HEKATRON

Ihr Partner für Brandschutz

Instruction manual

Power supply unit
SVG 522

SVG 522

Contents

1 About this document

1.1 Objectives and intended readers

The present document describes the function of the power supply unit SVG 522 by Hekatron with the hardware and software releases applicable at the date of issue of this document. You will find information on the following subjects:

- Safety
- Design and mode of operation
- Product use
- System components
- System integration
- Commissioning
- Maintenance

This document is intended for the following groups of persons:

- Installation planners
- Purchasing agents
- Installation technicians
- Electricians
- Safety officers
- Maintenance staff

1.2 Symbols used

Some items of information in this document are specially emphasised in order to ensure quick access to such passages.

A note informs you about special features of the unit, explains important circumstances, or recommends special procedures.

Warning of potential damage to equipment!

This symbol is used to indicate information that is important for correct operation of the unit. Any neglect of this warning may result in damage to the device.

Danger!

This symbol is used to indicate information that is of crucial importance for health and safety of persons. Any neglect of this symbol may result in damage to health and personal injury.

2 Safety

Observe and follow the instruction manual!

The following instructions do not provide a complete list of all binding standards and regulations. Particular cases of application may require that additional regulations, findings and state-of-the-art skills should be considered.

Observe the instruction manual!

The SVG 522 instruction manual is an integral part of the product. Before handling, installing and commissioning the SVG 522 power supply unit, the following safety instructions as well as descriptions and information about the present Instruction manual must be carefully read and observed.

It is a fundamental rule that, when planning, installing, assembling, and operating the hold-open system, specific national rules and regulations must be observed. In any case, any specific national provisions have priority over the following project planning instructions.

Avoid damage to markings!

The type plates, type designations and/or identification markings on the devices and printed circuit boards must not be removed, overwritten, or made illegible.

2.1 General safety information and protective measures

Instructions applicable in Germany

The test regulations of the Deutsches Institut für Bautechnik (DIBt) and the respective building inspectorate approval must be observed and followed when planning, assembling, installing and operating hold-open systems on fire barriers.
The information contained in this instruction manual is based on these regulations.

Ensure proper use!

- The technical data stated on the equipment must be observed.
- Modifications or changes to the equipment are not permitted.
- The equipment may only be operated when it is in undamaged and perfect condition and only for its intended purpose.
- No other spare parts than the original ones available from the manufacturer must be used.
- The equipment may only be repaired by the manufacturer's instructed and authorised personnel.
- The allowed components of the hold-open system are listed in a separate building inspectorate approval.
- Doors and gates – mechanical aspects. In its version of August 2000, DIN EN 12604 specifies basic mechanical requirements for doors and gates which are provided for installation in areas that are accessible to persons.

Their intended use requires that safe access should be possible for goods and vehicles that are accompanied by persons. The doors and gates may be actuated manually or power-operated.

The above instructions are completed by various regulations under the regime of the Equipment Safety Act as well as technical measures for occupational safety and health that are to be taken into account. Accident prevention regulations, the professional associations' directives or other requirements some of which are applicable to specific installations must also be taken into account.

We recommend that, based on the system of rules, the operator should set up a safety concept and/or fire protection concept which provides for a detailed risk analysis. In this process, basic principles should be set up in a specific order.

Safety measures must always be taken in a specific order.

The subsequent risk analysis should particularly include the following issues:

- Identification of fire and accident risks to which the employees may be exposed
- Selection of appropriate measures to ensure that safety requirements will be met
- Safe design, operation and maintenance of work equipment, warning and safety devices

Hold-open systems are subject to the duty of servicing required according to DIN 31051 and DIN 14677. More information can be found in the respective approval document of the hold-open system.

If the use of the system is changed, it must be verified whether the legal provisions, requirements and state of the art are appropriately taken into account. Specialised staff must be provided for projecting, assembling and commissioning. When working on electrical installations, special regulations must be complied with.

Such work may only be carried out by authorised qualified electricians.

Principle under building law:

All persons involved in a construction project must comply with all principles and provisions under building law by themselves without needing a special note from the Construction Supervisory Board. This is applicable for building owners, design writers, design planners, contractors, and operators.

Special notes:

Please observe the following provisions for hold-open systems in potentially explosive areas:

- **SVG 522 equipment must not be used in hold-open systems for potentially explosive areas.**

2.2 Intended use

The SVG 522 device is a power supply unit to be used in hold-open systems and fire barriers within the scope of path-bound conveying systems. When being part of a hold-open system, the SVG 522 may only be operated in connection with a TSK 03, FAK 01 or FAD 01. While the device is commissioned and operated, it is absolutely necessary that the safety instructions as well as acceptance and test rules of this instruction manual should be observed.

2.2.1 Hold-open systems for fire barriers

For reasons of structural fire protection, buildings are subdivided into fire zones by means of closed fire doors. In the event of fire, smoke will therefore be restricted to the fire zone affected, escape routes will remain passable, and rescue work will not be interfered. Since closed fire doors often interrupt operating procedures, hold-open systems are installed which automatically close open fire doors in the event of fire.

When the SVG 522 power supply unit is used to supply hold-open systems with energy, use must be made either of the door control board TSK 03 or the hold-open system board FAK 01 (FAD 01).

To store the alarm state of the system, the extension board SAB 04 must be used.

2.2.2 Hold-open system for fire barriers within the scope of path-bound conveying systems

When the SVG 522 power supply unit is used to supply hold-open systems with energy, use must be made of the door control board TSK 03.

System components:

a) Hold-open system for fire barriers within the scope of path-bound conveying systems, consisting of:

– Smoke switch/thermal switch to detect a fire and automatically trigger the hold-open device
– Electromagnetic door retainer to lock the barrier
– Manual release button to manually release the fire barrier
– Safety devices (for example, light barriers, etc.)
– Hold-open system power supply

b) Conveying system: The conveying system and the related regulations are included in the technical documentation issued by the manufacturer of the conveying system.

c) Fire barrier: The fire barrier must meet legal and fire-protection requirements. Fire barriers of conveying systems must be made and installed such that, while they are closed, the transfer of fire is prevented for a certain burn time. See DIN 4102 ff. Suitability must be verified.

Appropriate measures must be taken to ensure that the closing operation will not be impeded by the conveying system or by transported material. This requirement applies both to the operating state and a failure of the system.

2.2.3 Hold-open system for fire barriers in relation with the control of side and cover flaps.

The suitability of the flap elements (top and/or side flaps) has been verified by a separate mechanical functional test. The results of this test can be included in the approval document for the sliding door or gate. The sliding door or gate must be of the self-closing type. This function of the sliding door or gate must not be impaired by the flaps that have been added.
The cover flaps can be opened with gas springs, steel tapes or other elements. The cover flaps are kept closed by electromagnetic retainers that are listed in the relevant approval document for the hold-open system.

There are two types of cover flaps:

a) Top flaps

b) Recess flaps or side flaps (inlet side and inlet opposite side)

When the system is installed, moving parts must be prevented from having a negative effect on each other.

The use of the sliding door or gate with cover flaps and a hold-open system with extended flap functionality is defined in the respective approval document.

Hold-open system configuration:

The hold-open system is extended by the functionality of energising the side/cover flaps on sliding doors and gates.

When cover flaps are used on sliding doors and gates, it must be ensured that the sliding door or gate starts with a delay in relation to the opening of the cover flaps.

Top and side flaps must not impair each other.

Generally, the hold-open system must feature a battery-buffered energy supply unit.

All control elements must be connected to a battery-buffered energy supply unit.

If there is no primary energy supply (230 V AC), the system can be reliably closed by the equivalent power supply (batteries).

The SVG 522 power supply unit is provided with the additional door control board TSK 03. The door control board TSK 03 is a control and connection board for hold-open systems.

2.3 Warranty claims

In case of non-compliance with the information contained in this instruction manual, any claims for warranty and liability of the manufacturer of the SVG 522 will become invalid. In particular, the device or its components may only be repaired by the manufacturer's instructed and authorised personnel. Non-compliance with this clause will result in any claims for warranty and liability against the manufacturer of the SVG 522 device becoming null and void.

The information and warranty conditions stated in the **General Terms and Conditions** of Hekatron Vertriebs GmbH, Brühlmatten 9, D-79295 Sulzburg are applicable.

3 Product description

3.1 SVG 522

The SVG 522 power supply unit with battery buffer (part no. 5400085.0201) consists of the power supply board SVK 47 and a stable industrial housing made of sheet steel and having degree of protection IP 54. The SVG 522 is of the wall-mounted type. An assembly kit for wall-mounting with lugs (part no. 6100038) is available for individual assembly. Cable entries are provided on the top side of the housing. Indicators for the power supply unit and optional door control board TSK 03 as well as acknowledgement options are incorporated in the keypad on the door front of the housing. Labelling fields can be exchanged as desired. The SVG 522 version with TSK 03 (part no. 5400085-0210) already features the installed and pre-wired door control board TSK 03.

The SVG 522 complies with the standards and directives EN 54-4 and VdS 2541 as well as the DIBt provisions and was primarily developed for use in hold-open systems and path-bound conveying systems. It is intended for battery-buffered direct current supply of the door control boards TSK 03 and FAK 01/FAD 01 according to standards. These door control boards are used to supply and evaluate peripheral devices, such as smoke switches, electromagnetic door retainers, light barriers, and signalling means.

The user has the option of installing either two hold-open system boards FAK 01 or one door control board TSK 03 in the SVG 522.

Features:

The SVG 522 is characterised by the following features:

- Short-circuit-proof
- Primary clock pulses
- High efficiency
- Maintenance-free emergency power supply
- Audible and visual indication of power, battery and fuse failures as well as low voltage and earth fault
- Potential-free changeover relay for power failure, low voltage and battery failure
- Ready indicator
- Temperature-dependent trickle charge
- Batteries protected against total discharge
- Installation slot for door control board TSK 03 or 2 FAK 01
- DIBt approval for hold-open systems Z-6.5-1725
  DIBt approval for path-bound conveying systems Z-6.5-1891
- VdS tested

DIBt

Protection against total discharge

Totally discharged batteries may be permanently damaged. The end-of-discharge voltage must not fall below the value specified by the manufacturer. The total discharge range starts below this voltage. In the event of a power failure, the SVK 47 power supply unit constantly monitors the battery discharge state. Once the end-of-discharge voltage is reached, the power supply unit automatically disconnects the consumers from the batteries. This is called load shedding.

The following must be observed in the event of power failure

In order to ensure operation as prescribed in the event of power failure, a buffered standby current must be available for up to 4 hours as well as an additional buffered alarm current for half an hour. Moreover, totally discharged batteries must be able of being recharged to 80 % of their capacity within a charging time of 24 hours (EN 54-4, VdS 2095).

Current limiting / charging current distribution

The SVG 522 can be charged with a maximum of 2 A.

The total current is distributed among the charging current and the consumer current. While the batteries are completely charged, a maximum of 2 A is theoretically available for the consumers. This current is reduced if charging current is required.

Distribution of the total current for the SVG 522 when two 12-V/7.2-Ah batteries are used:

Distribution of the total current for the SVG 522 when two 12-V/7.2-Ah batteries are used:

Reserved charging current: 700 mA	Current available for consumers: 1.3 A

Example calculation of the battery capacity according to EN 54-4:

SVG 522 with connected consumers:	
Standby current with consumers ($I_{STANDBY}$):	1.2 A
Override time (T_O):	4 h
Alarm current with consumers (I_{ALARM}):	1.3 A
Alarm time (T_A):	0.5 h
Battery capacity needed for the required override time	4.8 Ah
Current required for an alarm time of 0.5 h	0.65 Ah
Total battery capacity required:	**5.45 Ah**

(without taking the voltage drops at the supply lines into account)

Result:

Based on the battery capacity, an SVG 522 with a battery pair of 7.2 Ah can therefore supply the system with current for a time period of more than 4 hours (acc. to EN 54-4)

Battery monitoring

For battery monitoring purposes, the batteries are loaded at cyclic intervals of 60 sec during mains operation, while the voltage is measured at the same time. An aged or defective battery is signalled by the "collective fault" LED which lights up on the SVK 47 board and the "failure" indicator which lights up simultaneously on the display and operator panel.

Status monitoring:

The SVK 47 board provides 3 potential-free changeover contacts which separately indicate the following states:

- Power failure
- Total discharge
- Collective fault (battery and processor)

The SVG 522 which is provided with the door control board TSK 03 (part no. 5400085-0210) has the collective fault and total battery discharge output already pre-wired to the alarm evaluating unit of the TSK 03 at the factory.

Usable battery types

The only battery types allowed to be installed are 12-V/7.2 Ah batteries tested by VdS. We recommend to install emergency power batteries BA-7.2 Ah (part no. 30-2310002-01-xx). Two 12-V/7.2 Ah batteries must be taken into account.

3.2 Indicators

Indicators for the power supply unit and optional door control board TSK 03 as well as acknowledgement options are incorporated in the keypad on the door front of the housing. Labelling fields can be exchanged as desired.

The SVG 522 version without door control board TSK 03 has the labelling field "Door control board" already inserted into the labelling space on its rear side (white area). If the door control board TSK 03 is installed subsequently, the labelling field can be taken out of the labelling space laterally and re-inserted with the "Door control board" labelling being visible.

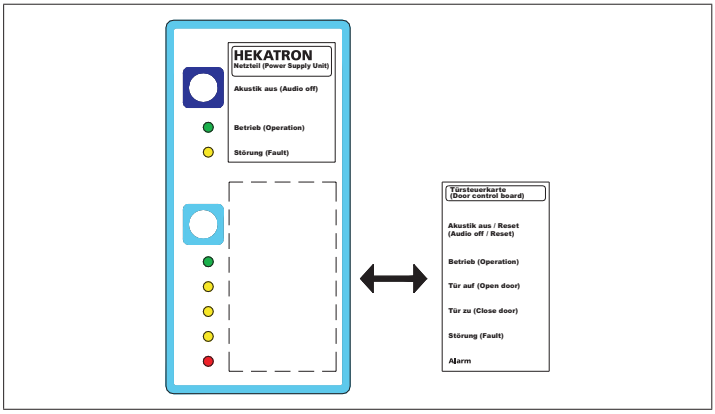


Fig. 01: Labelling field for the TSK 03 on the operator panel

3.2.1 Display and operator panel for the power supply unit

❶ **"Akustik aus" button (audio off):**
The audible warning signal is reset in the event of a failure of the power supply unit (battery or power failure, processor fault, total discharge, earth fault).

❷ **"Betrieb" indicator (operation):**
Indicates that the power supply unit is in operation.

❸ **"Störung" indicator (fault):**
Indicates battery or power failure
(see p. 26, table-01).

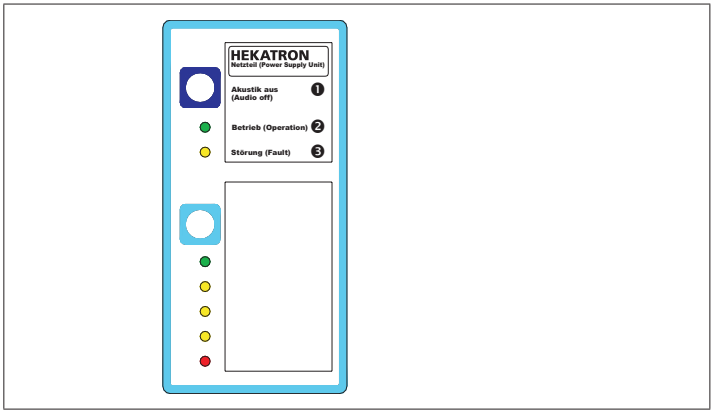


Fig. 02: Operator panel for the power supply unit

3.2.2 Display and operator panel for the door control board TSK 03

The reset/alarm acknowledgement function can only be performed if there is no alarm criterion present for a time period of at least 30 seconds.

❶ **"Akustik aus/Reset" button (audio off/reset):**
The audible warning signal is reset if the connected light barrier and reset function (alarm acknowledgement) have failed/are disabled after an alarm has been triggered.
❷ **"Betrieb" indicator (operation):**
Indicates that the door control board TSK 03 is in operation.
❸ **"Tür auf" indicator (Open door):**
Indicates that the door is open (optional connection).
❹ **"Tür zu" indicator (Close door):**
Indicates that the door is closed (optional connection).
❺ **"Störung" indicator (failure):**
Indicates that the connected light barrier has failed/is disabled (optional setting).
❻ **"Alarm" indicator:**
The indicator flashes and is red: An alarm criterion is pending; the set time is elapsing. The indicator emits steady light and is red: Closing has been initiated.

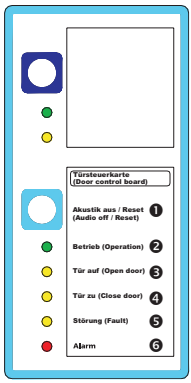


Fig. 03: Operator panel for the door control board TSK 03

3.2.3 AFT 01 board for the operator panel inside the door

The display keypad AFT 01 serves as interface between the power supply unit board SVK 47 of the optional door control board TSK 03 and the display and operator panel. In addition, 2 audible signal transducers are integrated and are energised internally.

The left-hand ribbon cable connector is connected to the power supply unit board SVK 47. The right-hand ribbon cable connector of the SVG 522 version with TSK 03 is connected at the factory.

❶ *SVK 47*
❷ *TSK 03*
❸ *Audible signal transducers*

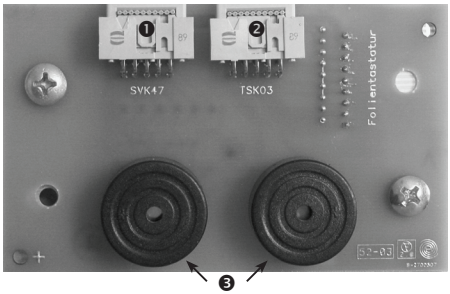


Fig. 04: AFT 01 board inside door

If the TSK 03 board is installed subsequently, the connection from the TSK 03 to the AFT 01 must still be made (ribbon cable included in the TSK 03 delivery).

3.3 TSK 03 option

The TSK 03 door control board (part no. 5300680-0201) is mainly used to evaluate and control hold-open systems with light barrier monitoring and path-bound conveying systems.

It features inputs for automatic fire detector evaluation, manual release, light barriers and door limit switches. Separate outputs are provided for energising hold-open devices as well as visual and audible signal transducers.

Potential-free and switched outputs, such as alarm, light barrier failure, initiated closing operation and door end switch evaluation are provided as interface to an existing building control system or conveying system.

The board features setting options for configuring the system and additionally allows setting delay times for the connection of hold-open devices (see chapter 7.1).

The SVG 522 features a slot for installation of the TSK 03.

Features:

The door control board is characterised by the following features:

- Monitoring and evaluation of the connected smoke switches
- Monitoring and evaluation of the connected light barrier
- Configuration as monitoring unit with or without personal protection
- Optional evaluation of the disabled light barrier
- Evaluation of the connected manual release buttons
- Separate input for additional manual release with or without energisation of the alarm output (can be configured as desired)
- Option of including delay times for the closing operation
- 4 inputs for door limit switches; 2x for "Open door" and 2x for "Close door"
- Separate input for reset function
- "Alarm" info as potential-free changeover contact; an additional output with potential
- "Light barrier failure" info as potential-free changeover contact; an additional output with potential
- "Closing initiated" info as potential-free changeover contact; an additional output with potential
- "Open door" info as potential-free changeover contact; an additional output with potential
- "Close door" info as potential-free changeover contact; an additional output with potential
- Actuators for hold-open devices
- Actuators for visual and audible signal transducers

The options of configuring the door control board TSK 03 are described in chapter 7 "TSK 03 settings".

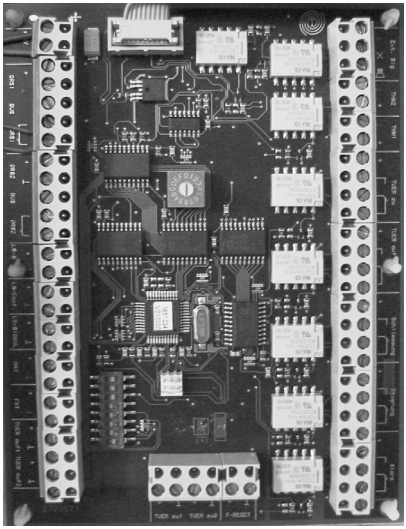


Fig. 05: TSK 03 door control board

3.4 FAK 01/FAD 01 option

The hold-open system board FAK 01 (part no. 6300116) can be installed as an alternative to the door control board TSK 03 and is mainly used for evaluating and controlling conventional hold-open systems.

It features an input for evaluating the automatic fire detection elements and the manual release. The hold-open devices are energised via a switched output.

In addition, the "Alarm" info can be separately output via a potential-free changeover contact.

The FAD 01 can be provided with the additional board SAB 04 (part no. 4400043) for the purpose of alarm storage.

The SVG 522 features two slots for installation of the FAK 01.

The FAK 01 board is also available as surface-mounted board with its own housing. The name of the board incl. housing is FAD 01 (part no. 5700103). They can therefore also be mounted separately.

Using multiple FAK 01/FAD 01 boards

If multiple FAK 01/FAD 01 boards are used, the total current available must be noted (see chapter 3.1 "Design and operating principle of the SVG 522 > Current limiting / charging current distribution).

❶ *Slot for additional board SAB 04 with the FAK 01/FAD 01*

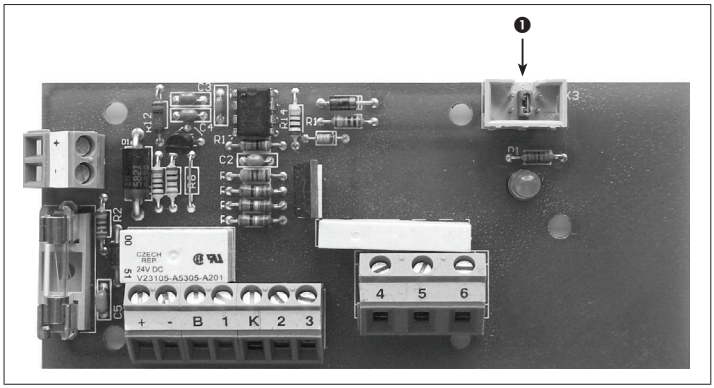


Fig. 06: Hold-open system board FAK 01/FAD 01

3.5 Flap control option

Where sliding doors and gates with extended flap functionality are concerned, the door control board TSK 03 allows opening the side flaps with a delay in relation to the top flap. To achieve this, the alarm output of the TSK 03 can be used to open the top cover.
The output for the hold-open device is used for the delayed energisation of the side flaps. The delay can be set within a range from 0 to 120 seconds in 10-second increments. An additional delay of 2 minutes and 10 minutes is available.

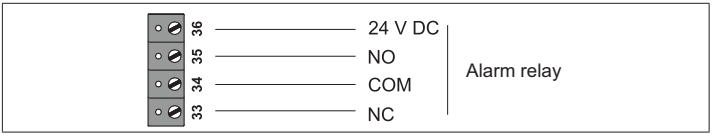


Fig. 07: Alarm relay

The TSK 03 detects the alarm message; the alarm relay is energised instantly and triggers the top flaps.

❶ *Terminals 53/54 and terminals 55/56 are both de-energised after the set time has elapsed (see chapter "Hold-open device connection")*

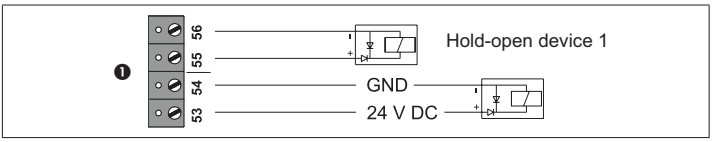


Fig. 08: Hold-open device 1

After the time set on the TSK 03 has elapsed, terminals 53/54 and 55/56 are de-energised. In the connection example above, terminals 53/54 are used to open the side flaps with a delay and terminals 55/56 are used to release the door or gate holding magnets with a delay.

Hold-open devices for the flaps

The hold-open devices for the flaps must be listed in the DIBt approval document for the hold-open system.

4 Scope of delivery and transport

The SVG 522 is delivered in an appropriate cardboard packaging that is sealed with an adhesive tape. The packaging can be recycled and reused.

Scope of delivery of SVG 522 (part. no. 5400085-0201):
- 1 housing with built-in power supply board
- 19 sarel plugs
- 1 M20 cable gland
- 2 battery holding brackets
- 4 allen screws
- 1 cable kit for battery fuse
- 1 instruction manual

Scope of delivery of SVG 522 with TSK 03 (part. no. 5400085-0210):
- 1 housing with built-in power supply board
- 19 sarel plugs
- 1 M20 cable gland
- 2 battery holding brackets
- 4 allen screws
- 1 cable kit for battery fuse
- 1 door control board TSK 03, mounted and pre-wired
- 2 resistors 10 kΩ
- 1 resistors7.5 kΩ
- 10 diodes 1N4007 DO-41
- 1 instruction manual

Scope of delivery of TSK 03 (part. no. 5300680-0201):
- 1 door control board TSK 03
- 1 ribbon cable for AFT 01
- 6 PCB holders
- 2 resistors 10 kΩ
- 1 resistors7.5 kΩ
- 1 instruction manual

Packaging instructions

The cardboard packaging is suitable for being shipped by mail or rail to a limited extent only. Special packaging is available for transports to tropical zones, transports by sea, etc. For more information, please contact the manufacturer.

5 Installation

SVG 522 location and installation requirements:

The room must provide adequate protection against adverse environmental influences, e.g., against operation-related vibration, smoke, dust, gas, etc. Equipment having adverse influence, such as gas, water or vapour lines, sprinkler systems, etc. must also be taken into account.

It must be ensured that the range of ambient temperature during operation (see "Technical data") is maintained.

The wall to which the SVG 522 will be attached must have adequate carrying capacity.

When the SVG 522 is installed to metal, it must be provided with an earth fault monitoring unit.

The SVG 522 must also be protected against adverse environmental influences, such as dust, paint, water or extreme temperatures, during the construction phase as well.

Installation sizes and attachment

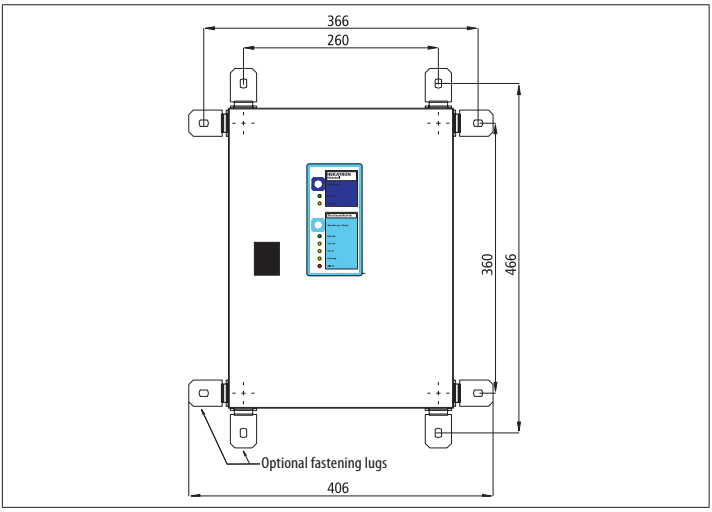


Fig. 09: SVG 522 front view with fastening lugs

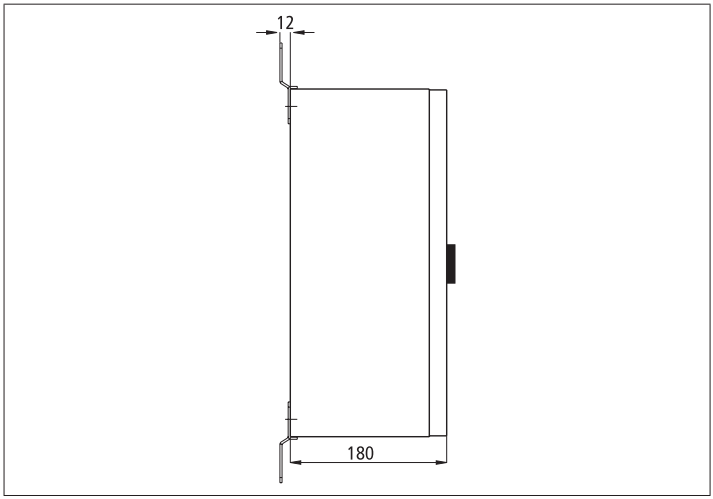


Fig. 10: SVG 522 lateral view with fastening lugs

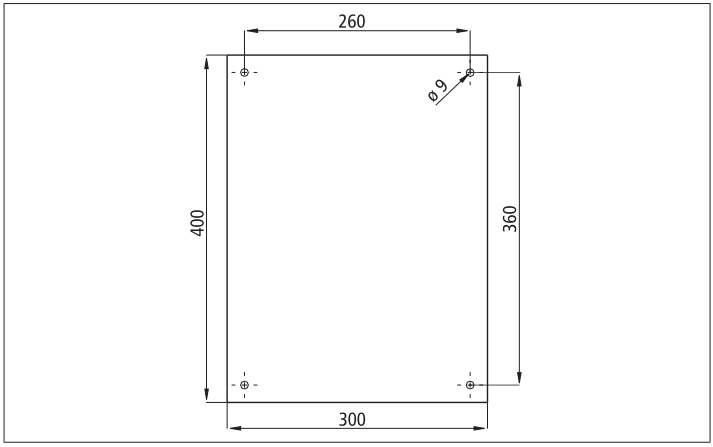


Fig. 11: SVG 522 rear view without fastening lugs

Cable entries

The housing features 20 cable entries on its top side.

An M20 cable gland with strain relief is available for the mains supply line.

Degree of protection IP 54

No more than 1 cable may be used per cable entry to ensure IP 54.

Battery attachment

A *Allen screw*
B *Allen screw*
C *Holding bracket*

❶ *Power supply unit*
❷ *Cable duct*

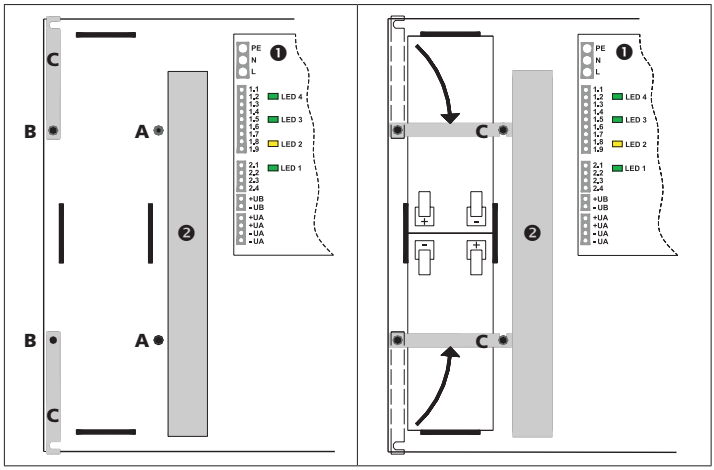


Fig. 12: Battery attachment

Step 1:

Screw the supplied allen screws **(A)** into the two right-hand threads on the mounting plate, but not completely yet.

Put the two remaining allen screws **(B)** through their respective holding brackets **(C)** as shown in the drawing, so that the upper holding bracket can only be opened towards the top and the lower one only towards the bottom.

Screw the two screws including holding brackets into the two left-hand threads on the mounting plate, but not completely yet.

Step 2:

Place the two batteries into the battery compartment such that the connections are arranged opposite to each other in the centre.

Place each of the holding brackets **(C)** under the right-hand Allen screws and then tighten the 4 allen screws. The recommended tightening torque is approx. 80 Ncm.

The holding brackets are installed correctly when the holding brackets are prevented from hitting against the connectors of the batteries while the right-hand allen screws are unscrewed (e.g., for battery replacement).

6 Electrical installation

6.1 General instructions and regulations

The device may only be installed and connected by electricians according to generally accepted rules of technology. Generally accepted rules of technology are DIN, VDE and EN standards, VdS guidelines, the professional associations' accident prevention regulations as well as generally known and verified experiences in this field which are not covered by a standard.

The system must be de-energised before installation work is carried out on the SVG 522.

The supply circuit must be provided with a separator. The place of installation of the separator must be documented.

For installation, the local provisions shall have priority. Protective conduits must generally be used in areas that are within reach of persons. On the basis of local provisions it must be determined whether to use plastic or steel-armoured conduits. Safety extra-low voltage lines must be laid separately from line voltage carrying lines. Therefore, separation strips must be used in cable conduits or in cable trays.

Lines must be provided with adequate mechanical protection, properly installed and secured, and in compliance with the requirements applicable at the place of installation.

The number of line connections should be kept as low as possible. Every required connection must be made by means of reliable methods. Clamped connections require the use of terminals with pinch protection.

The cable cross-section must be configured according to the current consumption of the devices used and to the line length.

Electrical limit values for the resistance of the relay contacts must not be exceeded. If necessary, appropriate measures must be taken to protect the contacts.

Inductive loads, such as magnets and drives, must be provided with appropriate spark quenching, e.g., a spark quenching diode (free-wheeling diode). Electromagnetic door retainers by Hekatron are already provided with spark quenching and reverse voltage protection.

The maximum voltage allowed to be applied to the terminal strips inside the door is 24 V DC.

6.2 SVK 47 electrical installation

Connecting the supply voltage and the batteries

A *Mains cable*
B *Battery connection cable*
C *3-A fuse holder*

❶ *Red*
❷ *Blue*
❸ *Yellow*

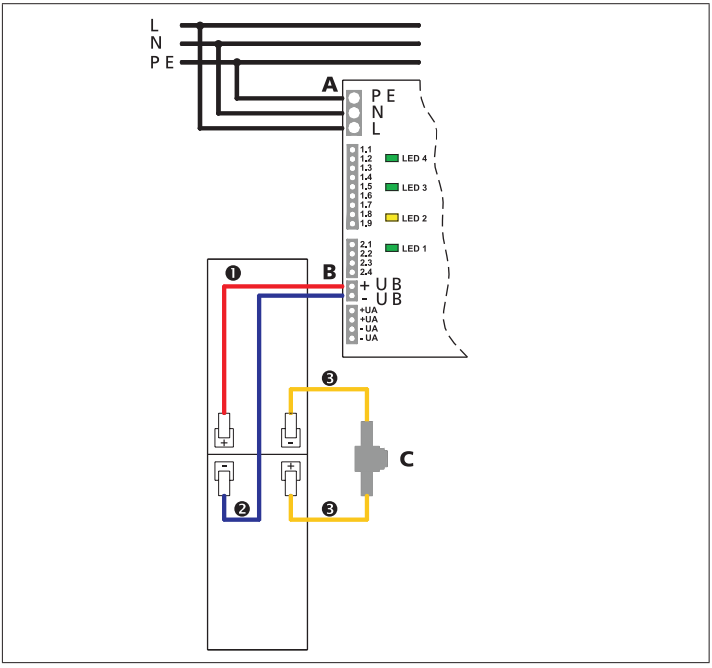


Fig. 13: Mains and battery connection

Run the mains cable through an opening on the top side of the housing using the supplied M20 cable gland.

Strip the mains cable **(A)** only directly in front of the provided connection terminals.

The battery connection cables **(B)** are connected to the power supply board SVK 47 at the factory.

During commissioning, connect the red cable +UB to the positive terminal of the upper battery.

During commissioning, connect the blue cable -UB to the negative terminal of the lower battery.

Connect the supplied 3-A fuse holder to the negative terminal of the upper battery and to the positive terminal of the lower battery using the yellow cables **(C)**.

Risk of injury and fire

Keep metal objects away from the terminals of the emergency power batteries. The batteries are charged on delivery. Short-circuits may cause strong electric arcs. This results in the risk of injury and fire.

6.3 SVK 47 connection

A *Mains connection 230 V AC*
B *Relay outputs*
- Mains
- Low voltage
- Collective fault
C *Battery connection*
D *24 V DC outputs*
E *Fuse 2 A 250 VT*
G *Operator panel connector*
F4 *LED 4 (green) The LED is lit while 230 V AC mains voltage is applied*
F3 *LED 3 (green) The LED is lit when the voltage is above 21 V*
F2 *LED 2 (red) The LED is lit in the event of a collective fault (battery failure, processor failure) See p. 26, table-01*
F1 *LED 1 (green) The LED is lit when the voltage is above 0 V (no short-circuit)*

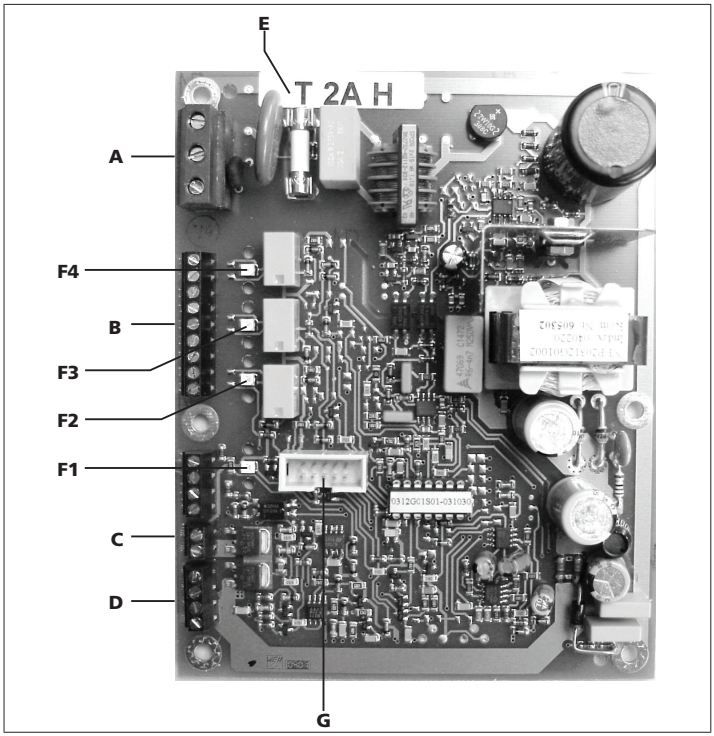


Fig. 14: SVK 47 connection

LED 2 (SVK 47)	LED fault (see Fig. 04 Operator panel TSK 03)	State	Measure
Off	Off	Operation	---
Off	On	Processor failure	Replace SVK 47
On	Off	Power failure	Check mains voltage
On	On	Battery failure	Test/exchange batteries

Table-01: Indicator matrix of LED 2 of the SVK 47 and the "Störung" LED (fault) on the front label

Mains cable

Strip the mains cable (A) only directly in front of the provided connection terminals.

Contact protection

Re-install the contact protection (transparent cover plate) over the power supply board before turning power on.

Mains connection

Labelling	Connection
PE	Mains protective conductor
N	Mains neutral conductor
L	Mains phase

Relay outputs

Labelling	Connection	State
1.1	Relay, mains voltage C	Common contact, potential-free
1.2	Relay, line voltage NO	Closed while 230 V AC mains voltage is applied
1.3	Relay, line voltage NC	Closed when 230 V AC mains voltage drops
1.4	Relay, low voltage C	Common contact, potential-free
1.5	Relay, low voltage NO	Closed while there is no total discharge
1.6	Relay, low voltage NC	Closed while there is total discharge
1.7	Relay, collective fault C	Common contact, potential-free (pre-wired in the version with TSK 03)
1.8	Relay, collective fault NO	Closed while there is a collective fault
1.9	Relay, collective fault NC	Closed while there is no collective fault (pre-wired in the version with TSK 03)

Internal connections

Labelling	Connection
2.1	Temperature sensor (already connected)
2.2	Temperature sensor (already connected)
2.3	+ SHUT (unused)
2.4	– SHUT (unused)

Battery connection

Labelling	Connection
+UB	Battery pos. terminal
–UB	Battery neg. terminal

24 V DC outputs

Labelling	Connection
+UA (pre-wired in the version with TSK 03)	Output voltage +24 V DC
+UA	Output voltage +24 V DC
–UA (pre-wired in the version with TSK 03)	Output voltage 0 V DC
–UA	Output voltage 0 V DC

6.4 TSK 03 installation

6.4.1 SVG 522 version with TSK 03

In the SVG 522 version with door control board TSK 03, the TSK 03 board has already been installed at the factory and is pre-wired as follows:

SVK 47	TSK 03
Terminal +UA (24 V DC)	Terminal 1
Terminal –UA (0 V)	Terminal 2
Terminal 1.4 (low voltage SVK 47)	Terminal 7
Terminal 1.9 (collective fault SVK 47)	Terminal 6
Terminal 1.5 to terminal 1.7	–

6.4.2 Subsequent installation of the TSK 03

The delivery includes six PCB holders for subsequent installation of the TSK 03.

The PCB holders must be inserted into the holes on the base plate of the SVG 522 that are provided for the TSK 03.

❶ *Slot for TSK 03*

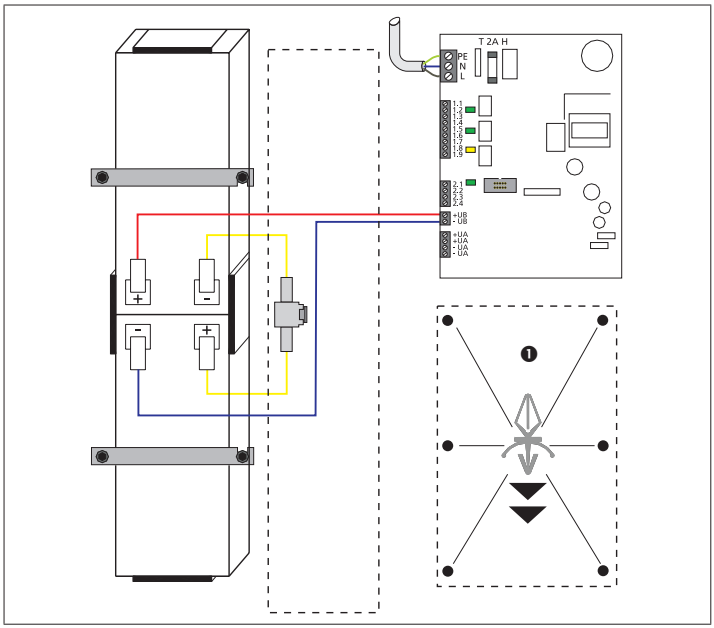


Fig. 15: Subsequent installation of the TSK 03

After the PCB holders have been installed, the TSK 03 must be fitted and clicked into place on the PCB holders.

The following connections must still be made:

1. SVK 47 connection to the TSK 03

SVK 47	TSK 03
Terminal +UA (24 V DC)	Terminal 1
Terminal –UA (0 V)	Terminal 2
Terminal 1.4 (low voltage SVK 47)	Terminal 7
Terminal 1.9 (collective fault SVK 47)	Terminal 6
Terminal 1.5 to terminal 1.7	–

2. TSK 03 ribbon cable connector to AFT 01

Fit the ribbon cable connector included in the delivery of the TSK 03 onto the connectors provided between the TSK 03 and the AFT 01 (inside the door).

(See also chapter 3.2 "Indicators" > PCB AFT 01.)

❶ *to AFT 01*

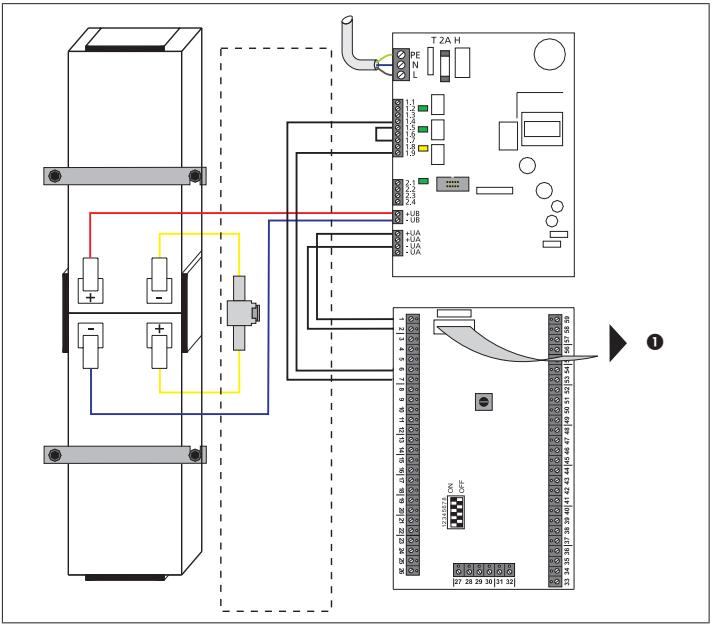


Fig. 16: Connecting the ribbon cable connector

6.5 TSK 03 connections

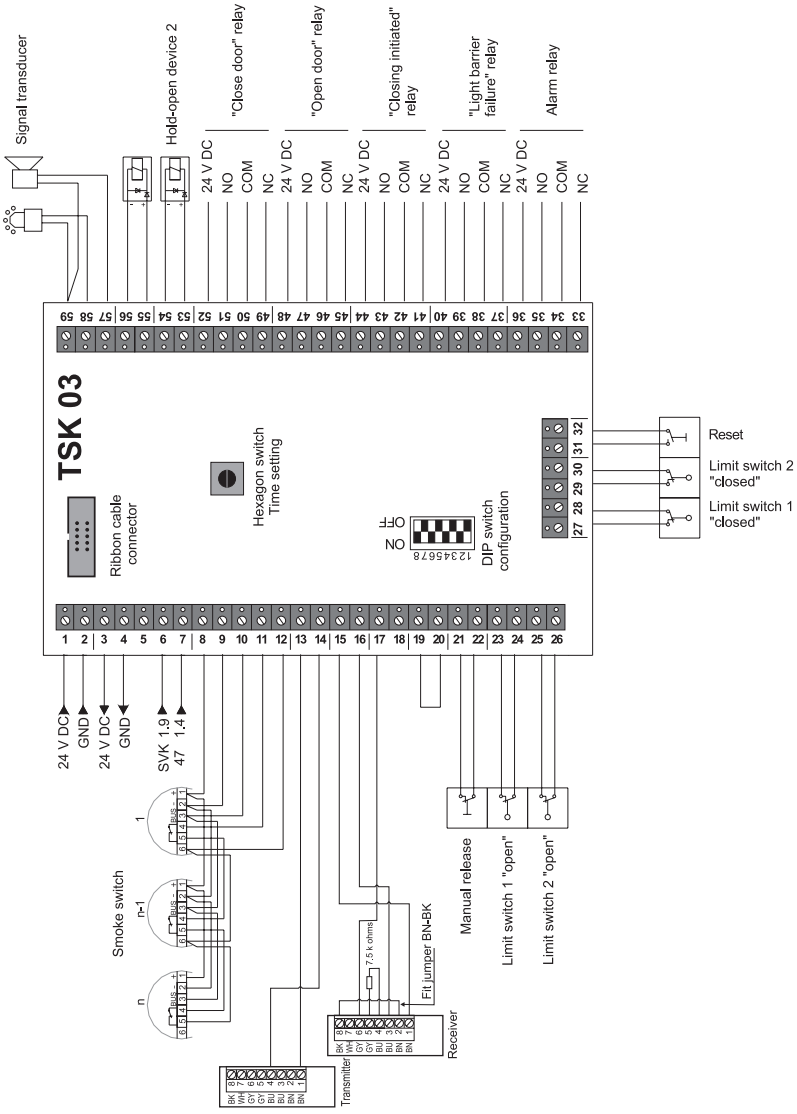


Fig. 17: Example of TSK 03 connection to a hold-open system at a path-bound conveying system

6.5.1 PCB TKS 03 voltage supply

Name	Data stream	Function	Data	Activation
Terminal 1	Input	TKS 03 voltage supply	24 V DC	SVK 47 +UA
Terminal 2	Input	TKS 03 voltage supply	GND	SVK 47 –UA

In the SVG 522 version with TSK 03, these connections have already been pre-wired at the factory.

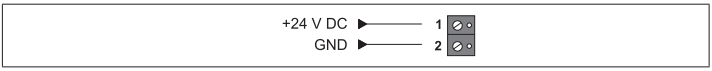


Fig. 18: Connections pre-wired at the factory

6.5.2 Incorporation of SVK 47 fault messages

Battery failure, processor failure and low battery voltage of the power supply board SVK 47 are signalled to the door control board TSK 03 and evaluated as an alarm from the fire detectors.

Name	Data stream	Function	Data	Activation
Terminal 3	Output	Voltage supply	24 V DC	Unassigned
Terminal 4	Output	Voltage supply	GND	Unassigned
Terminal 5	Unassigned	Connection point terminal	Unas-signed	Unassigned
Terminal 6	Output	Monitoring of SVK 47 faults		SVK 47 1.9
Terminal 7	Input	Monitoring of SVK 47 faults		SVK 47 1.4

In the SVG 522 version with TSK 03, these connections have already been pre-wired at the factory.

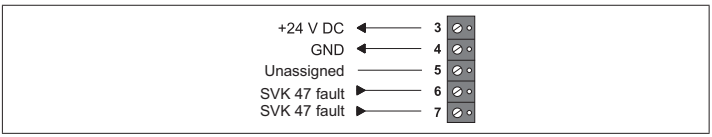


Fig. 19: Connections pre-wired at the factory

6.5.3 Connecting the automatic fire detectors

Name	Data stream	Function	Data	Activation
Terminal 8	Output	Voltage supply	24 V DC	e.g. ORS 142/ TDS 247
Terminal 9	Output	Voltage supply	GND	e.g. ORS 142/ TDS 247
Terminal 10	RS BUS	Connection point terminal	BUS	e.g. ORS 142/ RZA 142
Terminal 11	Output	Alarm contact monitoring		e.g. ORS 142/ TDS 247
Terminal 12	Input	Alarm contact monitoring		e.g. ORS 142/ TDS 247

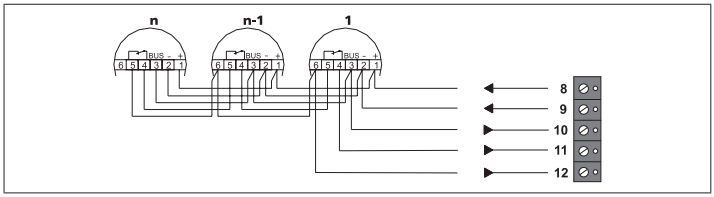


Fig. 20: Example of connecting the optical smoke switches ORS 142 or the thermal differential switches TDS 247; bus terminal 3 only for activation with smoke switch status indicator RZA

6.5.4 Connecting the light barriers

Name	Data stream	Function	Data	Activation
Terminal 13	Output	Voltage supply	24 V DC	Light barrier
Terminal 14	Output	Voltage supply	GND	Light barrier
Terminal 15	Output	Voltage supply	24 V DC	Light barrier
Terminal 16	Output	Voltage supply	GND	Light barrier
Terminal 17	Input	Light barrier evaluation		Light barrier
Terminal 18	Input	Light barrier evaluation		Light barrier

The function of the light barrier depends on the configuration of the TSK 03.

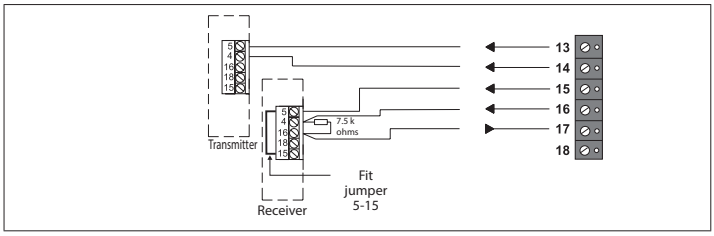


Fig. 21: ALS-FSA/LK 30-1503 – Active light barrier with transmitter and receiver/BEL predecessor light barrier

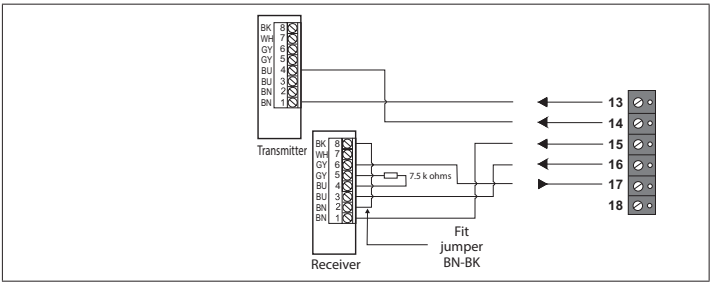


Fig. 22: BEL-FSA LA28/LK28-FC-Z/31/116
Active light barrier with transmitter and receiver

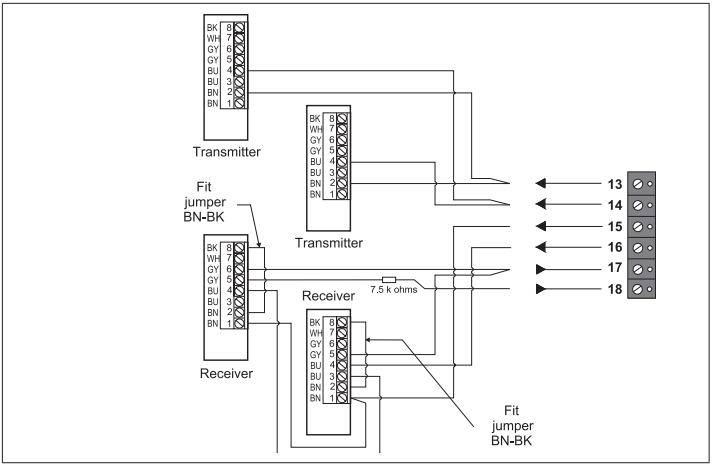


Fig. 23: BEL-FSA LA28/CK28-FC-Z/31/116 - Group circuit
Active light barrier, 2 transmitters and 2 receivers

Caution with group circuit

Only one light barrier section is monitored in this group circuit.

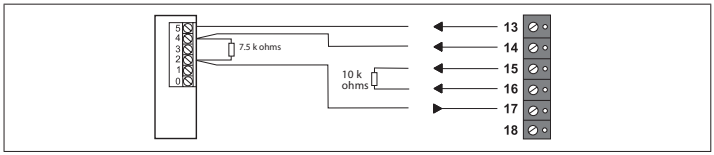


Fig. 24: RLS-FSA/RL24-55-2499–Reflection light barrier/BRL predecessor light barrier

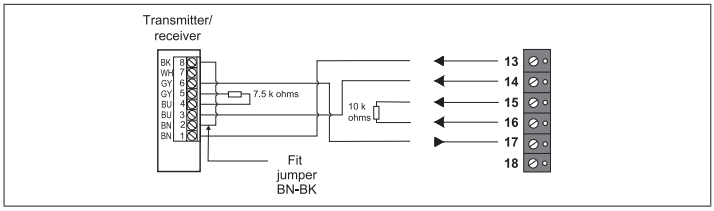


Fig. 25: BRL-FSA/RLK 28-FC-55-2/31/116 – Reflection light barrier

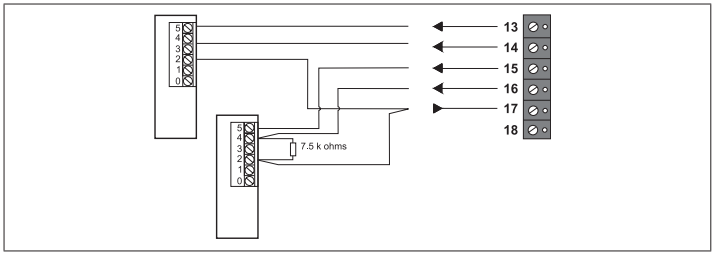


Fig. 26: Group circuit with 2 RLS-FSA/RL24-55-2499/BRL predecessor light barrier

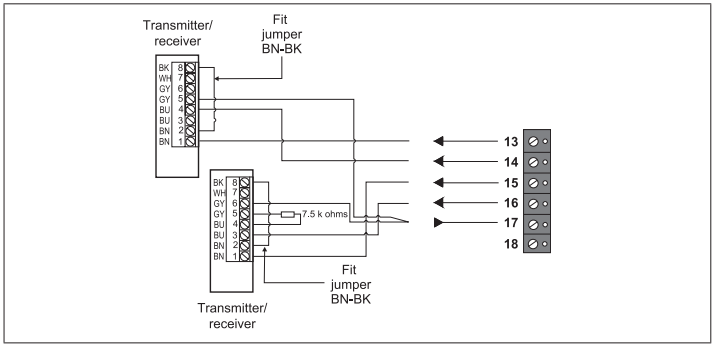


Fig. 27: Group circuit with 2 BRL-FSA/RLK 28-FC-55-2/31/116

Caution with group circuit!

Only one light barrier section is monitored in this group circuit.

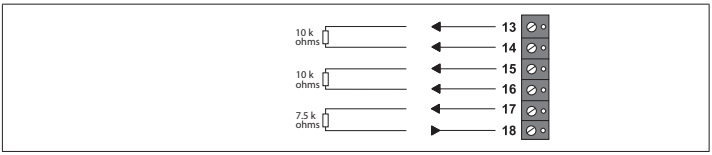


Fig. 28: Termination if there are no connected light barriers

6.5.5 Clearing control release

Release to close the door or gate using a potential-free contact

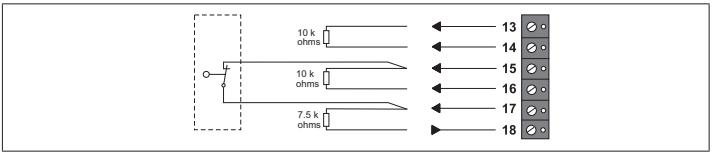


Fig. 29: Contact assignment; when light barriers are used, the potential-free contact must be applied in parallel. The line section should be kept as short as possible. No line monitoring!

Contact 15-17 open > release to close door/gate
Contact 15-17 closed > release not enabled

6.5.6 Connecting the "silent closing" manual release

Name	Data stream	Function	Data	Activation
Terminal 19	Input	Manual release monitoring (can be configured)		Manual release button
Terminal 20	Input	Manual release monitoring (can be configured)		Manual release button

The "silent closing" function depends on the configuration of the TSK 03.

The "silent closing" function with or without alarm triggering can be set using the DIP switch (see chapter 7.1 "Configuration").

DIP switch 4 set to **"ON"**:	DIP switch 4 set to **"OFF"**:
Contacts 19-20 open > **alarm relay** and **electromagnetic door retainer** are released	Contacts 19-20 open > **electromagnetic door retainer** is released
Contacts 19-20 closed > non-operating state, no alarm triggering	Contacts 19-20 closed > non-operating state, no alarm triggering

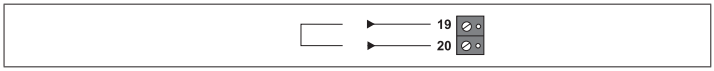


Fig. 30: Connection without manual release

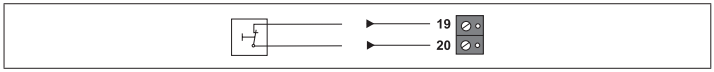


Fig. 31: Connection with manual release

When the "silent closing" button is pushed with or without alarm relay release, the optical signal transducer output is energised and, if personal protection is available, the light barrier is additionally evaluated. The delay is not taken into account (see chapter 7.1).

The system is automatically reset after 30 sec. This time period can be reduced by triggering the "Tür zu" (Close door) limit switch. According to DIBt specifications, a manual button must be installed in addition to "silent closing" (see chapter 6.5.7).

6.5.7 Connecting the "manual release" function

Name	Data stream	Function	Data	Activation
Terminal 21	Input	Manual release monitoring		Manual release button
Terminal 22	Input	Manual release monitoring		Manual release button

This manual release input has the same function as the release of the automatic fire detectors, chapter 6.5.3 (e.g. ORS 142/TDS 247).

Contacts 21-22 open > alarm triggering

Contacts 21-22 closed > non-operating state, no alarm triggering

Fig. 32: Connection without manual release

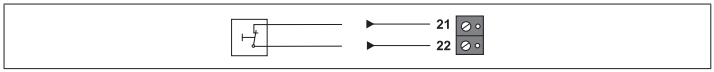


Fig. 33: Connection with manual release

6.5.8 Connecting the "Open door" limit switch

Limit switch for information "Open door"

Name	Data stream	Function	Data	Activation
Terminal 23	Input	Door 1 open monitoring		Limit switch
Terminal 24	Input	Door 1 open monitoring		Limit switch
Terminal 25	Input	Door 2 open monitoring		Limit switch
Terminal 26	Input	Door 2 open monitoring		Limit switch

These inputs are provided for monitoring the door by means of the door limit switches. The state is transferred to the display and operator panel. In addition, this information can be transferred using the "Open door" relay at terminals 45-48.

Function:

Contacts 23-24 and/or 25-26 open > signal "Open door" not applied.

Contacts 23-24 and 25-26 closed > signal "Open door" is applied.

If **no limit switches** are connected, the contacts remain **open**.

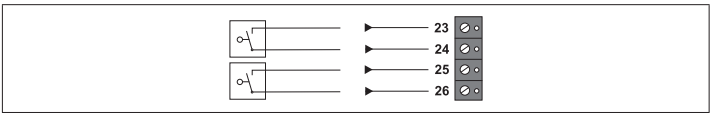


Fig. 34: Connection with two limit switches

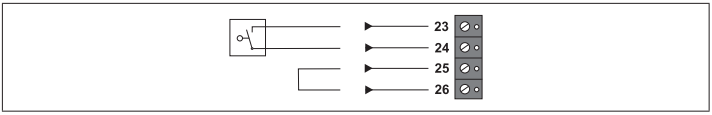


Fig. 35: Connection with one limit switch

6.5.9 Connecting the "closed" door limit switch

Limit switch for information "Close door"

Name	Data stream	Function	Data	Activation
Terminal 27	Input	Door 1 closed monitoring		Limit switch
Terminal 28	Input	Door 1 closed monitoring		Limit switch
Terminal 29	Input	Door 2 closed monitoring		Limit switch
Terminal 30	Input	Door 2 closed monitoring		Limit switch

After the "Close door" signal has been received from the limit switches, the audible signal transducer (terminals 57 and 59) are switched off automatically.

These inputs are provided for monitoring the door by means of the door limit switches. The state is transferred to the display and operator panel. In addition, this information can be transferred using the "Close door" relay at terminals 49-52.

Function:

Contacts 27-28 and/or 29-30 open > signal "Close door" not applied.

Contacts 27-28 and 29-30 closed > signal "Close door" is applied.

If **no limit switches** are connected, the contacts remain **open**.

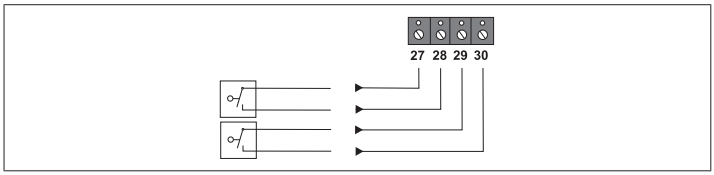


Fig. 36: Connection with two limit switches

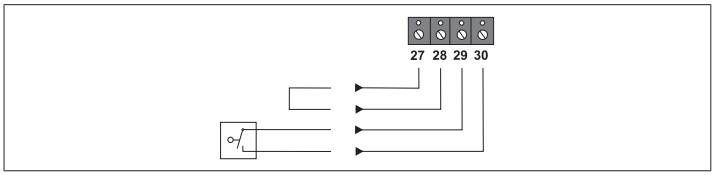


Fig. 37: Connection with one limit switch

6.5.10 Connecting the "external reset input"

Name	Data stream	Function	Data	Activation
Terminal 31	Input	TKS 03 reset		Optional button
Terminal 32	Input	TKS 03 reset		Optional button

Caution when using the reset button!

A reset should only be made after the system has been checked on site. We recommend to install any external reset button in the immediate vicinity of the monitored fire barrier.

This input is provided for an external reset option for the TSK 03, e.g., using the push-button DKT 02.

Function:

Contacts 31-32 open > "reset" signal not applied.

Contacts 31-32 closed > "reset" signal is applied.

If no external reset button is connected, the contacts remain open.

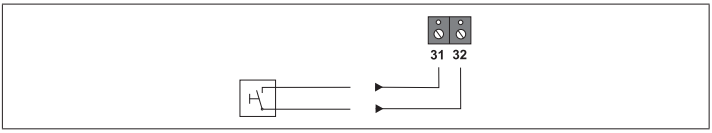


Fig. 38: External reset button connected

6.5.11 Connecting the "Alarm" relay

Name	Data stream	Function	Data	Activation
Terminal 33	Potential-free	Closed in the event of alarm, failure and voltage loss.	NC	Unassigned
Terminal 34	Potential-free	Common contact, max. 30 V DC 1 A	COM	Unassigned
Terminal 35	Potential-free	Open in the event of alarm, failure and voltage loss.	NO	Unassigned
Terminal 36	Output	Voltage drops in the event of alarm and failure.	24 V DC	Unassigned

Caution! Contact load!

The load of the relay contacts must not exceed 30 V DC 1 A.

The alarm relay can be used to individually transfer the alarm message. The relay drops out when an incoming alarm is triggered by the automatic fire detection element (terminals 11-12), a battery or processor failure (terminals 6-7), actuation of the manual release button (terminals 21-22) or actuation of the silent closing function with the "closing with alarm relay" configuration (terminals 19-20).

In connection with clearing systems, this signal is used to initiate the clearing operation.

For doors with top and side flaps this contact is used for switching the magnets of the flaps.

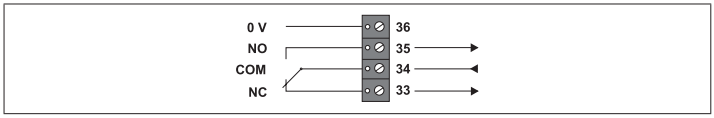


Fig. 39: Functional position in alarm state

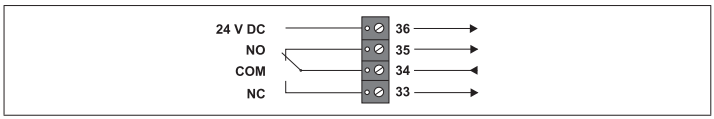


Fig. 40: Functional position in operating state; no alarm

If magnets are used without free-wheeling diode one of the supplied diodes must be connected to the magnet.

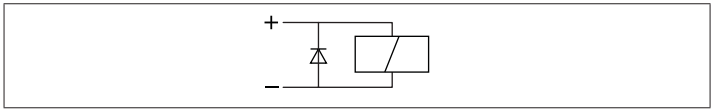


Fig. 41: Magnet with connected diode

6.5.12 Connecting the "Light barrier failure" relay

Name	Data stream	Function	Data	Activation
Terminal 37	Potential-free	Closed in the event of a failure or disabling of the light barrier	NC	Unassigned
Terminal 38	Potential-free	Common contact, max. 30 V DC 1 A	COM	Unassigned
Terminal 39	Potential-free	Open in the event of a failure or disabling of the light barrier	NO	Unassigned
Terminal 40	Output	The voltage drops in the event of a failure or disabling of the light barrier	24 V DC	Unassigned

Caution! Contact load!

The load of the relay contacts must not exceed 30 V DC 1 A.

The functional position "light barrier failure" depends on the configuration of the TSK 03.

The failure relay can be used for individual transfer. The relay drops out in the event of light barrier failure. In addition, the "light barrier disabled" signal (adjustable by means of DIP switches, see chapter 7.1 "Configuration") also initiates a fault message.

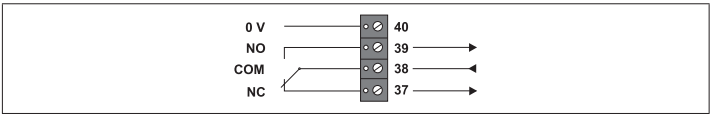


Fig. 42: Functional position in state "light barrier failure/light barrier disabled"

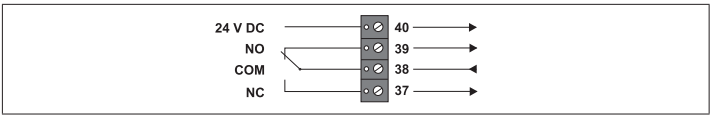


Fig. 43: Functional position in operating state; no failure or disabling of the light barrier

6.5.13 Connecting the "closing initiated" relay

Name	Data stream	Function	Data	Activation
Terminal 41	Potential-free	Closed when closing has been initiated	NC	Unassigned
Terminal 42	Potential-free	Common contact, max. 30 V DC 1 A	COM	Unassigned
Terminal 43	Potential-free	Open when closing has been initiated	NO	Unassigned
Terminal 44	Output	The voltage drops when closing has been initiated	24 V DC	Unassigned

Caution! Contact load!

The load of the relay contacts must not exceed 30 V DC 1 A.

The functional position "closing initiated" depends on the configuration of the TSK 03.

The "closing initiated" information can be used for individual transfer. The relay drops out when closing is being initiated. The contact is achieved simultaneously with the switch-off of the hold-open devices.

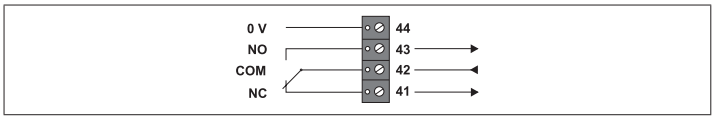


Fig. 44: Functional position in state "closing initiated"

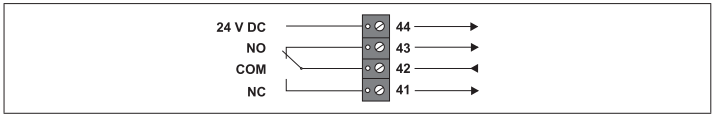


Fig. 45: Functional position in state "closing not initiated"

6.5.14 Connecting the "Open door" relay

Name	Data stream	Function	Data	Activation
Terminal 45	Potential-free	Open with signal input: "Open door" by limit switch	NC	Unassigned
Terminal 46	Potential-free	Common contact, max. 30 V DC 1 A	COM	Unassigned
Terminal 47	Potential-free	Closed with signal input: "Open door" by limit switch	NO	Unassigned
Terminal 48	Output	Voltage is applied with signal input: "Open door" by limit switch	24 V DC	Unassigned

The "Open door" information can be used for individual transfer. The relay drops out when the limit switches on terminals 23-24 and/or 25-26 are open.

Caution! Contact load!

The load of the relay contacts must not exceed 30 V DC 1 A.

The functional position "Open door" depends on the connected door limit switches.

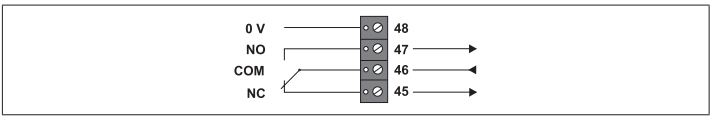


Fig. 46: Functional position in state "door not open" by limit switch

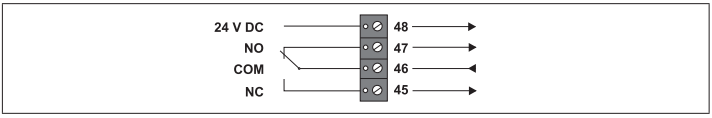


Fig. 47: Functional position in state "Open door" by limit switch

6.5.15 Connecting the "Close door" relay

Name	Data stream	Function	Data	Activation
Terminal 49	Potential-free	Open with signal input: "Close door" by limit switch	NC	Unassigned
Terminal 50	Potential-free	Common contact, max. 30 V DC 1 A	COM	Unassigned
Terminal 51	Potential-free	Closed with signal input: "Close door" by limit switch	NO	Unassigned
Terminal 52	Output	Voltage is applied with signal input: "Close door" by limit switch	24 V DC	Unassigned

Caution! Contact load!

The load of the relay contacts must not exceed 30 V DC 1 A.

The functional position "Close door" depends on the connected door limit switches.

The "Close door" information can be used for individual transfer. The relay drops out when the limit switches on terminals 27-28 and/or 29-30 are open.

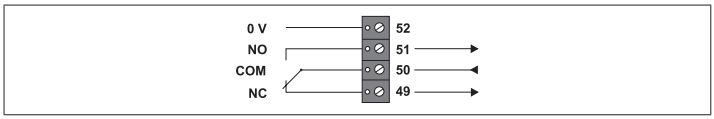


Fig. 48: Functional position in state "door not closed" by limit switch

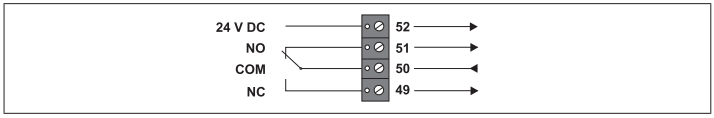


Fig. 49: Functional position in state "Close door" by limit switch

6.5.16 Connecting the "hold-open system"

Name	Data stream	Function	Data	Activation
Terminal 53	Output	Energisation of hold-open device 1	24 V DC	Electromag-netic retainer 1
Terminal 54	Output	Energisation of hold-open device 1	GND	Electromag-netic retainer 1
Terminal 55	Output	Energisation of hold-open device 2	24 V DC	Electromag-netic retainer 2
Terminal 56	Output	Energisation of hold-open device 2	GND	Electromag-netic retainer 2

The 24 V DC energisation on terminals 53 and 55 is switched off when the fire zone is released for closing after the set time has elapsed and the release signal of the light barrier has been given.

When the configuration "with personal protection" is selected, terminals 53 and 55 are re-energised if the light barrier is interrupted during the closing operation.

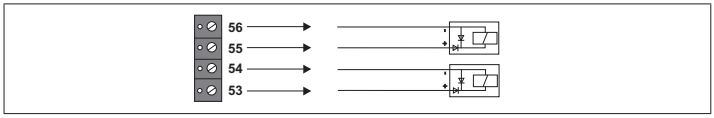


Fig. 50: Activation of hold-open device

If magnets are used without free-wheeling diode one of the supplied diodes must be connected to the magnet.

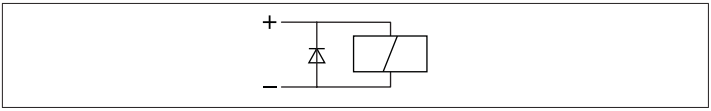


Fig. 51: Magnet with connected diode

6.5.17 Connecting the "external signal transducers"

Name	Data stream	Function	Data	Activation
Terminal 57	Output	Audible signal transducer	24 V DC	Siren
Terminal 58	Output	Visual signal transducer	24 V DC	Flash light
Terminal 59	Output	Common connection	GND	Siren and flash light

The 24 V DC energisation on terminals 57 and 58 is enabled when the manual release button on terminals 21 and 22 is actuated, when the smoke switches are triggered, in the event of a failure of the SVK 47, and in the event of a failure of the light barrier.

When "silent closing" on terminals 19 and 20 is actuated, the audible signal transducer terminal 57/59 is not energised.

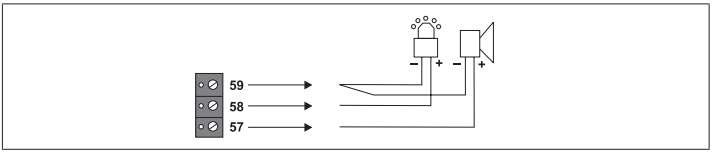


Fig. 52: Connecting the external signal transducer

6.6 FAK 01 connection

6.6.1 Installing the FAK 01

The delivery includes four PCB holders for installation of the FAK 01.

The PCB holders must be inserted into the holes on the base plate of the SVG 522 that are provided for the FAK 01.

❶ *Slot for FAK 01*

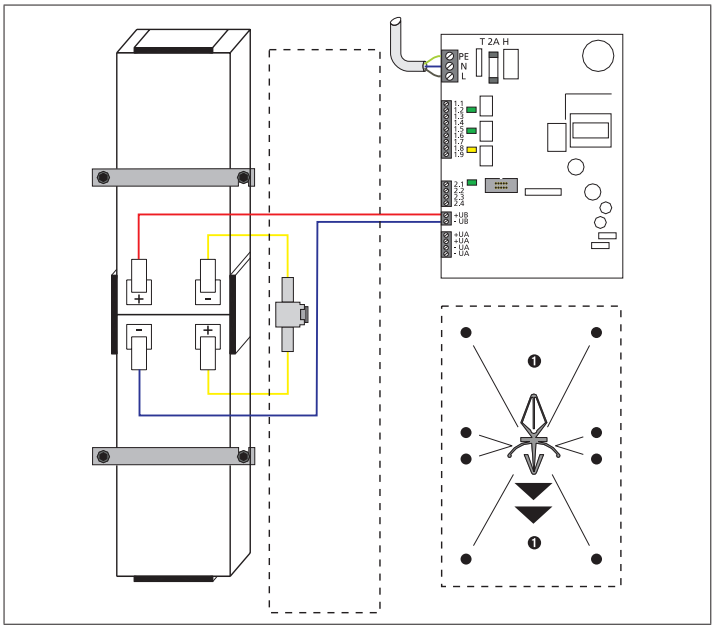


Fig. 53: Installing the FAK 01

After the PCB holders have been installed, the FAK 01 must be fitted and clicked into place on the PCB holders.

The following connections must still be made:

1. SVK 47 connection to the FAK 01

SVK 47	FAK 01
Terminal +UA (24 V DC)	Terminal + (lateral connection)
Terminal +UA (24 V DC)	Terminal + for optional 2nd FAK 01
Terminal –UA (GND)	Terminal – (lateral connection)
Terminal –UA (GND)	Terminal – for optional 2nd FAK 01

❶ *Up to 2 FAK 01 can be installed in the housing of the SVG 522*

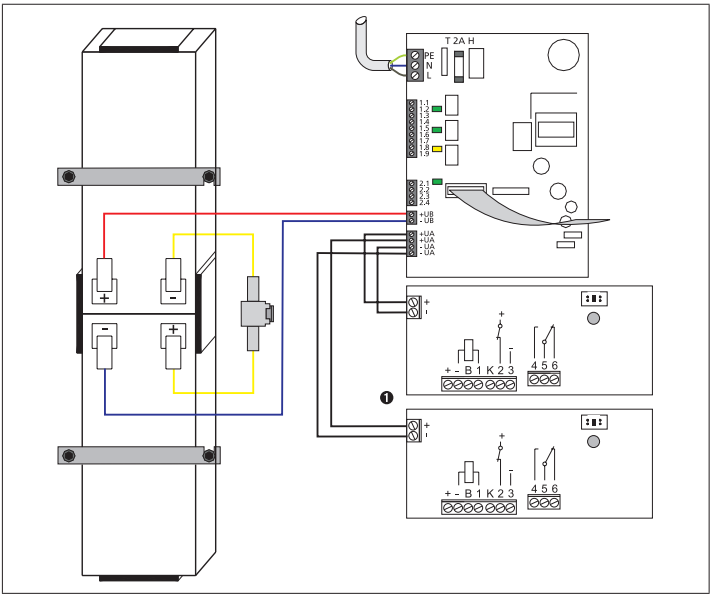


Fig. 54: Connecting the FAK 01 to the SVK 47

❶ *Lateral connector for voltage supply*

❷ *Peripheral equipment connection*

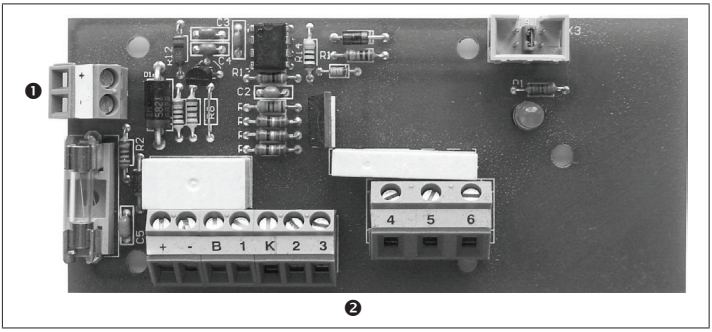


Fig. 55: FAK 01 connection terminals

6.6.2 Connecting peripheral equipment to the FAK 01

Name	Data stream	Function	Data	Activation
Terminal +	Output	Supply voltage	24 V DC	Fire detection element
Terminal –	Output	Supply voltage	GND	Fire detection element
Terminal B	Potential-free	Connection point terminal	None	Unassigned
Terminal 1	Input	Control voltage for alarm relay	24 V DC	Fire detection element/ manual release button
Terminal K	Potential-free	Connection point terminal	None	Unassigned/ optional manual release button
Terminal 2	Output	Energisation of hold-open device switched	24 V	E.g., electro-magnetic retainer
Terminal 3	Output	Energisation of hold-open device fixed	GND	E.g., electro-magnetic retainer
Terminal 4	Potential-free	Open with signal input "no alarm"	NC	Unassigned
Terminal 5	Potential-free	Common contact, max. 30 V DC 1 A	COM	Unassigned
Terminal 6	Potential-free	Closed with signal input "no alarm"	NO	Unassigned

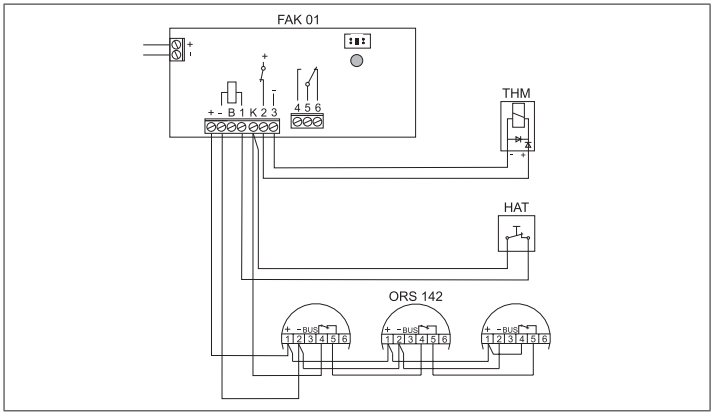
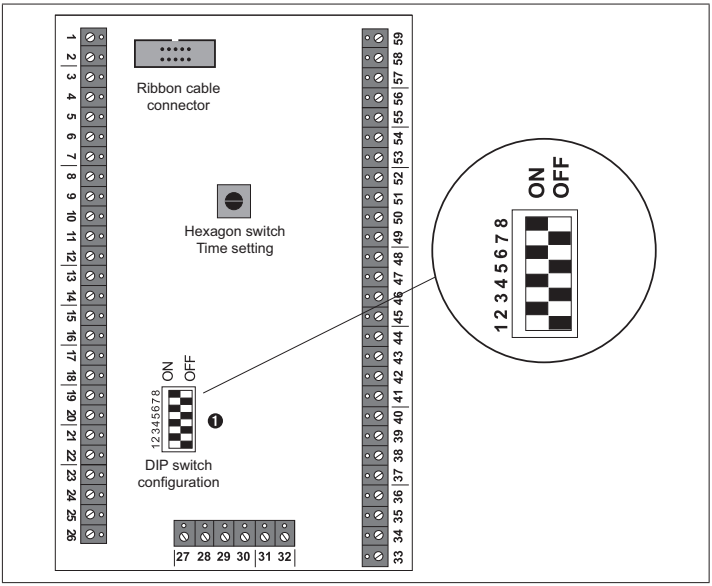


Fig. 56: Example of connecting the FAK 01 to a hold-open system

7 TKS 03 setting

7.1 Configuration



❶ *DIP switches for configuration*

Fig. 57: DIP switches on the TSK 03

The system can be configured as follows using the DIP switches on the TSK 03

❶ *Recommended settings*

DIP no.	Position		Function/configuration
DIP 6	ON	❶	Light barrier is checked in the event of controller failure
DIP 6	OFF		Light barrier is not checked in the event of controller failure
DIP 5	ON		No active light barrier or only one reflection light barrier connected
DIP 5	OFF		Active light barrier or two reflection light barriers connected
DIP 4	ON		Alarm relay drops out with "silent closing"
DIP 4	OFF		Alarm relay does not drop out with "silent closing"
DIP 3	ON		Fault message in the event of disabled light barrier after 10 min
DIP 2	OFF		
DIP 3	OFF	❶	Fault message in the event of disabled light barrier after 2 min
DIP 2	ON	❶	
DIP 3	ON		No fault message in the event of disabled light barrier
DIP 2	ON		
DIP 1	ON		System with personal protection
DIP 1	OFF		System without personal protection

DIP switches 7 and 8 are without function

Systems with personal protection

When this configuration is selected, the hold-open devices (e.g., door drives) are re-activated if the light barrier is interrupted during the closing operation. Both the external and internal signal transducers are energised during this interruption. In addition, the "light barrier failure" relay is activated. The closing operation is continued once the light barrier is no longer interrupted.

When the configuration with personal protection is selected, the hold-open system is re-energised when the light barrier is interrupted, even if the "fault message with disabled light barrier" is set.

Systems without personal protection

When this configuration is selected, the hold-open devices (e.g., electromagnetic retainers) are no longer activated during the closing operation when the light barrier is interrupted.

No fault message in the event of disabled light barrier

When this configuration is selected, a disabled light barrier is not evaluated. This setting is, e.g., used with light barrier sections that are aligned through the closing range. In this case, any intentional closing of the zone does not result in a failure.

Fault message of the disabled light barrier after 2 min

When this configuration is selected, a disabled light barrier is evaluated after 2 minutes. In addition, both the internal and external signal transducers are energised. The "light barrier failure" relay is activated. If an alarm is received after the fault message, the fire zone is closed without scanning the light barrier.

This setting complies with VdS and should be used as a rule.

Fault message of the disabled light barrier after 10 min

If this configuration is selected, a disabled light barrier is evaluated after 10 minutes. In addition, both the internal and external signal transducers are energised. The "light barrier failure" relay is activated. If an alarm is received after the fault message, the fire zone is closed without scanning the light barrier. This setting is, e.g., used with light barrier sections that are interrupted for a prolonged time period as determined by the production flow.

The alarm relay drops out with silent closing

When this configuration is selected, the incoming alarm is evaluated as a fire alarm via connection terminals 19 and 20. The light barrier is scanned, the "alarm" and "closing initiated" relays are activated, the set time function is disregarded. In addition, the external visual signal transducer is energised. When the configuration with **personal protection** is selected, the hold-open device is re-activated if the light barrier is interrupted.

The alarm relay does not drop out with silent closing

When this configuration is selected, the incoming closing command is evaluated as "silent closing" via connection terminals 19 and 20. The light barrier is scanned, the "closing initiated" relay is activated, the set time function is disregarded. In addition, the external visual signal transducer is energised. When the configuration with **personal protection** is selected, the hold-open device is re-activated if the light barrier is interrupted.

When the manual release button is actuated via connection terminals 19 and 20 in this configuration, the light barrier section and the delay time are not checked. For this reason, the manual release button should be installed within sight of the fire barrier.

An additional manual release button must be provided, which performs the actual manual closing function with evaluation of the light barrier and delay time according to DIBt requirements.

No active light barrier connected/one reflection light barrier

This configuration is selected if no active light barrier is connected or if only one reflection light barrier is connected.

Active light barrier connected/two reflection light barriers connected

This configuration is selected if an active light barrier is connected or if two reflection light barriers are connected.

Light barrier is checked in the event of controller failure

When this configuration is selected, the light barrier section is also monitored in the event of a controller failure.

This setting should be used as a rule.

Light barrier is not checked in the event of controller failure

When this configuration is selected, the light barrier section is not monitored in the event of a controller failure.

7.2 Example configurations with personal protection

Fault message of a disabled light barrier after 2 minutes; alarm relay does not drop out with silent closing; a reflection light barrier is connected.

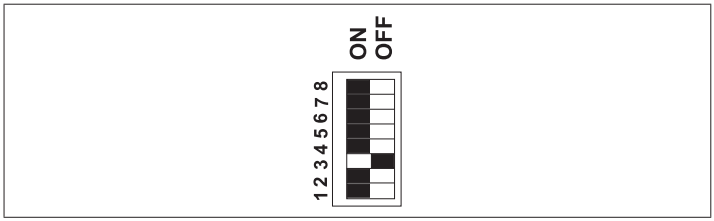


Fig. 58: DIP switches on the TSK 03, example configuration

Fault message of a disabled light barrier after 2 minutes; alarm relay does not drop out with silent closing; an active light barrier is connected.

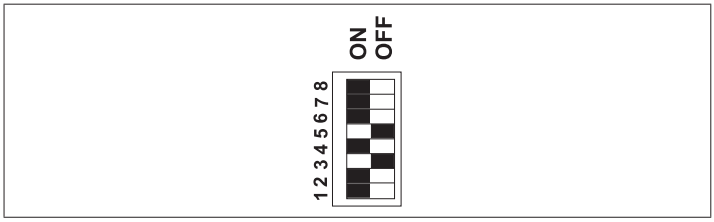


Fig. 59: DIP switches on the TSK 03, example configuration

7.3 Example configurations without personal protection

Fault message of a disabled light barrier after 2 minutes; alarm relay does not drop out with silent closing; a reflection light barrier is connected.

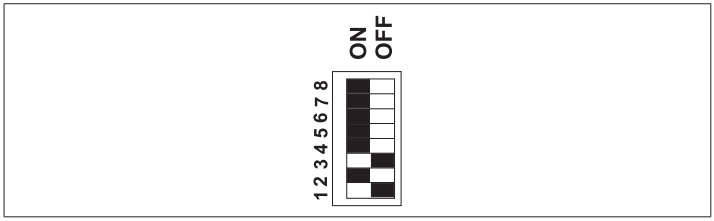


Fig. 60: DIP switches on the TSK 03, example configuration

Fault message of a disabled light barrier after 2 minutes; alarm relay does not drop out with silent closing; an active light barrier is connected.

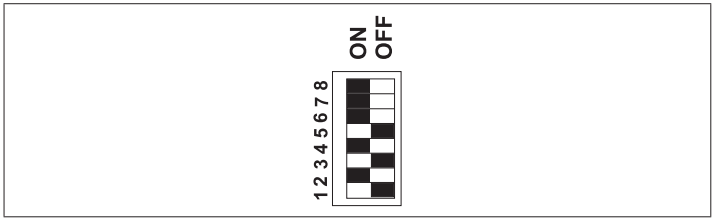


Fig. 61: DIP switches on the TSK 03, example configuration

7.4 Time setting on the TSK 03

Delay times are set by means of the rotary switch on the TSK 03. After an alarm is triggered, the alarm relay on the TSK 03 (terminals 33, 34, 35, 36), the siren and the flash light (terminals 57, 58, 59) are instantly energised. After the set time has elapsed, terminals 53/54 and 55/56 are de-energised.

❶ *Rotary switch for setting the delay*

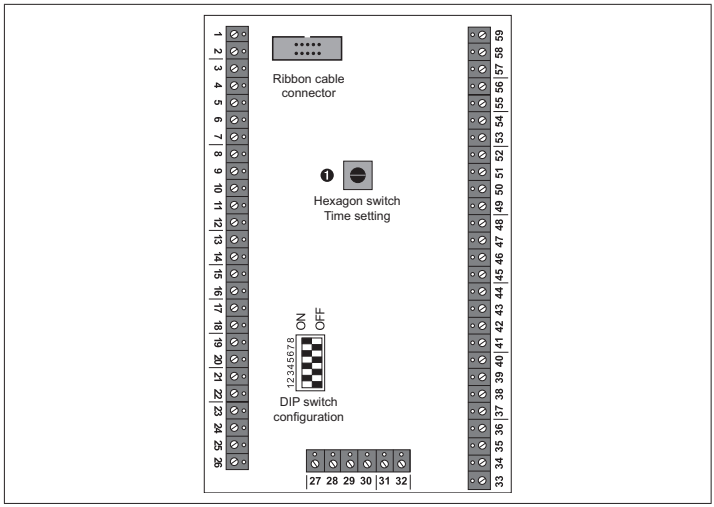
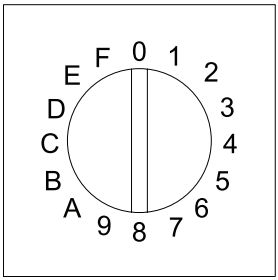


Fig. 62: TSK 03 time setting

If "silent closing" is released manually with or without alarm relay, the delay is disregarded.



Position	Delay
0	None
1	10 seconds
2	20 seconds
3	30 seconds
4	40 seconds
5	50 seconds
6	60 seconds
7	70 seconds
8	80 seconds
9	90 seconds
A	100 seconds
B	110 seconds
C/F	120 seconds
D	5 minutes
E	10 minutes

8 Commissioning and acceptance

8.1 Commissioning

It must be generally ensured that, while work is performed on the system, particularly during commissioning, any risk for persons or objects is prevented. Any work on the system must be coordinated with the owner/operator beforehand.

Before the system is commissioned, it must be visually inspected by an expert. The visual inspection includes a review of the system documentation with respect to completeness, availability and control, as well as of the as-built documents with respect to up-to-dateness. In addition, a target/actual performance comparison must be made, in which the used system components are compared with the system documentation in respect of type and quantity. Provided this inspection turns out to be successful, i.e., there are no deficiencies, the system and peripheral equipment must be checked for correct installation.

After visual inspection, the following steps must be taken consecutively: switch on the mains fuse, insert the battery fuse, commission the system. Provided commissioning has been completed successfully, the entire system must be subjected to a functional test.

The functional test is intended to check whether all devices cooperate as intended. It comprises:

- Check of the alarm configuration
- Test of the smoke switches
- Check of the light barriers
- Check of all control inputs and outputs
- Check of the controls required in the event of a fire

The smoke switches must be tested by simulating the relevant physical characteristic fire value. If the characteristic fire value is smoke, test aerosol 918/5 can be used.

External systems may only be activated together with the specialist companies involved and with the client's approval.

After completed commissioning, the results thereof should be seamlessly documented in a positive list and made available for acceptance of the system.

8.2 Acceptance

After a hold-open system has been installed ready for operation at the place of use, its proper function and installation according to instructions – including closing range monitoring safety devices, if any are provided – must be verified in an acceptance test. The applicant for this general building inspectorate approval must point out that this test must be performed. The test must be initiated by the owner/operator. The acceptance test of hold-open systems at fire barriers may only be carried out by qualified personnel of the applicant for this general building inspectorate approval or by qualified personnel authorised by said applicant or by qualified personnel of a testing centre accredited by the DIBt in the course of the approval procedure. The acceptance test of hold-open systems at fire curtains may only be performed by the building inspectorate testing centres mentioned in the general building inspectorate approval for the fire curtain.

The acceptance test must at least include the following items:

1. It must be verified that the built-in devices of the hold-open system correspond to the devices specified in the general building inspectorate approval.
2. It must be verified that the labelling of the built-in devices corresponds to the labelling specified in the general building inspectorate approval.
3. The cooperation of all devices must be verified according to the general building inspectorate approval, wherein the devices must be triggered both by simulating the characteristic fire value underlying the functional principle of the detectors and by hand.
4. It must be verified that the closure is enabled for self-closing as soon as the hold-open system is no longer functional (e.g., due to removal of a detector or failure of mains current supply).

9 Maintenance

DIN 14677 is the maintenance standard for hold-open systems and specifies the time intervals and the qualification required for performing regular tests and maintenance measures. In its section on maintenance and servicing, the DIBt approval refers to DIN 14677. After 1 year without functional deficiencies, the functional test can also be performed every three months instead of once a month.

It is the obligation of the owner/operator to keep the hold-open system operational at any time and to inspect the system for correct functioning at regular intervals according to the approval document.

The commissioning and maintenance set, part no. 7001949, is available for documenting the completed checks and tests and their results.

Regular maintenance measures ensure safe and reliable functioning of the smoke switch on a continuing basis. It is therefore absolutely necessary to check the smoke switch at regular intervals. The Hekatron technical service or one of our partners are ready to support you.

Observe the manufacturer's documents!

For the purpose of maintaining and servicing the controls required in the event of a fire as well as the devices that are required in addition to the SVG 522 to ensure that the fire zone is reliably closed, the particular manufacturer's instructions must be observed.

Do not open the measuring chamber!

It is not allowed to open the measuring chamber of the smoke switches.

Fire detector tester FDT 533

The tester is used to test smoke detectors and smoke switches. The tester consists of a holder for a test aerosol cylinder and the release mechanics.

Test Aerosol 918/5

The test aerosol 918/5 is free from halogenated hydrocarbons (CFC and the like).

Observe the safety instructions!

Please be absolutely sure to observe the warning and safety information printed on the test aerosol cylinder!

9.1 Regular checks and maintenance

It is the obligation of the owner/operator to keep the hold-open system and each conveying system barrier operational at any time. In its section on maintenance and servicing, the DIBt approval refers to DIN 14677. After 1 year without functional deficiencies, the functional test can also be performed every three months instead of once a month.

In addition to the maintenance at the conveying system barrier, the batteries in the SVG 522 must be exchanged every 4 years according to the approval and modification document Z-6.5-1891 DIBt.
(Emergency power battery BA-7.2 Ah, part no.: 2 310 030)

It is not allowed to dispose of batteries along with domestic waste. After use, batteries may be returned free of charge to the vendor or the disposal points provided (e.g., municipal collection points or trade).

Monthly or quarterly functional test

The functional test of a hold-open system must at least include the following elements:

a) Manual release test (manual release button or, if allowed, by manually pushing the off button).
b) Release of the hold-open system by testing the fire detectors using the test procedures defined by the manufacturer of the fire detectors (e.g., smoke detectors by means of smoke detector testing device or heat detectors by means of heat detector testing device). When hold-open systems are of construction type 2, it must be ensured that the only intended use of the fire detectors to be tested is controlling the particular hold-open system.
c) Restoration of the fire detectors from the alarm state.
d) Check whether there are environmental influences which affect the proper functioning of the installed hold-open system.
e) Check whether the use in the immediate vicinity of the hold-open system affects the latter negatively (e.g., presence of dust or water vapour).
f) Check whether the function of the hold-open system is negatively affected by structural modifications and/or interactions with other trades in the immediate vicinity of the hold-open system (e.g., subsequent installation of intermediate ceilings) and whether the position of the fire detectors complies with the DIBt's directive on hold-open systems (FeststellanlagenRL) and the approval.
g) Check whether the fire and/or smoke barrier is released for automatic closing after triggering.

Annual check/maintenance:

Maintenance of a hold-open system must include the elements of a functional test and, additionally, the following elements:

a) Check for compliance with the documentation and the building inspectorate approval.
b) Cleaning the components of a hold-open system that are relevant for proper functioning, if they are soiled to such an extent that they might be negatively affected.
c) Preventive replacement of components of the hold-open system according to the manufacturer's specifications (e.g., fire detectors, batteries).
d) Check whether the hold-open system is triggered in the event of a power failure or, if necessary, check whether the hold-open system switches to a second uninterrupted power supply (e.g., battery).
e) Check whether the hold-open system is triggered in case a fire detector is removed.

10 Technical data of the SVG 522

10.1 SVK 47 power supply board

Nominal input voltage	230 V AC
Rated frequency	50 Hz
Power consumption	48 VA
Nominal output voltage	24 V DC
Residual ripple	max. 120 mV_{ss}
Output current	max. 1.3 A
Output power	31.2 W
Battery charging state monitored	Yes
Temperature-dependent charging state monitored	Yes
Low voltage message	< 23 V
Protection against total discharge of the batteries	< 20.7 V
Fault indication in case of	Power failure Battery failure Low voltage Earth fault
Potential-free changeover contacts for Low voltage Battery failure Power failure	 30 V DC/1 A or 120 V AC/0.5 A
Operating temperature	+5 °C to +40 °C
Primary fuse	250 V/2 A T
Safety class	I
Overvoltage category	II
Dimensions HxWxD	119 mm x 150 mm x 45 mm

10.2 TSK 03 door control board

Nominal voltage	24 V DC
Current consumption	max. 1 A
Relay contact resistance Switching voltage Switching current Switching power	 max. 30 V DC 1 A Switching power 30 W
Total number of terminals Inputs Outputs	59 27 32
Status indicator on keypad	5 LEDs
Operating/storage/transport temperature	+5 °C to +40 °C
Dimensions HxWxD	150 mm x 115 mm x 18 mm

10.3 Hold-open system socket/board FAD 01/FAK 01

Input voltage range	23 to 25 V DC
Nominal output voltage	24 V DC
Power consumption[1)]	30 mA
Output current	max. 900 mA
Relay	Changeover contacts, potential-free
Switching voltage[2)]	max. 250 V AC/30 V DC
Switching current[2)]	max. 5 A with AC/3 A with DC
Ambient operating temperature	+5 to +40 °C
Overvoltage category[3)]	II
Safety class	II
Dimensions	103 mm x 55 mm
Degree of contamination[3)]	2(P2)

[1)] plus 60 mA for SAB 04 with DKT 02

[2)] only applicable for ohmic load

[3)] according to DIN VDE 0110-1

11 Annex

11.1 Order data

11.1.1 Mains replacement equipment:

SVG 522 with TSK 03 (without batteries)	5 400 085-0210
SVG 522 without TSK 03 (without batteries)	5 400 085-0201

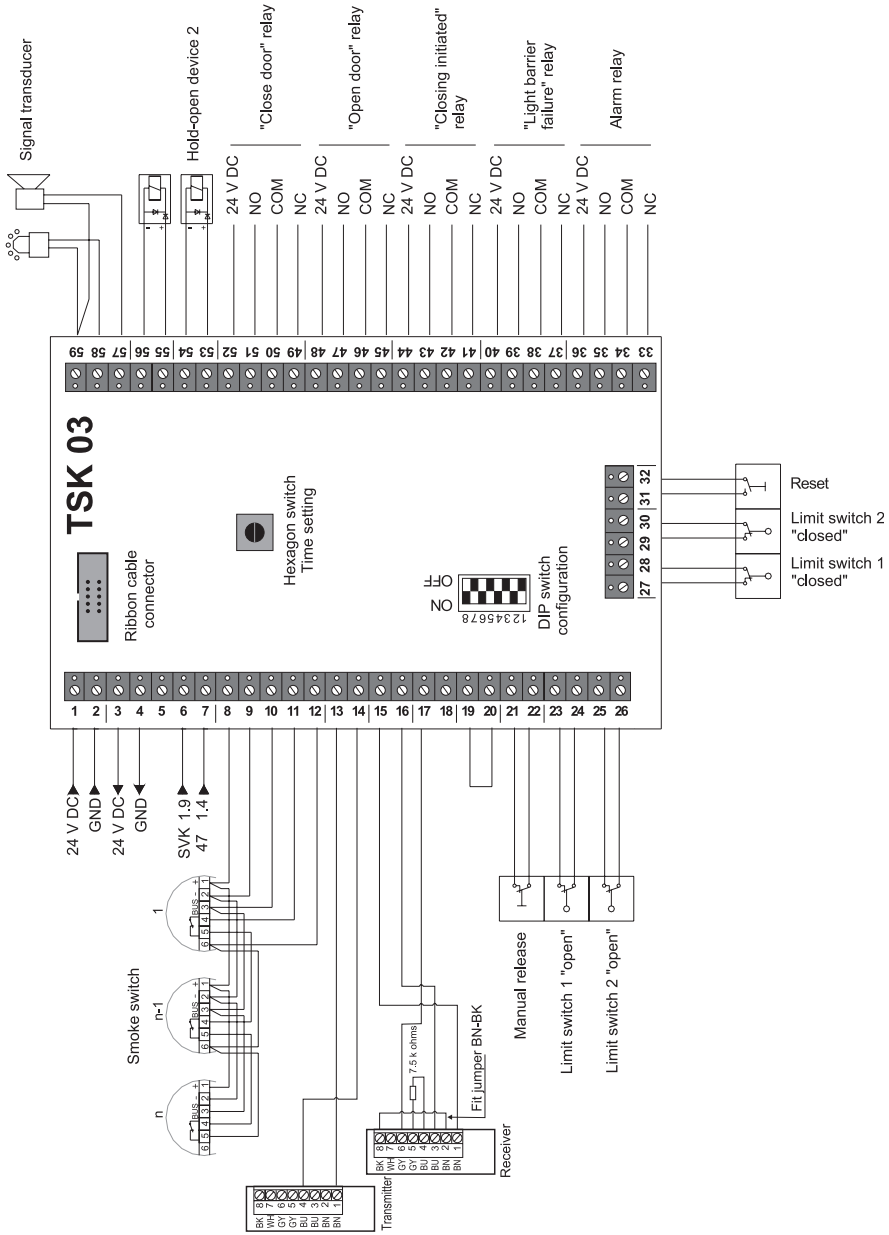
11.1.2 Accessories:

Emergency power batteries 12 V/7.2 Ah	30-2310002-01-xx
SVG 522 wall-mounting kit	6 100 038
TSK 03 door control board	5 300 680.0201
Hold-open system socket FAD 01	5 700 103
Hold-open system connection board FAK 01	6 300 116
Signal and display operator panel SAB 04	4 400 043

11.1.3 Peripheral equipment:

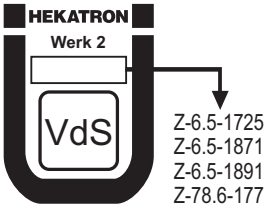
Reflection light barrier RLS FSA	6 900 358
Reflection light barrier BRL FSA	6 900 464
Active light barrier BEL FSA	6 900 462
Optical smoke switch ORS 142	5 000 552.0200
Optical smoke switch in the vicinity of lintels ORS 142 W	5 000 572
Thermal differential switch TDS 247	5 100 158
Design of the upper part of the smoke switch RNO 01 – white	4 300 736.0001
Design of the upper part of the smoke switch RNO 01 – silver	4 300 736.0002
Design of the upper part of the smoke switch RNO 01 – brass	4 300 736.0003
Design of the upper part of the smoke switch RNO 01 – stainless steel	4 300 736.0004
Standard design of the upper part of the smoke switch RNO 02 – white	4 300 735.0001
Standard design of the upper part of the smoke switch RNO 02 – silver	4 300 735.0002
Standard design of the upper part of the smoke switch RNO 02 – brass	4 300 735.0003
Standard design of the upper part of the smoke switch RNO 02 – stainless steel	4 300 735.0004
Mounting base AP 143 A	5 000 350
MultiColor mounting base 143 A MC	5 000 600.0291
Mounting base for lintel area 143 W	5 000 513
Mounting base for installation in damp rooms 143 AF	5 000 356
Mounting base for installation in hollow-section ceilings 143 AF	5 000 359
Bracket for lintel area K 143-S	3 510 232
Bracket for installation on cantilever arms K 143 K	3 510 233
Ball impact protection SRS 01	5 000 586

11.2 TSK 03 connections



11.3 Technical support and application support

Phone: +49 (0) 76 34 5 00-8050
Fax: +49 (0) 76 34 5 00-323
E-mail: rs-support@hekatron.de



Hekatron Vertriebs GmbH
Brühlmatten 9
D-79295 Sulzburg
Sales +49 (0) 7634 500-264
Techn. Support +49 (0) 7634 500-8050
Fax +49 (0) 7634 500-323
rs-info@hekatron.de
www.hekatron.de

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A member of the Swiss Securitas Group