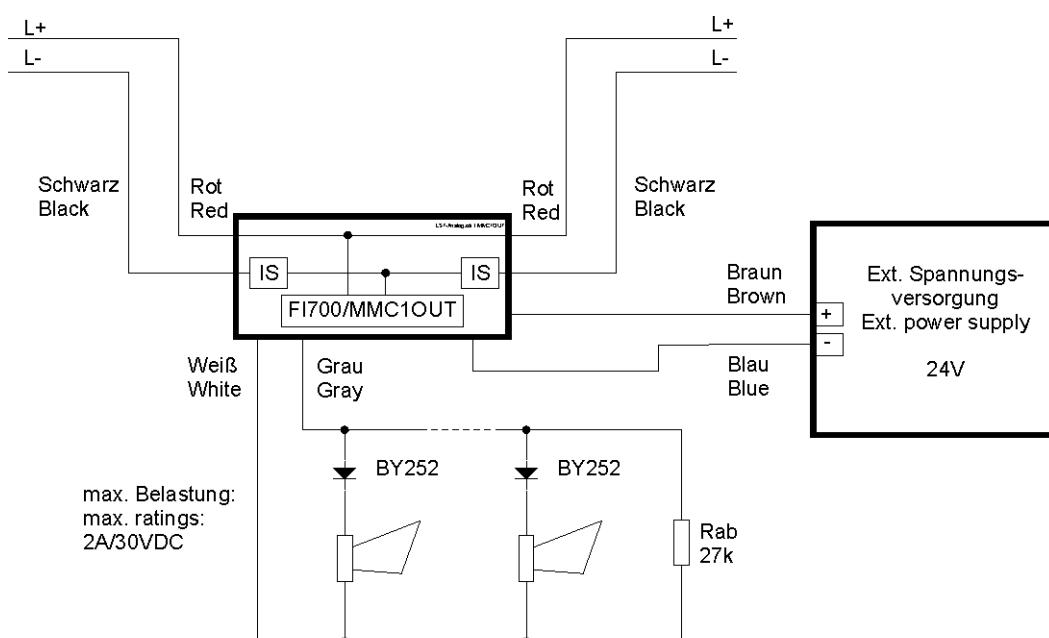
3.10.1.2 Address setting

Detailed information can be found on page 79 in Chapter 3.3: „Address programming of loop elements“.

3.10.1.3 Connection of sirens with FI700/M1OUT, FI700/MM1OUT, FI700/MDR1OUT

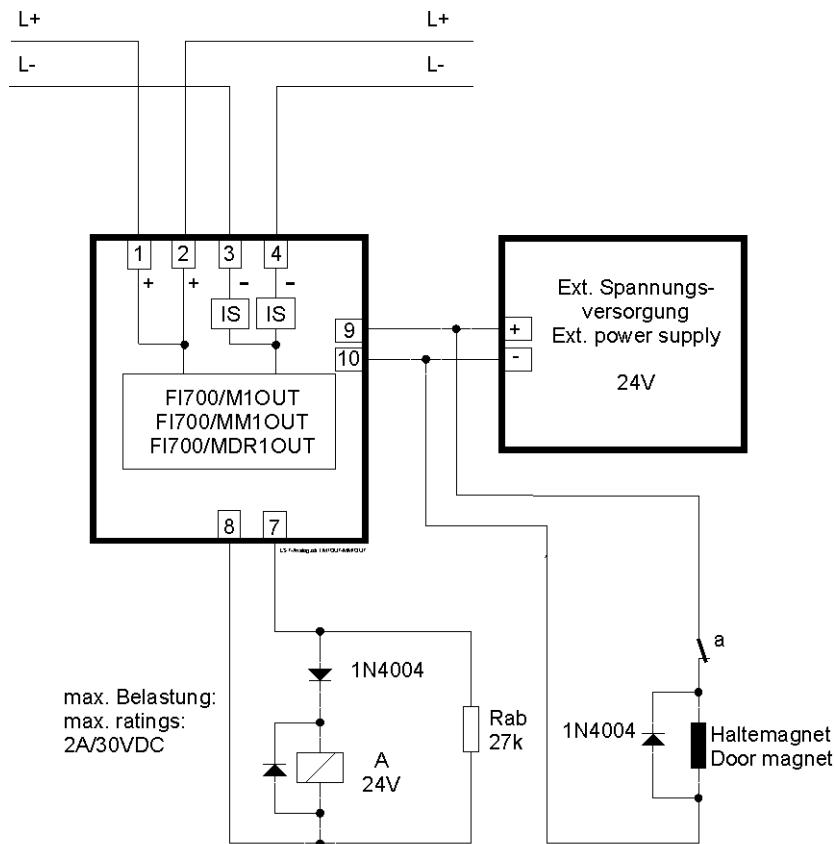


3.10.1.4 Connection of sirens with FI700/MMC1OUT



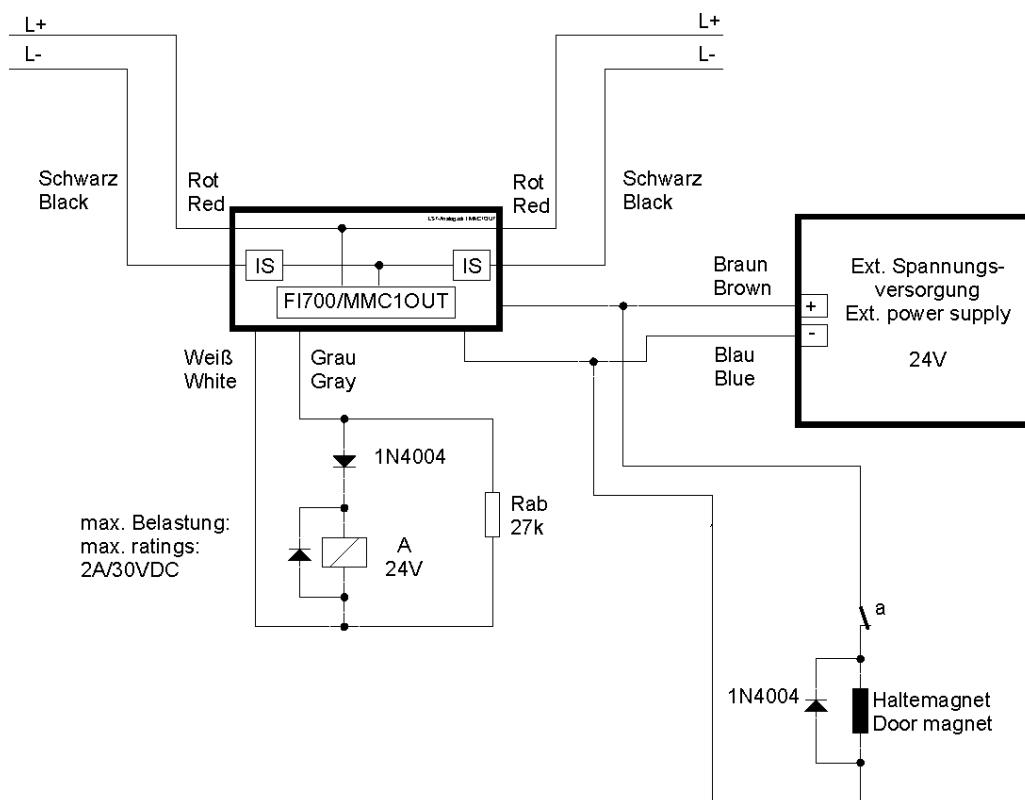
3.10.1.5 Connection of door magnets with FI700/M1OUT, FI700/MM1OUT, FI700/MDR1OUT

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.



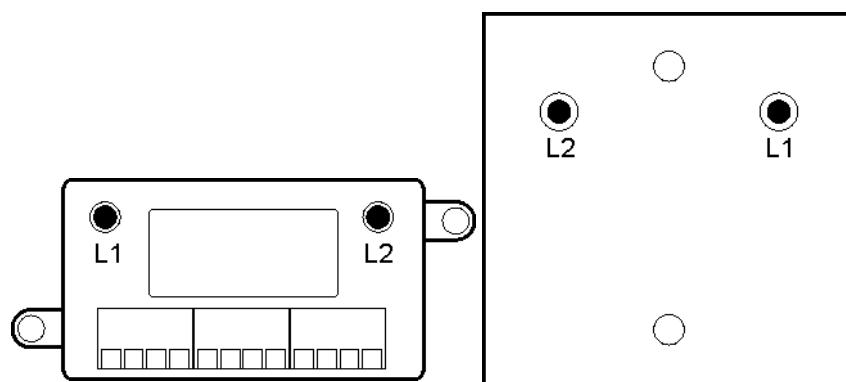
3.10.2 Control modules with relay output

3.10.2.1 Address setting

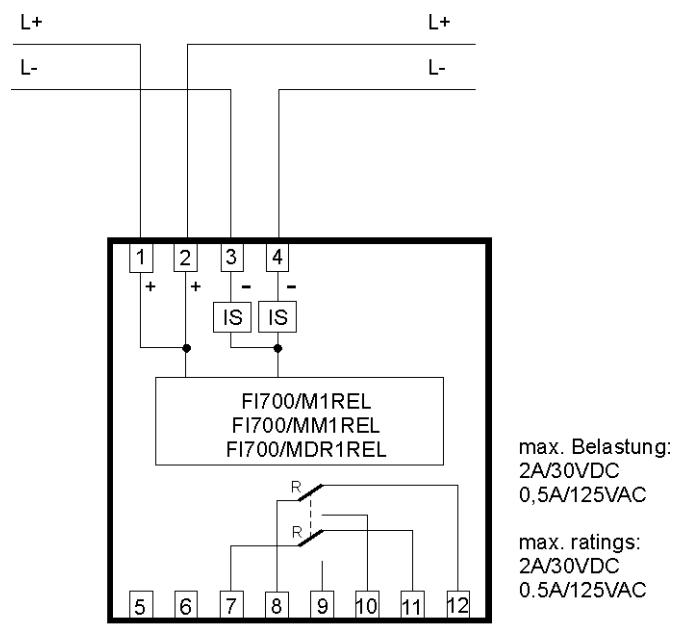
Detailed information can be found on page 79 in Chapter 3.3: „Address programming of loop elements“.

3.10.2.2 Function of the LED

L2 indicates the condition of the output. It illuminates GREEN in case of activation.

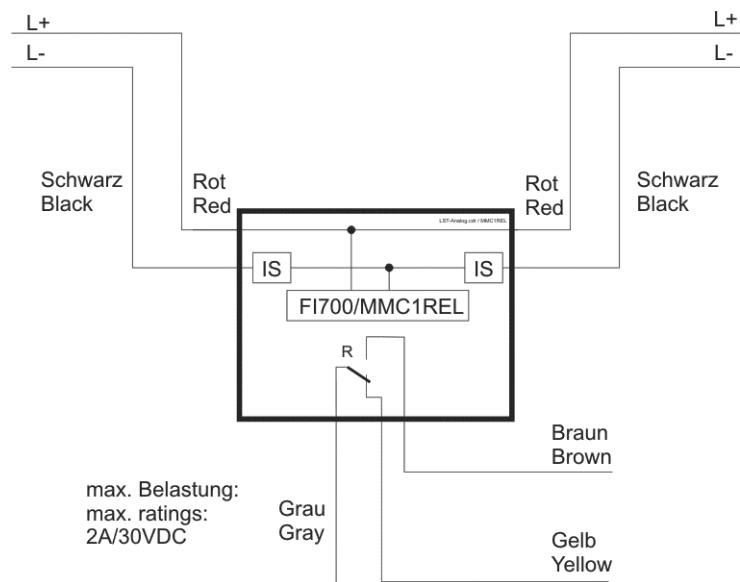


3.10.2.3 Connection of Control Modules FI700/M1REL, FI700/MM1REL, FI700/MDR1REL



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 79 in Chapter 3.3: „Address programming of loop elements“. The input and the output occupy a separate address.

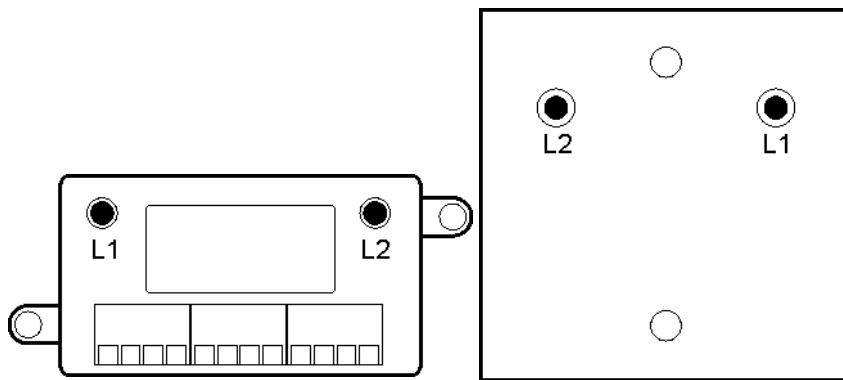


The preset address refers to the input. The output occupies the consecutive address.
Input= X; Output = X+1.

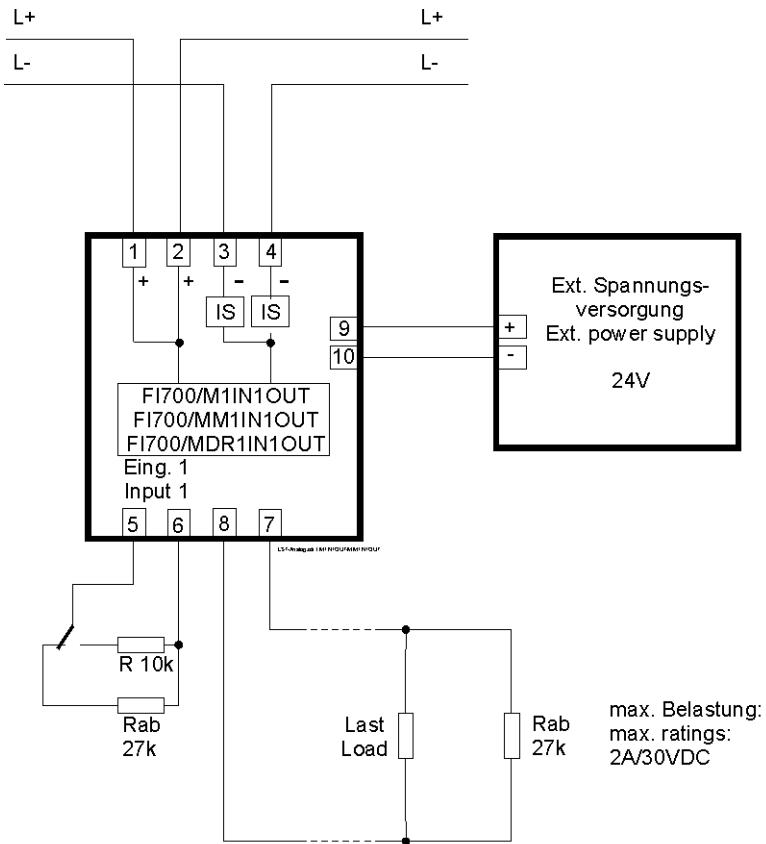
3.11.1.2 Function of the LED

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

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 79 in Chapter 3.3: „Address programming of loop elements“. The input and the output occupy separate addresses. Both relay contacts will be activated simultaneously.

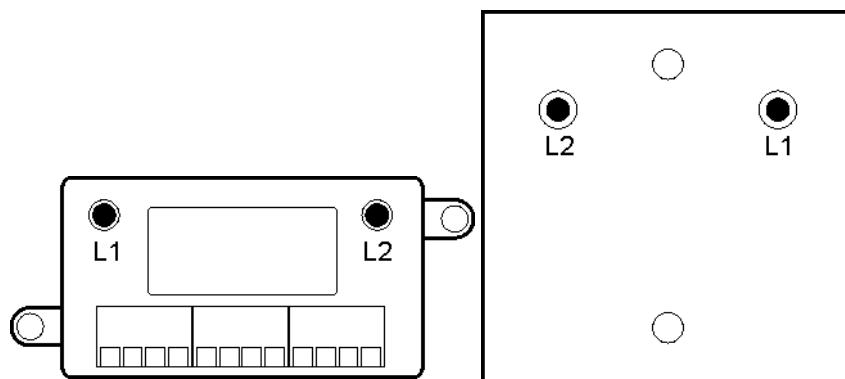


The preset address refers to the input. The output occupies the consecutive address.
Input= X; Output = X+1.

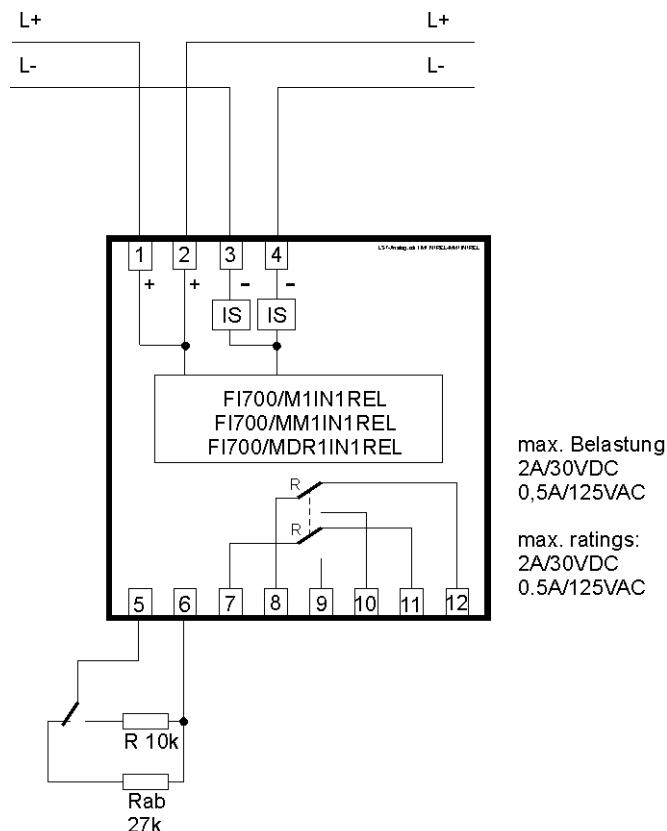
3.11.2.2 Function of the LED

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

L2 indicates the condition of the output. It illuminates GREEN in case of activation.

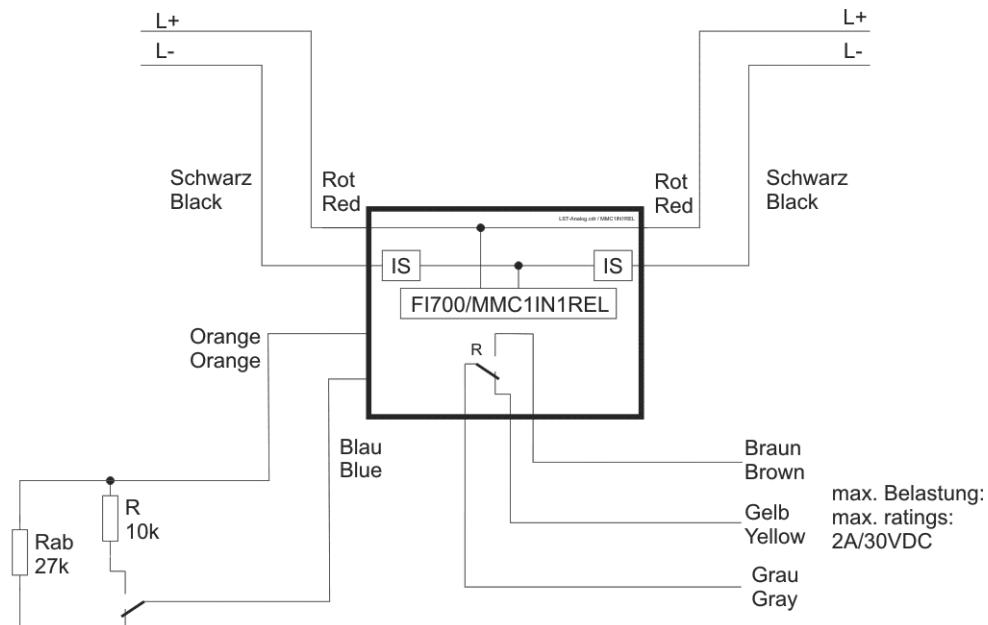


3.11.2.3 Connection of Combi Modules FI700/M1IN1REL, FI700/MM1IN1REL, FI700/MDR1IN1REL



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 79 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.

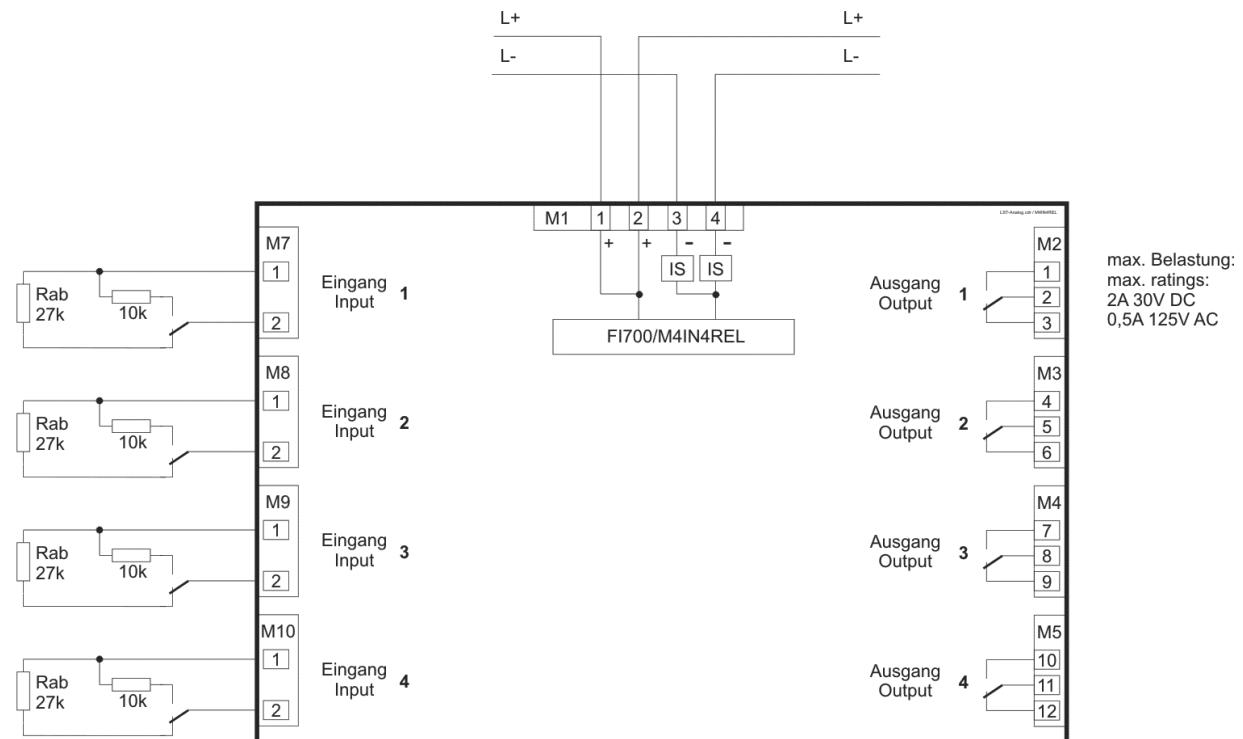
For the input:

- ◆ In the idle condition of all inputs the LED will blink in green.
- ◆ The LED will blink in red if one input is active.
- ◆ In case of a fault of an input the LED will be continuously illuminated in yellow.

For the output:

- ◆ 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 79 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.

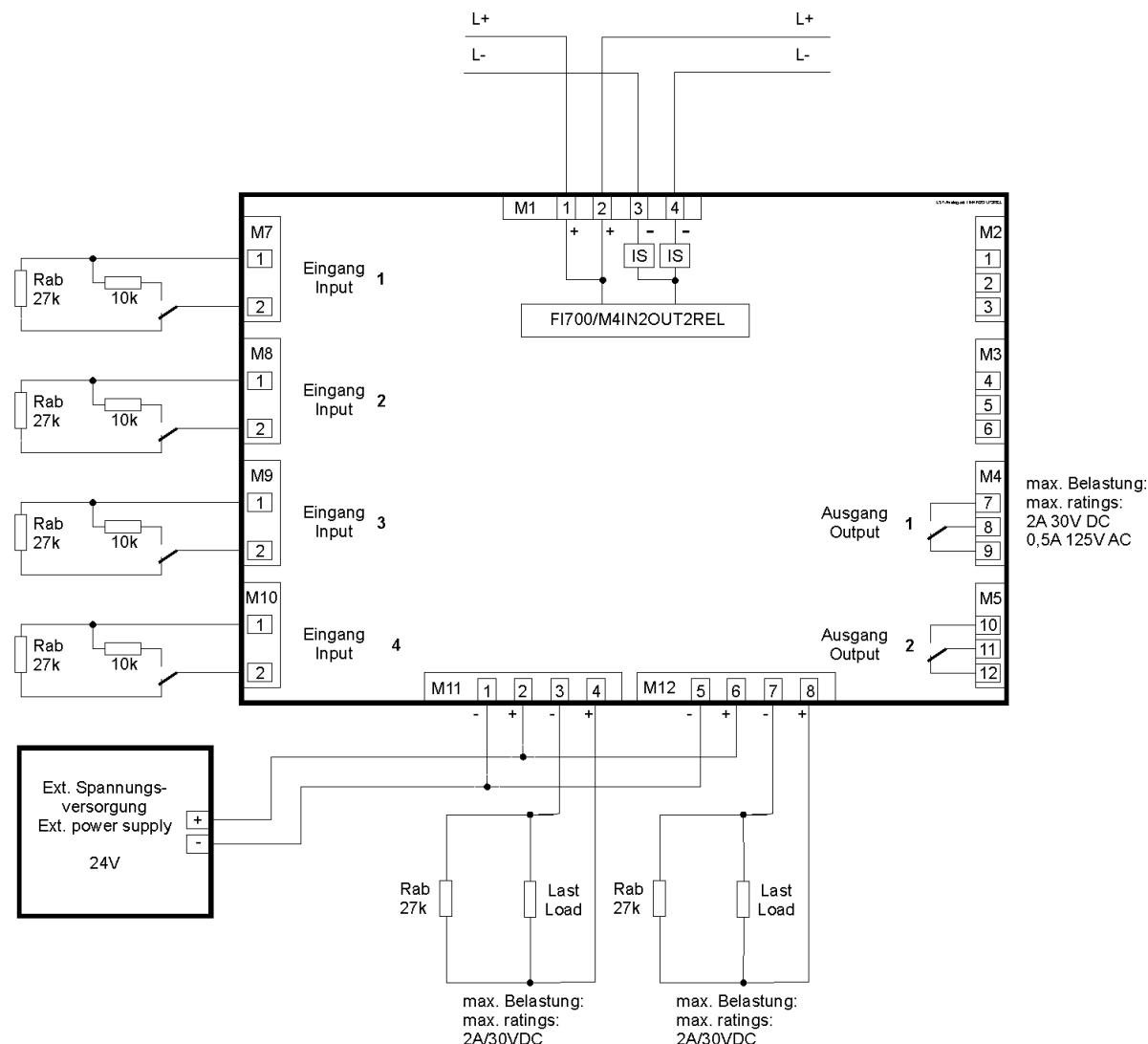
For the inputs:

- ◆ In the idle condition of all inputs the LED will blink in green.
- ◆ The LED will blink in red if one 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 79 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.

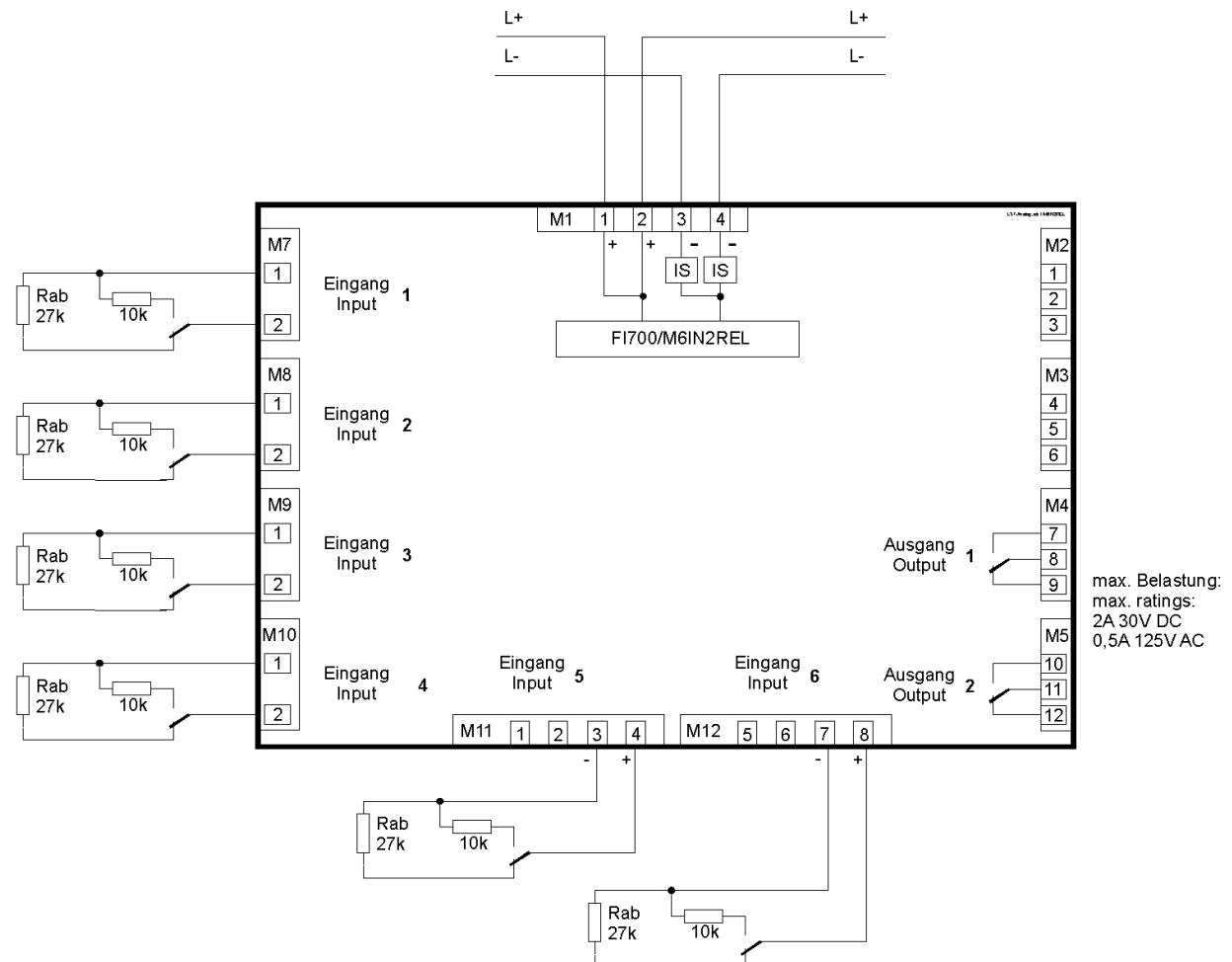
For the inputs:

- ◆ In the idle condition of all inputs the LED will blink in green.
- ◆ The LED will blink in red if one 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.

Art.No.	Type	Element type in PARSOFT	Remarks
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
356050	FI700/WM/STRRR	Loop strobe	
355199	FI700/WB/MT/SOUW	Loop siren	
355200	FI700/WB/MT/SOUW/STRC	Loop strobe	
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 strobe	
355201	FI750/WBRI/MT/SOUW		activated by detector
355203	FI750/WBRI/MT/SSTWC		activated by detector

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.

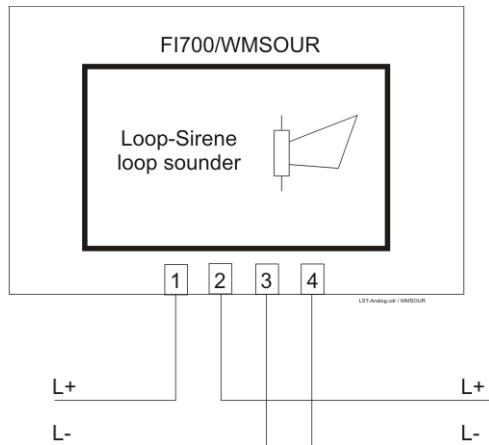
The maximum number of loop-powered sounders can differ from installation to installation. Please use the loop calculator tool which can be downloaded from the LST website – registration required.

3.12.2 Address setting

Detailed information can be found on page 79 in Chapter 3.3: „Address programming of loop elements“.

3.12.3 Sounder FI700/WM/SOUR – FI700/WM66/SOUR

3.12.3.1 Connection



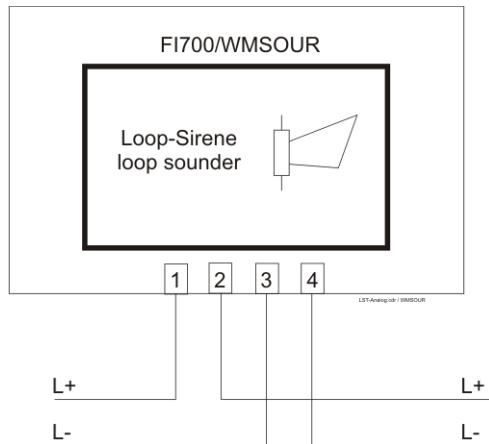
3.12.3.2 Tone setting

The tone is set by parameterising the element.

<i>Setting in PARSOFT</i>	<i>Frequency [Hz]</i>	<i>Repetition</i>	<i>Application</i>
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.

<i>Setting in PARSOFT</i>	<i>Frequency [Hz]</i>	<i>Repetition</i>	<i>Application</i>
Sound A	500 – 1200	3.5s increasing, 0.5s silent	Slow whoop
Sound B	1200 – 500	1Hz	DIN tone
Sound C	990	Continuous tone	BS tone

3.12.5 Sounder FI700/FBRI/MT/SOUW

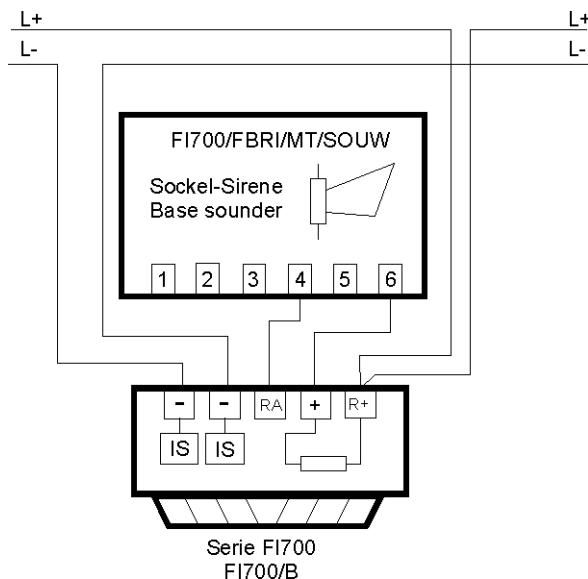
This sounder is actuated via the remote output of the detector and is activated in the alarm condition of the detector.



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 remote output of the actuating element (detector) must be set to „contin. on“.

3.12.5.1 Connection



3.12.5.2 Tone setting

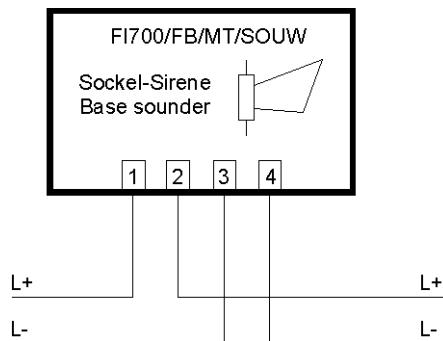
On the base sounder there are switches by means of which the sound level and the tone can be set.

<i>SW1</i>	<i>SW2</i>	<i>Sound level</i>
OFF	OFF	Low – 87dB(A)
ON	OFF	Medium – 90dB(A)
OFF	ON	High – 93dB(A)

<i>SW3</i>	<i>SW4</i>	<i>Frequency [Hz]</i>	<i>Repetition</i>	<i>Application</i>
OFF	ON	800 – 1000	0.5s	LF sweep
ON	ON	500 – 1200	3.5s increasing, 0.5s silent	Slow whoop
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			<i>Frequency [Hz]</i>	<i>Repetition</i>	<i>Application</i>
T1	T2	T3			
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			<i>Frequency [Hz]</i>	<i>Repetition</i>	<i>Application</i>
T1	T2	T3			
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

T4	Sound level
1 - ON	High – 90dB(A)
0 - OFF	Low – 80dB(A)

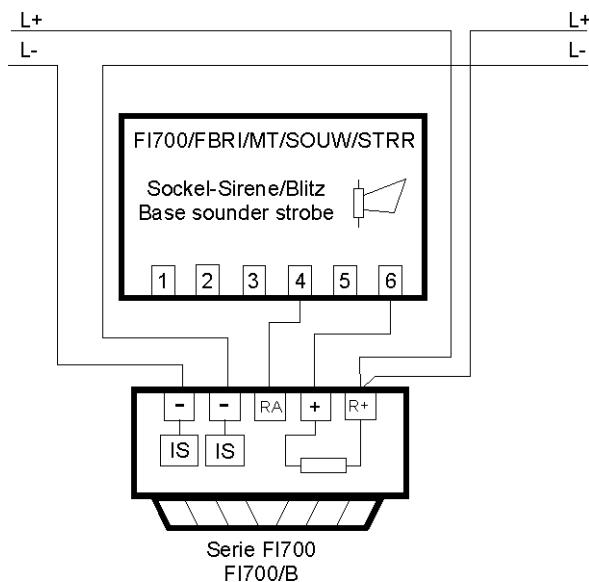
3.12.7 Sounder-Strobe FI700/FBRI/MT/SOUW/STRR

This sounder is actuated via the remote 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 remote output of the actuating element (detector) must be set to „contin. on“.

3.12.7.1 Connection



3.12.7.2 Tone setting

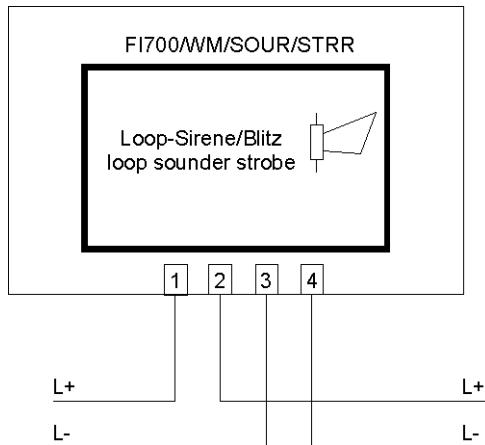
On the base sounder there are switches by means of which the sound level and the tone can be set. Two tones are listed here as examples.

<i>Switch</i>					<i>Frequency [Hz]</i>	<i>Repetition</i>	<i>Application</i>
<i>SW2</i>	<i>SW3</i>	<i>SW4</i>	<i>SW5</i>	<i>SW6</i>			
1	0	1	0	1	970	Continuous tone	BS tone
0	0	1	1	1	1200 – 500	1Hz	DIN tone

<i>Switch</i>		
<i>SW7</i>	<i>SW8</i>	<i>Sound level</i>
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.

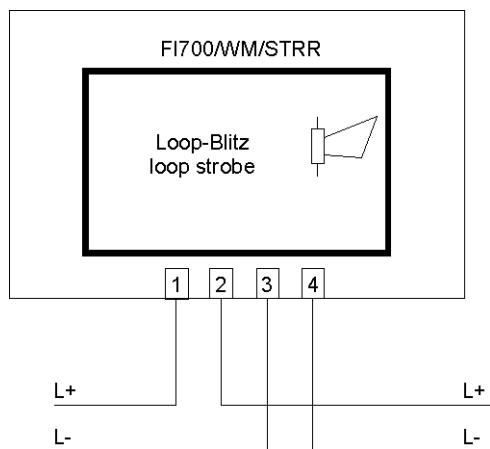
The switch settings result in the following tone:

<i>Switch</i>			<i>Frequency [Hz]</i>	<i>Repetition</i>	<i>Application</i>
<i>T1</i>	<i>T2</i>	<i>T3</i>			
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

<i>T4</i>	<i>Sound level</i>
1 - ON	High – 100dB
0 - OFF	Low – 90dB

3.12.9 Strobe FI700/WM/STRRR

3.12.9.1 Connection



3.12.9.2 Flash frequency and brightness

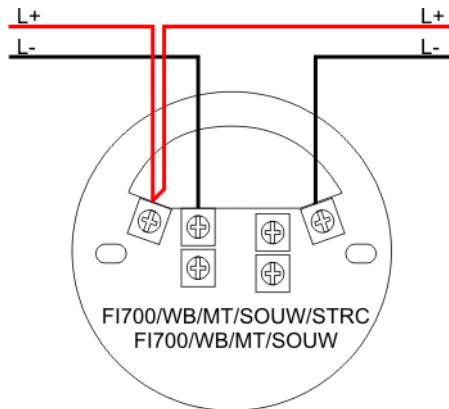
On the strobe there are switches by means of which the flash frequency and the luminous intensity can be set.

<i>T1</i>	<i>Luminous intensity</i>
1	1cd
0 – OPEN	0.5cd

<i>T2</i>	<i>Flash frequency</i>
1	0.5Hz
0 – OPEN	1Hz

3.12.10 Sounder FI700/WB/MT/SOUW - FI700/WB/MT/SOUW/STRC

3.12.10.1 Connection



3.12.10.2 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.

<i>Operation Mode</i>	<i>Sound level</i>
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.

<i>Setting in PARSOFT</i>	<i>Frequency [Hz]</i>	<i>Repetition</i>	<i>Application</i>
Sound A	500 – 1200	3.5s increasing, 0.5s silent	Slow whoop
Sound B	1200 – 500	1Hz	DIN tone
Sound C	1000	Continuous tone	Continuous tone

3.12.11 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.

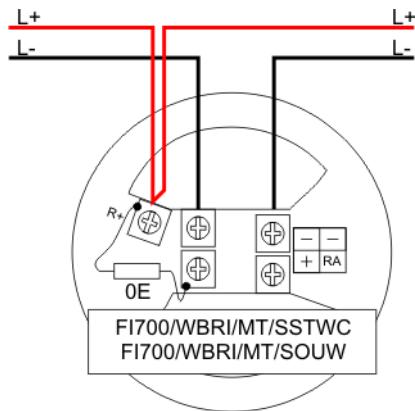


If the devices are connected to Fire Detection Control Panels Series **BC216**, a maximum of 8 sounders of the stated type can be simultaneously activated per loop, because the number of detector/module LEDs that can be activated is limited. The parallel output of the actuating element (detector) has 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 (available in the download area of the LST-website – registration required).

3.12.11.1 Connection



3.12.11.2 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.

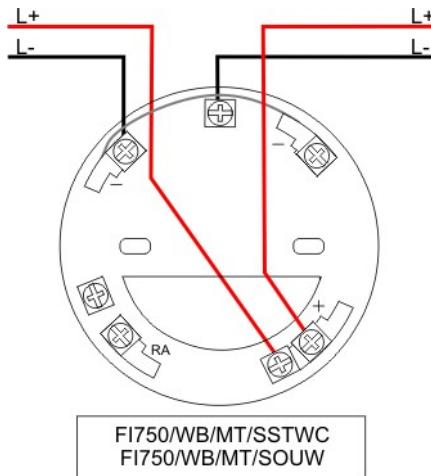
<i>Switch</i>					<i>Frequency [Hz]</i>	<i>Repetition</i>	<i>Application</i>
<i>SW2</i>	<i>SW3</i>	<i>SW4</i>	<i>SW5</i>	<i>SW6</i>			
0	1	0	1	1	970	Continuous tone	BS tone
0	0	1	1	1	1200 – 500	1Hz	DIN tone
1	0	1	0	1	500 – 1200	1Hz	Slow whoop

3.12.11.3 Sound level – FI700/WBRI/MT/SOUW and FI700/WBRI/MT/SSTWC

<i>Switch</i>		<i>Sound level</i>	
<i>SW7</i>	<i>SW8</i>	<i>FI700/WBRI/MT/SOUW</i>	<i>FI700/WBRI/MT/SSTWC</i>
0	0	Low – 89dB(A)	Low – 91dB(A)
0	1	Medium – 91dB(A)	Medium – 93dB(A)
1	0	High – 94dB(A)	High – 96dB(A)

3.12.12 Sounder FI750/WB/MT/SOUW – FI750/WB/MT/SOUW/STRC

3.12.12.1 Connection



3.12.12.2 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
Sound B	1200 – 500	1Hz	DIN tone
Sound C	1000	Continuous tone	Continuous tone

3.12.13 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.

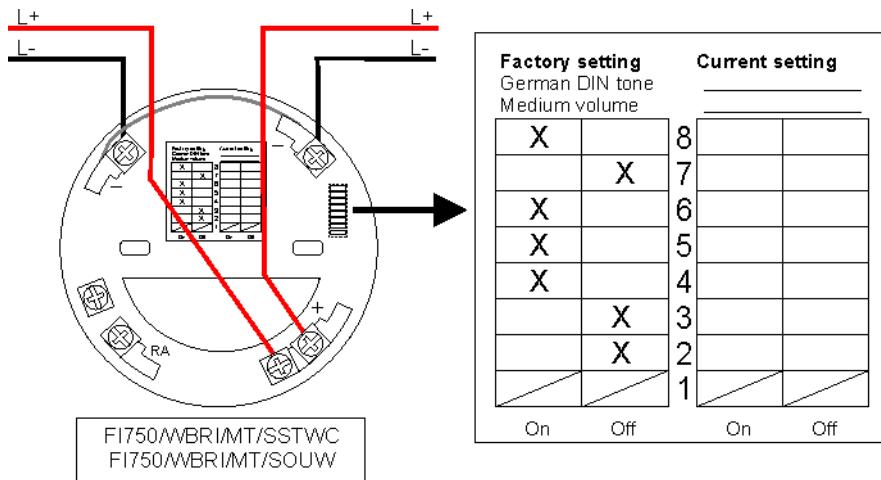


If the devices are connected to Fire Detection Control Panels Series **BC216**, a maximum of 8 sounders of the stated type can be simultaneously activated per loop, because the number of detector/module LEDs that can be activated is limited. The parallel output of the actuating element (detector) has 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 (available in the download area of the LST-website – registration required).

3.12.13.1 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.

3.12.13.2 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					Frequency [Hz]	Repetition	Application
SW2	SW3	SW4	SW5	SW6			
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

3.12.13.3 Sound level – FI750/WBRI/MT/SOUW

Switch		Sound level
SW7	SW8	
0	0	Low – 89dB(A)
0	1	Medium – 91dB(A)
1	0	High – 94dB(A)

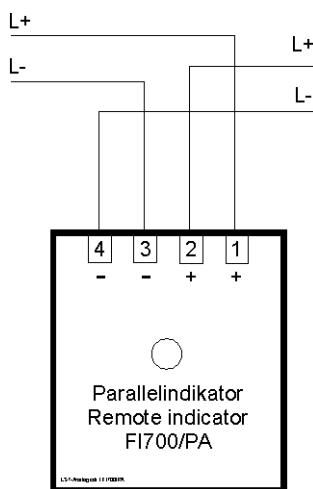
3.12.13.4 Sound level – FI750/WBRI/MT/SSTWC

<i>Switch</i>		
<i>SW7</i>	<i>SW8</i>	Sound level
0	0	Low – 91dB(A)
0	1	Medium – 93dB(A)
1	0	High – 96dB(A)

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



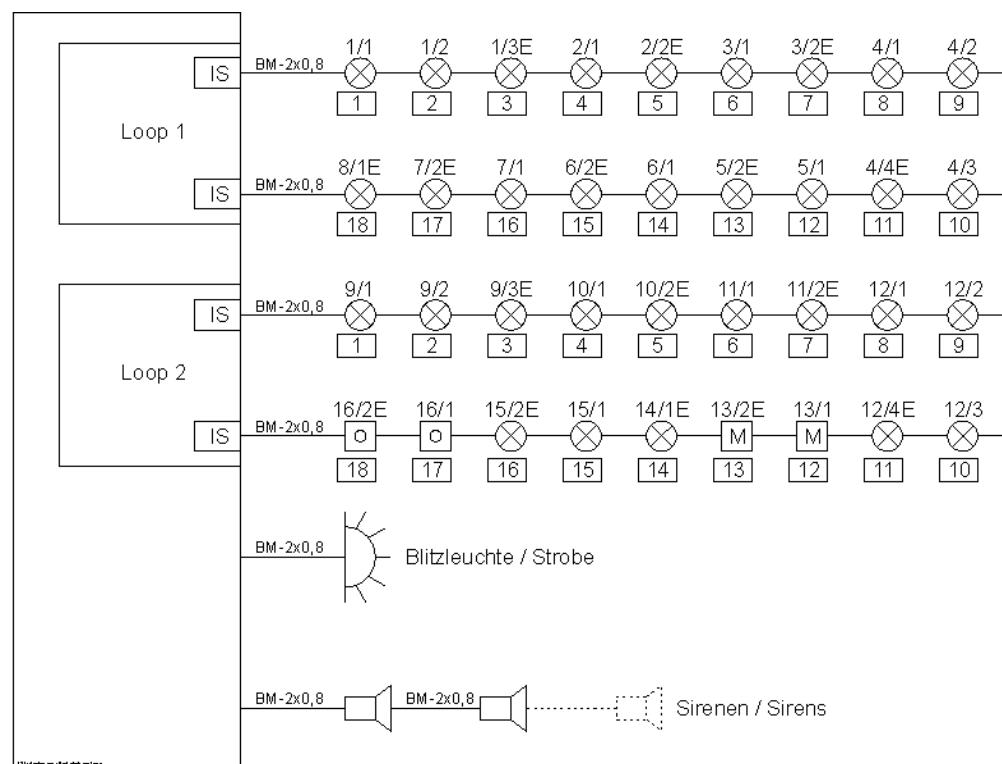
3.13.2 Address setting

Detailed information can be found on page 79 in Chapter 3.3: „Address programming of loop elements“.

3.14 Examples 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:

	Rauchmelder	Explanation:	
	Handfeuermelder		Smoke detector
	Modul (zB. Grenzwertmelder-, Überwachungsmodul)		Manual call point
	Isolator auf Loop-Interfacemodul LIF 128-1		Module (e.g., conventional zone module, monitor module)
15/2E	Gruppen-/Elementnummer (der letzte Melder einer Gruppe ist mit 'E' zu kennzeichnen)		Isolator on Loop Interface LIF 128-1
[4]	Elementadresse (max. 240 Elemente pro Loop)		Zone/element number (the last detector of a zone has to be marked with 'E')
BM-2x0,8	Kabelform (die max. Kabellänge ist im Kapitel "Anforderungen an Kabel" erläutert)		Element address (max. 240 elements per loop)
			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.

4 Programming of detectors, modules and signalling devices

4.1 Detectors

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 (DIFF, MAX)	
			78C	Class BS ¹⁾ typ. 78°C	
241081	FI700/OT	Optical/therm detector 58C ROR – every level	very high	O/T	2.0%/m / A1R
			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 (DIFF, MAX)	
			78C	Class BS typ. 78°C	
241087	FI750/OT	Optical/therm detector 58C ROR – every level	very high	O/T	2.0%/m / A1R
			high	O/T	2.7%/m / A1R
			normal	O/T	3.3%/m / A1R
			low	O/T	4.0%/m / A1R
			thermal	T	A1R
245771	HFM/3/72/02	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.

4.2 Signalling devices

Art.No.	Type	Element type in PARSOFT	Remarks
355180	FI700/WM/SOUR	Loop sounder	
355182	FI700/WM/MT/SOUR	Loop sounder	
355183	FI700/WM/MT/SOUW	Loop sounder	
355189	FI700/WM66/SOUR	Loop sounder	IP66
355184	FI700/FBRI/MT/SOUW		activated via detector
355185	FI700/FB/MT/SOUW	Loop sounder	
355192	FI700/FBRI/MT/SOUW/STRR		activated via detector
355187	FI700/WM/SOUR/STRR	Loop sounder-strobe	
355190	FI700/WM66/SOUR/STRR	Loop sounder-strobe	IP66
356050	FI700/WM/STRRR	Loop strobe	
355199	FI700/WB/MT/SOUW	Loop sounder	
355200	FI700/WB/MT/SOUW/STRC	Loop strobe	
355197	FI700/WBRI/MT/SOUW		activated via detector
355198	FI700/WBRI/MT/SSTWC		activated via detector
355202	FI750/WB/MT/SOUW	Loop sounder	
355204	FI750/WB/MT/SOUW/STRC	Loop strobe	
355201	FI750/WBRI/MT/SOUW		activated via detector
355203	FI750/WBRI/MT/SSTWC		activated via detector

4.3 Remote indicators

Art.No.	Type	Element type in PARSOFT	Remarks
251010	FI700/PA	Remote indicator blinking	
		Remote indicator contin. on	

4.4 Modules

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 Ctrl.module with supervis.	Input Output
249254	FI700/M1IN1REL	Monitor module Ctrl.module without supervis.	Input Relay output
249255	FI700/M1CZ	Conventional module Conventional module	EOL Capacitor 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 Ctrl.module with supervis.	Input Output
249260	FI700/MM1IN1REL	Monitor module Ctrl.module without supervis.	Input 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 Ctrl.module with supervis.	Input Output
249284	FI700/MDR1IN1REL	Monitor module Ctrl.module without supervis.	Input 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 Ctrl.module without supervis.	Input Relay output
249289	FI700/M4IN4REL	Monitor module Ctrl.module without supervis.	Input Relay output
249290	FI700/M4IN2OUT2REL	Monitor module Ctrl.module with supervis. Ctrl.module without supervis.	Input Output Relay output
249291	FI700/M6IN2REL	Monitor module Ctrl.module without supervis.	Input Relay output



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 139 in Chapter 3.11: „Combi modules“.

4.5 Radio linked devices

Art.No.	Type	Element type in PARSOFT	Remarks
249261	FI700/RF/W2W	RF Gateway	RF Interface
241082	FI700/RF/O	RF Optical detector	
242081	FI700/RF/T	RF Thermal detector	
241083	FI700/RF/OT	RF Opt./therm. detector	
249263	FI700/RF/M1REL	RF Ctrl.module no spv.	
249262	FI700/RF/M1IN	RF Monitor module	
245082	FI700/RF/MCP	RF Manual call point	
245694	HFM/3/73/01	RF Manual call point	
245695	HFM/3/73/02	RF Manual call point	
245697	HM/5/73/02/01	RF Manual call point	
245698	HM/5/73/02/02	RF Manual call point	
245716	HM/1/73/26/01	RF Manual call point	
245717	HM/1/73/26/02	RF Manual call point	
355181	FI700/RF/WM/SOUR	RF Siren	
355191	FI700/RF/WM66/SOUR	RF Siren	IP66
355188	FI700/RF/WM/SOUR/STRR	RF Siren	Sounder strobe
356051	FI700/RF/STRRR	RF Siren	Strobe
355193	FI700/RF/WB/SOUW	RF Siren	Base sounder
355194	FI700/RF/WB/SOUW/STRC	RF Siren	Base sounder/strobe
251011	FI700/RF/PA	RF Ctrl.module no spv.	Remote indicator



The configuration of RF devices 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 RF devices are parameterised with PARSOFT. Therefor, only the element type is set.

4.5.1 Allowed settings for the RF detectors

Art.No.	Type	Element type in PARSOFT	Level	Mode	Sensitivity
241080	FI700/RF/O	RF Optical detector	High	O	3.1%/m
			Normal	O	3.8%/m
			Low	O	4.4%/m
242080	FI700/RF/T	RF Thermal detector	Fixed		Thermal detector class A1, 58°C
			A1R		RoR detector class A1R, 58°C
			High Temp.		Thermal detector class B, 78°C
241081	FI700/RF/OT	RF Opt./therm. detector	High	O	3.1%/m
			Normal	O	3.8%/m
			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



For the thermal unit of **RF Opt./therm. detectors** and **RF Thermal detectors**, only the **A1R** mode (rate-of-rise principle, 58°C alarm temperature) may be selected. Only this mode is approved accord-

ing to EN 54-5!

For the optical sensing chamber of the **RF Optical detector** and the **RF Opt./therm. detector**, only the **normal** sensitivity level may be set. Only this mode is approved according to EN 54-7!

5 Analogue values - Condition of detectors/modules

The condition of the detectors and modules Series FI700/FI750 is determined by the combination of analog values and the status message. Below shown tables only reflect the measurement value and their meaning. As a consequence also the status message of the element has to be taken into consideration.

Example: Control module with supervised output

Value: 15

According to the table on page 166 in Chapter 5.3.3: „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 PAR-SOFT by means of the table „Element Status“ where the readout of the analog 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.

5.1 Function of the LEDs

5.1.1 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.

LED-colour	Meaning
Yellow	Wrong type installed, double address
Red-blinking	Alarm state
Red	Alarm state

5.1.2 Modules

Note that the LED condition also depends on the programming of the fire detection control panel. The LEDs of the modules have the following function.

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

5.2 Standard detectors

5.2.1 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

5.2.2 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

5.2.3 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

5.2.4 Manual call points

The table below applies to the Manual Call Points Series MCP / HFM.

Value	Meaning
0	Detector defective, removed or short circuit on the loop
32	Detector OK
>191	Alarm

5.3 Modules

5.3.1 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

5.3.2 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

5.3.3 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)

5.3.4 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)

5.4 Sounders, strobes

Value	Meaning
0	Device defective, removed, broken wire or short circuit on the loop
32	Device OK (active/not active)

5.5 Remote indicator

Value	Meaning
0	Device defective, removed, broken wire or short circuit on the loop
32	Device OK (active/not active)

5.6 RF elements

5.6.1 RF Interface – FI700/RF/W2W

Value	Meaning
0	Device defective, removed, broken wire or short circuit on the loop
32	Device OK

5.6.2 Manual radio call point

Value	Meaning
0	Device defective, removed from base
32	Device OK (active/not active)

5.6.3 Automatic radio detectors – FI700/RF/O, FI700/RF/T, FI700/RF/OT

Value	Meaning
0	Detector defective, removed from base
32	Idle
>191	Alarm

5.6.4 Radio modules

5.6.4.1 RF 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)

5.6.4.2 Radio 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

5.6.5 Radio sounders, radio strobes

Value	Meaning
0	Device defective
32	Device OK (active/not active)

5.6.6 RF remote indicator

Value	Meaning
0	Device defective
32	Device OK (active/not active)