

GEZE

hold-open device

FA GC 160



Instructions for installation, commissioning, operation and maintenance

RSZ6,

TS 4000 R, TS 4000 RFS, TS 4000 R-IS,
TS 5000 R, TS 5000 RFS, TS 5000 RFS KB,
TS 5000 R-ISM, TS 5000 R-ISM EFS

GB Wiring diagram

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EN 14637



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1 Key to symbols

Warning



In these instructions, warnings are used to warn against material damage and injuries.

- ▶ Always read and observe these warnings.
- ▶ Follow all instructions marked with the warning symbol and the word WARNING.

Warning symbol	Warning	Meaning
	DANGER	Danger for people. Non-observance can result in death or serious injuries.
–	CAUTION	Information to prevent damage to property and to understand and optimise workflow.

Further symbols used in these instructions

Important information and technical notes are emphasised to illustrate the correct operation.

Symbol	Meaning
	means "Important note"
	means "Additional information"
▶	Symbol for a user action. Here you have to take an action. ▶ Observe the sequence if there are several action steps.



Abbreviations

AL	Alarm	NO	Normally open contact
AS	Ceiling detector (additional sensor)	R	Electrical hold-open with lintel detector and power pack (hold-open system)
E	Electrical hold-open	RSZ	Smoke switch control unit
EMC	Electromagnetic compatibility	TS	Door closer
FA	Hold-open system	UTA	Breaker switch
FS	Free swing		
GC	GEZE		
GND	Reference potential (ground)		
HOD	Hold open device		
IS	Integrated closing sequence		
ISM	Integrated closing sequence (mechanical)		
KB	Transom mounting on hinge side		
LED	Light-emitting diode		
LK	Insulating screw joint		
MRB	Manual release button		
NC	Normally closed contact		

Colours

BK	Black
BN	Brown
BU	Blue
GN	Green
RD	Red
YE	Yellow
WH	White

2 Notes

- According to the definition of manufacturer's liability for his products in the Product Liability Act, the information contained in this brochure are to be followed. Ignoring this information absolves the manufacturer from his liability.
- For the safety of persons, it is important to follow these instructions.
- Follow the installation instructions for the hold-open system and its assemblies.
- When used in fire and smoke protection doors, all local regulations should be observed.
- Keep these documents.

2.1 Assembly and electrical connection of the hold-open device

- The assembly of the hold-open device should only be done by trained professionals. See installation instructions of the hold-open device.
- The connection of the hold-open device to the mains voltage must be performed by a qualified electrician.
- Hold-open devices should not trigger a fire alarm signal for the building.
- Only the devices approved in the certificate should be installed and connected.

2.2 Installation of lintel smoke switch

- Install the lintel smoke switch only after completion of construction at the time of the initial operation of the hold-open device.
- The lintel smoke switch is a sensitive electronic product and must be protected against electrostatic discharge:
 - Remove the protective packaging of the lintel smoke switch only immediately before installation.
 - Do not touch electronic components.
- Disconnect the power supply before installation of the lintel smoke switch.

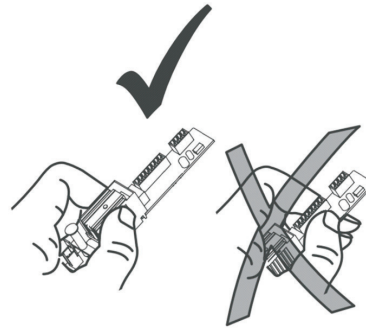


Fig.: 2.2.1

- The lintel smoke switch is clipped into the housing of the hold-open device.

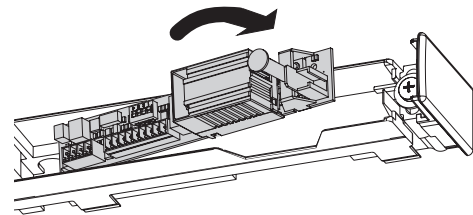


Fig.: 2.2.2

2.3 Protection of a lintel smoke switch against dirt accumulation

- The dust protection film or dust cover of a smoke switch should only be removed at the time of commissioning.
- After the installation of the smoke switch and removal of the dust cover, ensure that dust does not enter the measuring chamber. Otherwise it may result in increased dust accumulation that can significantly shorten the service life of the smoke switch.
- The measuring chamber of a smoke switch should not be opened.

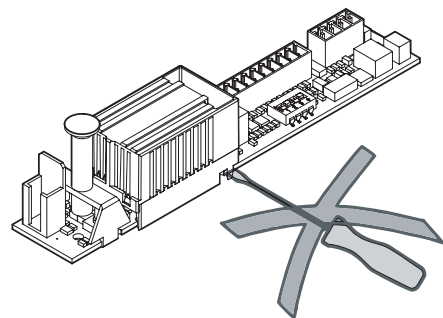


Fig.: 2.3.1

2.4 Waste disposal



The hold-open device consists of materials that should be given for recycling. For this purpose, the individual components are to be sorted according to their materials. The parts can be disposed of at the local recycling centre or through a scrap recycling company.

3 Hold-open device FA GC 160

3.1 Operation

Immediately after opening a fire or smoke protection door, it is again closed by the mounted door closer. This self-closing feature is overridden in a controlled manner by the hold-open device, so that a fire or smoke protection door can remain open indefinitely. In case of power failure, triggering of a fire alarm or activation by a button, an open door is closed by the door closer.

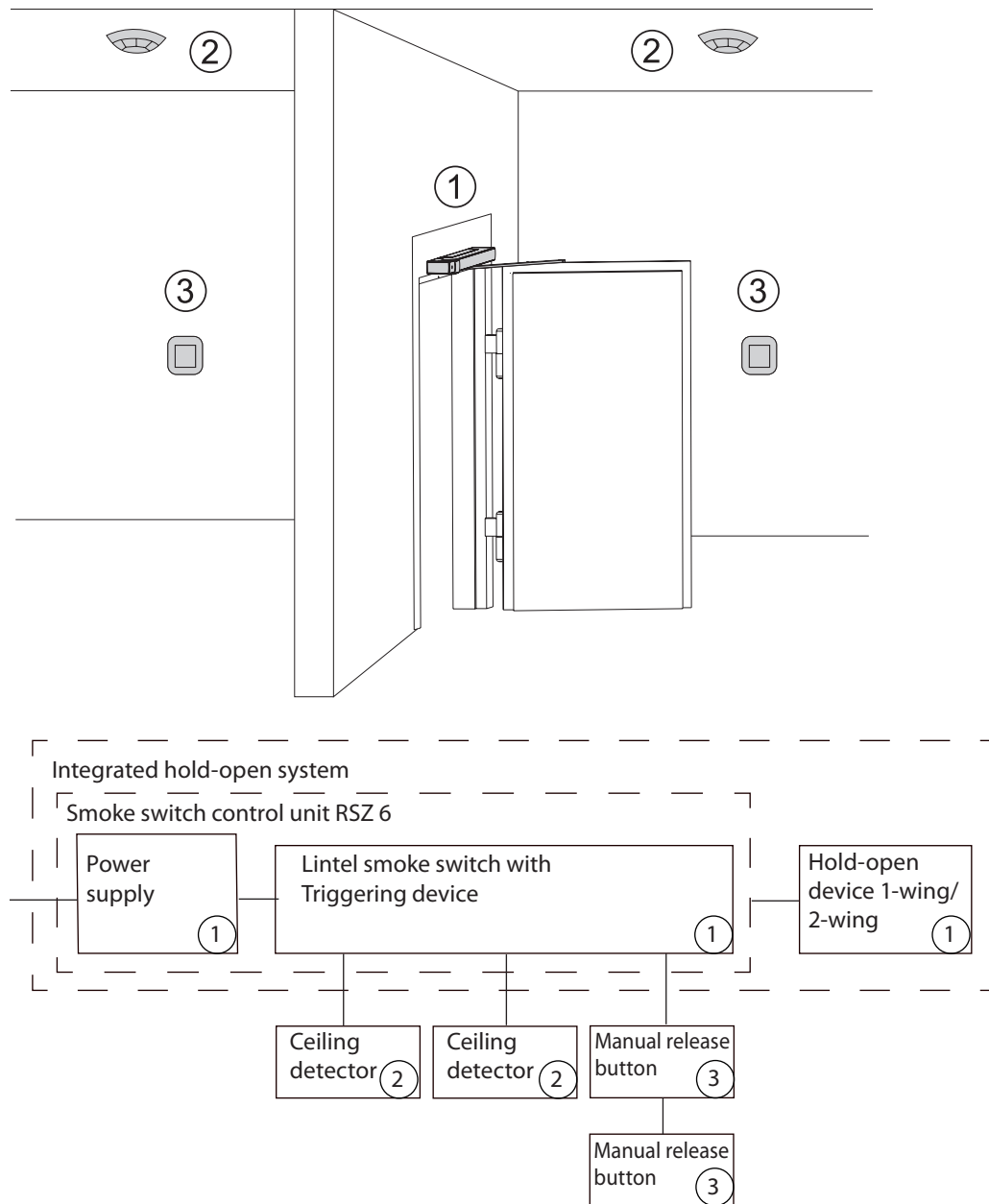


Fig. 3.1.1

3.2 Hold-open device with separate smoke switch control unit RSZ6

The hold-open device RSZ6 consists of:

- **Power supply (1)**
 - Power pack RSZ6
- **Lintel smoke switch with triggering device (1)**
 - GC 161
- **Ceiling detector (2)**
 - GC 162, Smoke detector with base
 - GC 163, Temperature sensor with base
- **Manual release button (3)**
 - UTA, breaker switch
- **Hold-open device (1)**
 - Overhead door closer**
 - TS 4000 E
 - Rods, electro-hydraulic hold-open device
 - TS 4000 EFS
 - Rods with free swing function, electro-hydraulic hold-open device
 - TS 4000 E-IS
 - Rods, 2-wing with integrated closing sequence, electro-hydraulic hold-open device for both wings
 - E guide rail
 - Electromagnetic hold-open device
 - E-ISM guide rail
 - 2-wing with integrated closing sequence, electromagnetic hold-open device for both wings
 - E-ISM/G guide rail
 - 2-wing with integrated closing sequence, electromagnetic hold-open device for the active wing
 - ISM-EFS guide rail
 - 2-wing with integrated closing sequence, electro-hydraulic hold-open device for the active wing with free swing function
 - TS 5000 EFS
 - Guide rail with free swing function, electro-hydraulic hold-open device
 - Integrated door closer**
 - E guide rail Boxer
 - Electromagnetic hold-open device
 - E-ISM guide rail Boxer
 - 2-wing with integrated closing sequence, electromagnetic hold-open device for both wings
 - ISM-EFS guide rail Boxer
 - 2-wing with integrated closing sequence, electro-hydraulic hold-open device for the active wing with free swing function
 - BOXER EFS
 - Guide rail with free swing function, electro-hydraulic hold-open device
 - Floor door closer**
 - TS 550 NV-E
 - Electro-hydraulic hold-open device
 - TS 550 E
 - Electromagnetic hold-open device
 - TS 550 E-IS
 - 2-wing with integrated closing sequence control, electromagnetic hold-open device
 - Holding magnet**
 - GT50R

3.3 Integrated hold-open device

In addition to the hold-open device with separate smoke switch control unit RSZ6, the following locking systems with integrated hold-open device are available for overhead door closers:

- **TS 4000 R**
Rods, electro-hydraulic hold-open device
- **TS 4000 RFS**
Rods with free swing function, electro-hydraulic hold-open device
- **TS 4000 R-IS**
Rods, 2-wing with integrated closing sequence, electro-hydraulic hold-open device for both wings
- **TS 5000 R**
Guide rail, electromagnetic hold-open device
- **TS 5000 R-ISM**
Guide rail, 2-wing with integrated closing sequence, electromagnetic hold-open device for both wings
- **TS 5000 R-ISM**
Guide rail, 2-wing with integrated closing sequence, electromagnetic hold-open device for the active wing
- **TS 5000 R-ISM-EFS**
Guide rail, 2-wing with integrated closing sequence, electro-hydraulic hold-open device for the active wing with free swing function
- **TS 5000 RFS**
Guide rail with free swing function, electro-hydraulic hold-open device
- **TS 5000 RFS-KB**
Guide rail with free swing function, transom mounting on hinge side, electro-hydraulic hold-open device

3.4 Classification according to EN 14637

GEZE	Hold-open device RSZ6	Serial No.		MM/JJJJ			Input 230 V AC 0.08A	
D-71229 Leonberg	CA Identification No. BWU33					Output 24 V DC 0.26A		
+49 (0)7152/203-0	EN 14637	3	8	1	1	1	3/4	IP 30

Item 1	Class 3	Application class	Frequent use by the public and other persons with little incentive to care
Item 2	Class 8	Continuous function	500,000 test cycles
Item 3	Class 1	Door type	Three-wing revolving doors
Item 4	Class 1	Suitability for use in fire and smoke protection doors	Suitable for use in fire and smoke protection doors
Item 5	Class 1	Safety	Meets all requirements of EN 14637
Item 6	Class 3	Corrosion resistance	High resistance according to EN 1670 (in conjunction with the holding magnets GT50R)
	Class 4		Very high resistance according to EN 1670 (in conjunction with all other GEZE hold-open devices)

3.5 Fire alarm and manual release button design

3.5.1 Smoke detector or temperature sensor

Smoke detectors recognise smoke. They operate on the principle of diffused light. A light emitter and a light receiver are arranged in the measuring chamber in such a way that normally no light falls on the receiver. If there are suspended particles (smoke) in the measuring chamber, this scatters a portion of the light on the receiver, which converts it into an electrical signal.

A smoke detector recognises not only smoke, but also all other suspended particles and is sensitive to pollution. Temperature sensors measure the ambient temperature and respond if the temperature exceeds a predetermined maximum value or increases dramatically within a certain time.

Usually smoke and fumes spread quickly in case of a fire. The rise in temperature occurs only after a delay.

That is why for fire doors on escape routes only smoke detectors should be used in hold-open devices. Smoke detectors should generally be used for hold-open devices as far as possible. In areas with interferences such as steam, dust, condensation or operation-related smoke emissions (workshops, kitchens), it makes more sense to use temperature sensors instead of smoke detectors.

3.5.2 Number and installation of the fire alarm

h Distance between the lower edge of lintel and ceiling or false ceiling (where there is a fire, a larger concentration of smoke is to be expected first).

 Lintel smoke switch

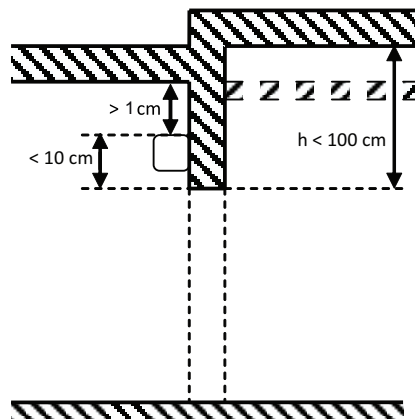
 Ceiling detector

A lintel smoke switch

- if the distance h on either side of the door is less than 100 cm

and

- if the opening width of the door is less than 300 cm



If necessary, smoke-permeable false ceiling

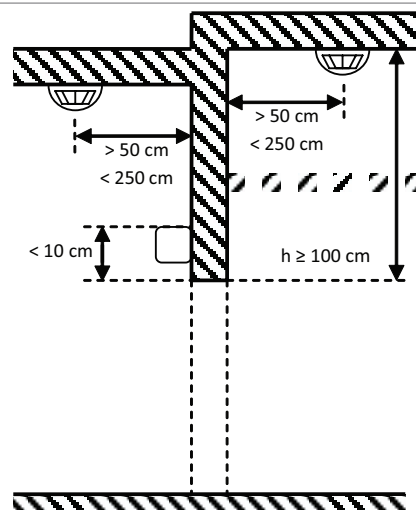
Fig.: 3.5.2.1

A lintel smoke switch and a ceiling detector on each side of the door

- if the distance h on at least one side of the door is more than 100 cm

or

- if the opening width of the door is more than 300 cm



If necessary, smoke-permeable false ceiling

Fig.: 3.5.2.2

Lintel smoke switch

- The lintel smoke switch is mounted directly above the door, above the active leaf for 2-leaf doors.



The installation of the lintel smoke switch is done in such a way that there is a gap of at least 1 cm between ceiling or door lintel and upper smoke outlet.

- The lintel smoke switch is only suitable for wall mounting; do not mount on the ceiling.



If the lintel smoke switch is exposed to disturbances such as steam, dust, condensation or operations-related smoke emission, it may be useful to cover the smoke chamber of the lintel smoke switch and instead, mount an additional temperature sensor as lintel smoke switch by means of a mounting bracket above the door (**not permitted in escape routes**).

Ceiling detector

- The ceiling detectors are mounted on the ceiling above the door, the distance to the wall is between 50 cm and 250 cm.
- If the distance *h* on one side of the door is greater than 500 cm, then the corresponding ceiling detector can be mounted on a cantilever 50 cm from the wall and at least 350 cm above the lower edge of the lintel.

3.5.3 Manual release button

Manual release button optional:

The hold-open devices

- TS 4000 E, TS 4000 E-IS
- E guide rail, E-ISM guide rail, E-ISM/G guide rail
- E guide rail Boxer, E-ISM E guide rail Boxer
- TS 550 NV-E, TS 550 E, TS 550 E-IS

and the hold-open systems

- TS 4000 R, TS 4000 R-IS
- TS 5000 R, TS 5000 R-ISM, TS 5000 R-ISM/G

can be activated manually, by closing the door wing by hand.

A manual release button can be installed optionally.

Manual release button is prescribed:

The hold-open devices

- TS 4000 EFS
- TS 5000 EFS
- ISM-EFS guide rail
- BOXER EFS, ISM-EFS guide rail Boxer
- GT50R

and the hold-open systems

- TS 4000 RFS
- TS 5000 RFS, TS 5000 RFS-KB, TS 5000 R-ISM-EFS



cannot be activated manually. Therefore, a manual release button should be mounted.

Installation of the manual release button

- Install the manual release button at an easily visible position in the immediate vicinity of the door (not hidden by the door wing).
- Installation height of the manual release button: 140 cm ± 20 cm.

4 Technical data

4.1 Hold-open device FA GC 160

Protection class (according to DIN EN 61140)	I 	II 
	TS 4000 R, TS 4000 RFS, TS 4000 R-IS, TS 5000 RFS KB	RSZ6, TS 5000 R, TS 5000 RFS, TS 5000 R-ISM, TS 5000 R-ISM EFS
Protection type (according to DIN EN 60529)	IP20, only for dry rooms	
Ambient temperature	-5°C to 50°C	

4.2 Guidelines

DIN EN 60950-1; VDE 0805-1:2011-01	Information Technology Equipment - Safety - Part 1: General Requirements
DIN EN 61000-6-2; VDE 0839-6-2:2006-03	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
DIN EN 61000-6-3; VDE 0839-6-3:2007-09	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments
DIN EN 1155:2003-04	Building hardware - Electrically powered hold-open devices for swing doors - Requirements and test methods
DIN EN 14637:2008-01	Building hardware - Electrically controlled hold-open systems for fire/smoke door assemblies - Requirements, test methods, application and maintenance
DIBt-guidelines	General requirements and test standards for the approval process for hold-open devices - July 2012 version
DIN EN 54-4:1997-12	Fire alarm systems - Part 4: Power supply equipment
DIN EN 54-5:2000-03	Fire alarm systems - Part 5: Heat sensors - Point-shaped detectors
DIN EN 54-7:2006-09	Fire alarm systems - Part 7: Smoke detectors - Point-shaped detectors according to the diffused light, transmitted light or ionisation principle
DIN 14677:2011-03	Maintenance of electrically controlled hold-open systems for fire protection and smoke barriers

4.3 Power pack

Power pack	
- Cable length 230V / 24V	130mm / 150 mm (Mat. No. 085391)
- Cable length 230V / 24V	90 mm / 65 mm (Mat. No. 103354)
- Cable length 230V / 24V	700 mm / 750 mm (Mat. No. 115818)
Input voltage	230 V AC +10 % / -15%, 50 Hz
Input current	Maximum 80 mA
Output voltage	24 ± 0.5 V DC
Output current	Maximum 260 mA

4.4 Lintel smoke switch GC 161

Lintel smoke switch GC 161	Mat. No. 140458
Functional principle	Diffused light, alarm threshold tracking, no alarm memory (self-resetting when there is no more smoke in the measuring chamber)
Input voltage	24 V DC
Input current	Maximum 15 mA
Installation position	Wall (lintel) installation, horizontal
Output hold-open device	Transistor output, short circuit proof Free-wheeling diode for inductive load Maximum 24 V, 200 mA In case of alarm, shutdown of the hold-open device for a minimum of 4 s
Additional detectors	Connect up to 3 ceiling detectors in 2-wire system Line monitoring by termination resistor (6.8 kΩ) at the end of the line
Manual release button	Line monitoring (can be disabled) by termination resistor (43 kΩ) at the end of the line With active line monitoring connect the manual trigger switch as closer, with inactive line monitoring connect the manual trigger switch as opener.
Alarm output	Potential free relay output, changeover contact maximum 24 V DC / maximum 1 A
Reset button	Shut-down of the hold-open device, as long as the button is pressed (for at least 4 s) Reset the smoke switch by pressing the button
Detector test	Alarm activation - with reset button - with test gas

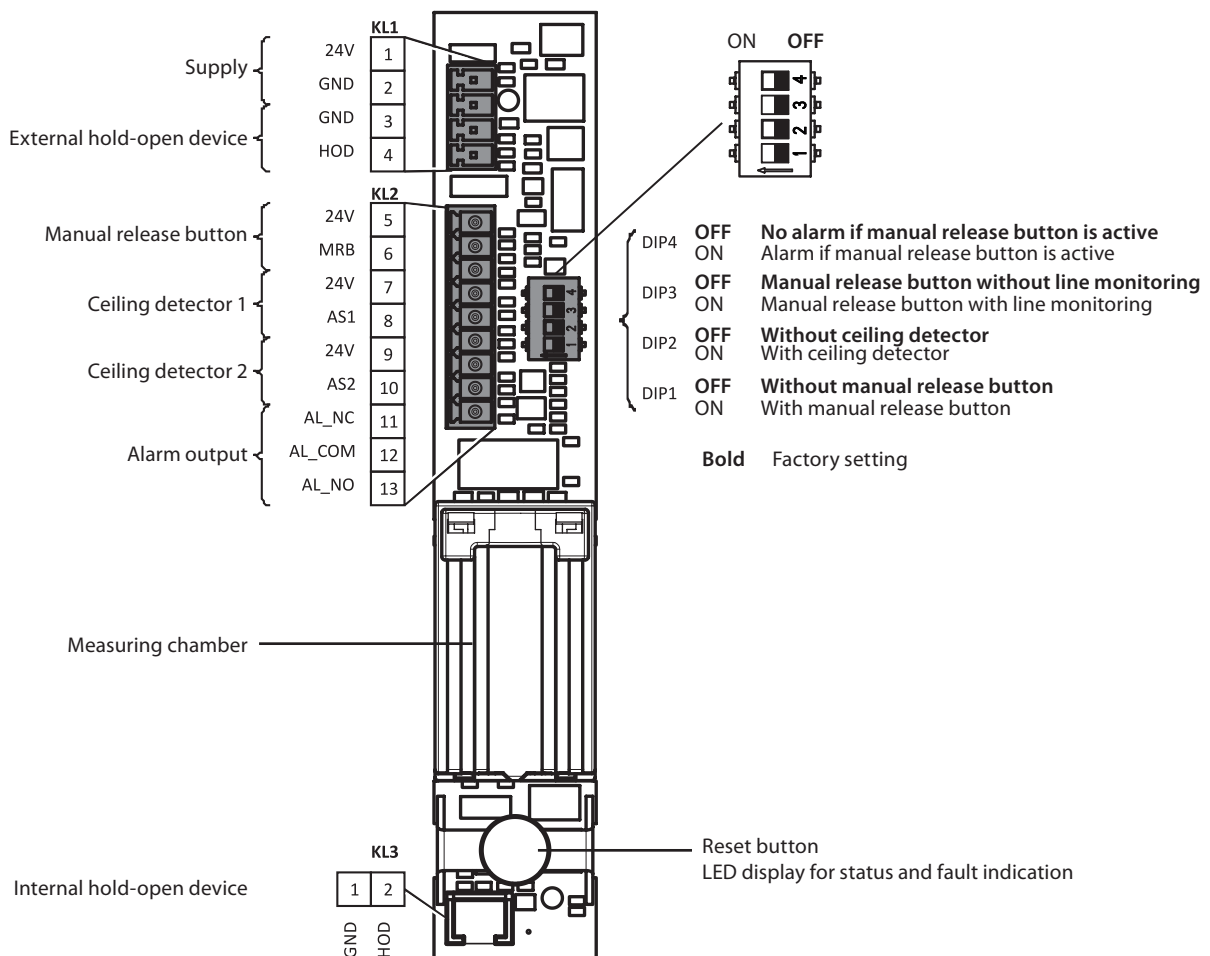


Fig. 4.4.1

Status / Error	LED	Alarm output	Locking output KL1: 3-4, KL3: 1-2
Without voltage	Off		0 V
Lintel smoke switch alarm Ceiling detector alarm	RD		0 V
Normal operation	GN		24 V
Dust accumulation (warning) The lintel smoke switch should be replaced.	RD GN		24 V
Dust limit is reached The lintel smoke switch should be replaced.	RD GN		0 V
Error lintel smoke switch The lintel smoke switch should be replaced.	RD off		0 V
Short circuit at locking output Separate lintel smoke switch from the supply voltage and eliminate the short circuit.	RD off		0 V
Supply voltage too low for lintel smoke switch Line breakage of manual release button¹⁾	RD off		0 V
Supply voltage too low for ceiling detector 1 Short circuit of ceiling detector 1 Ceiling detector 1 line breakage Ceiling detector 1 removed	RD off		0 V
Supply voltage too low for ceiling detector 2 Short circuit of ceiling detector 2 Ceiling detector 2 line breakage Ceiling detector 2 removed	RD off		0 V
Reset button actuated	YE		0 V
Manual release button actuated Short circuit of manual release button ¹⁾	YE	DIP4=OFF DIP4=ON	0 V

¹⁾ Indication only in case of line monitoring
Manual release button active (DIP3 = ON)

Tab. 4.4.1

4.6 Ceiling smoke detector GC 162

Smoke detector with base GC 162 consists of	Mat. No. 139882 Base GC 160 B Smoke detector GC 002 D
Smoke detector GC 002 D	Mat. No. 141458
Colour	white, RAL 9016
Dimensions (with base, DxH)	110 mm x 54 mm
Functional principle	Diffused light, alarm threshold tracking, no alarm memory (self-resetting when there is no more smoke in the measuring chamber)
Insect screen	prevents insects from entering the measuring chamber
Input voltage	24 V DC
Input current	Maximum 10 mA
Installation position	Ceiling mounting
Termination resistor	6.8 kΩ, integrated, separable
Alarm resistance	2.2 kΩ
Current increase principle	
- No alarm	3 mA
- Alarm	10 mA
Detector test	Alarm activation - with test magnet in the vicinity of the magnetic sensor (GEZE logo) - with testing gas

Signalling

	LED	Current consumption
Without voltage	Off	0 mA
Normal operation	Off	3 mA
Alarm	RD	10 mA

Tab. 4.5.1

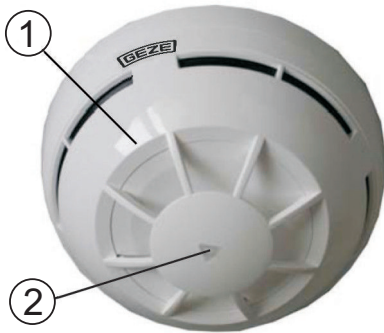


Fig. 4.5.1

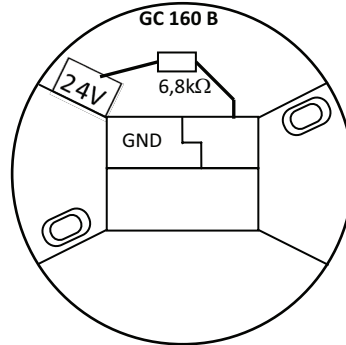


Fig. 4.5.2

- 1 Magnetic sensor for testing (behind GEZE logo)
- 2 LED for status indication

4.7 Ceiling temperature sensor GC 163

Temperature sensor with base GC 163 consists of	Mat. No. 139883 Base GC 160 B Temperature sensor GC 003 D
Temperature sensor GC 003 D	Mat. No. 141459
Colour	white, RAL 9016
Dimensions (with base, DxH)	110 mm x 54 mm
Functional principle	Alarm if ambient temperature exceeds the alarm temperature or if the ambient temperature increases very quickly, no alarm memory (self-resetting when the ambient temperature has fallen again)
Alarm temperature	57°C
EN 54-5 Class	A1R
Input voltage	24 V DC
Input current	Maximum 10 mA
Installation position	Ceiling mounting
Termination resistors	6.8 kΩ, integrated, separable
Alarm resistance	2.2 kΩ
Current increase principle	
- No alarm	3 mA
- Alarm	10 mA
Detector test	Alarm activation - with test magnet in the vicinity of the magnetic sensor (GEZE logo) - with heat detector test apparatus

Signalling

	LED	Current consumption
Without voltage	Off	0 mA
Normal operation	Off	3 mA
Alarm	RD	10 mA

Tab. 4.6.1

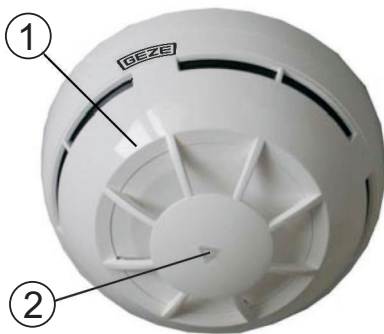


Fig. 4.6.1

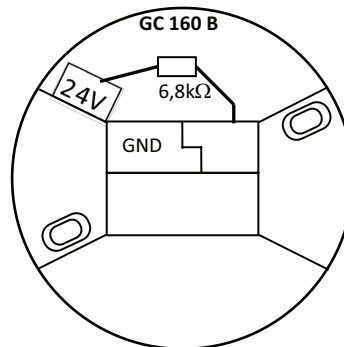


Fig. 4.6.2

- 1 Magnetic sensor for testing (behind GEZE logo)
- 2 LED for status indication

4.8 Manual release button UTA

Type	UTA, AS500
Breaker switch	Mat. No. 116266
Surface box	Mat. No. 120503
Circuit type	one changeover
Circuit voltage	Maximum 250V
Switching current	Maximum 10A
Termination resistor	43 k Ω

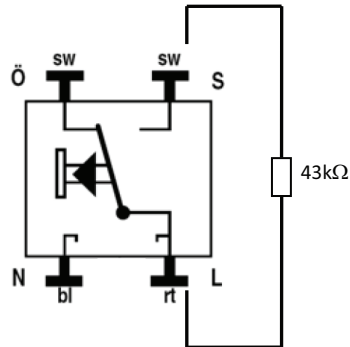


Fig. 4.7.1



5 Wiring diagram

- Observe the requirements for selection and installation of fire detectors and manual alarm button in chapter 3.5.
- Observe in addition the installation instructions of the respective hold-open device.
- The connection of the hold-open device to the mains voltage must be performed by a qualified electrician.
- Before carrying out work on the electrical system, disconnect voltage supply and check that it is free of voltage. If you use an uninterruptible power supply, the system is also under voltage with mains activation.
- Only use the specified cable types.
- Labelling of on-site cable in these instructions:
 - (1) NYM-J, 3x1.5 mm²
 - (2) NYM-O, 2x1.5 mm² or NYM-J, 3x1.5 mm²
 - (3) J-Y(ST)Y, 2x0.6 mm² or J-Y(ST)Y, 2x0.8 mm², maximum length less than 15 m
 - (4) J-Y(ST)Y, 2x0.6 mm² or J-Y(ST)Y, 2x0.8 mm², maximum length less than 6 m
 - (5) J-Y(ST)Y, 2x2x0.6 mm² or J-Y(ST)Y, 2x2x0.8 mm², maximum length less than 15 m
 - (6) J-Y(ST)Y, 2x2x0.6 mm² or J-Y(ST)Y, 2x2x0.8 mm², maximum length less than 6 m

Non-labelled connections are system cables, only these should be used.


- The cables should be adequately protected and secured mechanically.
- Insulate unused wires.

5.1 Mains connection

- The GEZE hold-open systems are devices of protection class I  and protection class II  according to DIN EN 61140.
- As a mains separation device, an on-site circuit breaker B 10 A should be used.
- The 230 V supply line is double insulated (with cable jacket), to be inserted at least 8 mm into the terminal area.
- Total current consumption in the power pack up to 260 mA.

5.1.1 Mains connection for protection class I

Power pack for	TS 4000 R, TS 4000 RFS, TS 4000 R-IS, TS 5000 RFS KB
Mat. No.	103354
Cable length 230V / 24V	90 mm / 65 mm

- Appliances of the protection class I  are connected with a three-core cable NYM-J, 3x1.5 mm². The ground wire is connected to the PE terminal.

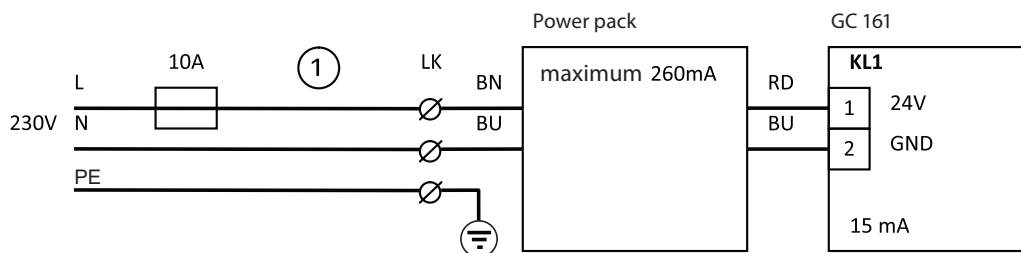



Fig. 5.1.1.1

5.1.2 Mains connection for protection class II 

Power pack for	Smoke switch control unit RSZ6	TS 5000 R, TS 5000 RFS, TS 5000 R-ISM, TS 5000 R-ISM-EFS
Mat. No.	085391	No. 115818
Cable length 230V / 24V	130 mm / 150 mm	700 mm / 750 mm

- Appliances of the protection class II  are connected with a two-core cable NYM-O.2x1.5 mm². The connection can also be done with a three-core cable NYM-J 3 x 1.5 mm². Then the ground wire should not be connected and must be insulated permanently (e.g. additional insulating screw joint or shrink tubing).

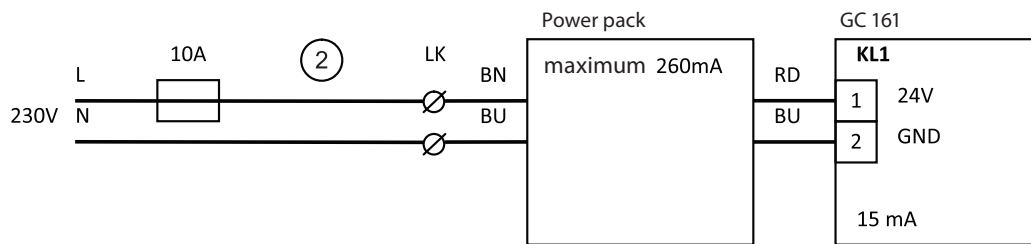


Fig. 5.1.2.1

5.2 Ceiling detector

- Observe the requirements on the selection and installation of ceiling detectors in chapter 3.5.
- When connecting ceiling detectors, set switch DIP 2 of the lintel smoke switch GC 161 to ON.

5.2.1 Ceiling detectors GC 162 and GC 163

- The ceiling smoke detector GC 162 consists of the smoke detector GC 002 D and the base GC 160 B.
- The ceiling temperature sensor GC 163 consists of the temperature sensor GC 003 D and the base GC 160 B.
- Ceiling smoke detector with base GC 162, Mat. No. 139882
Ceiling temperature sensor with base GC 163, Mat. No. 139883
Smoke detector GC 002 D, Mat. Nr. 141458
Temperature sensor GC 003 D, Mat. No. 141459

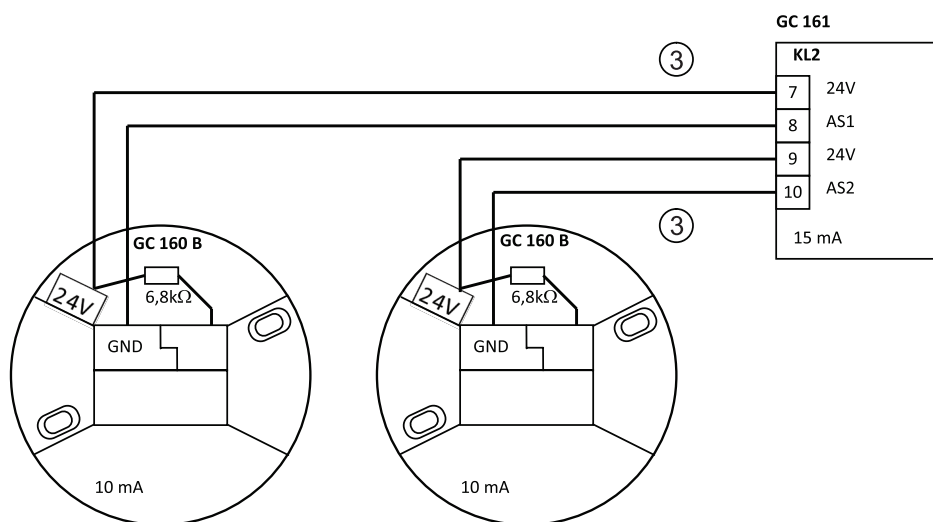


Fig. 5.2.1.1

Ceiling temperature detector GC 163 as lintel smoke switch

- If the lintel smoke switch GC 161 is exposed to disturbances such as steam, dust, condensation or operation-related fumes, it is reasonable to use a temperature sensor as lintel detector. See notes on this in chapter 3.5.
- An additional temperature sensor GC 163 as lintel detector mounted above the door with mounting bracket DM GC. See notes on this in chapter 3.5 (mounting bracket, white, RAL 9016, Mat.-No. 150264).
- Protect the smoke chamber of the integrated lintel smoke switch against dirt accumulation with dust cap (Mat. No. 146407).

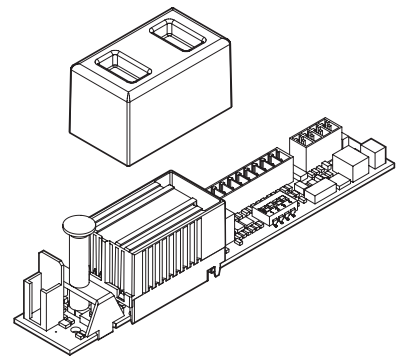


Fig. 5.2.1.2

Connecting a ceiling temperature sensor GC 163 as lintel detector

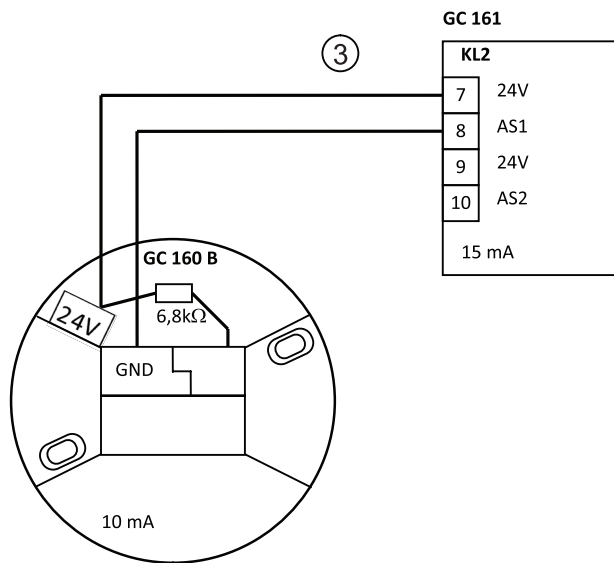


Fig. 5.2.1.3

Ceiling detector as lintel smoke switch

Connecting a ceiling temperature detector GC 163 as lintel smoke switch and two other ceiling detectors

- ! Remove termination resistor Ⓐ on the ceiling temperature detector GC 163.

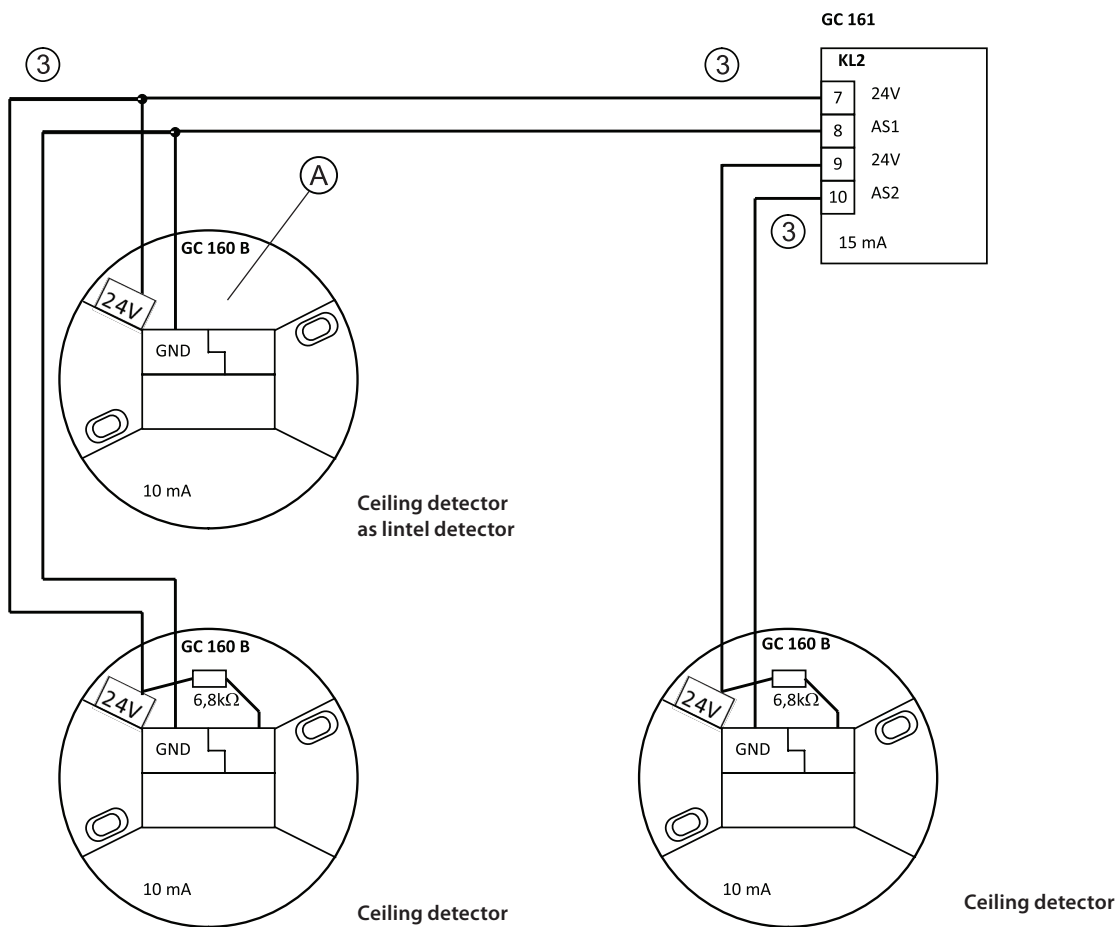


Fig. 5.2.1.4

5.3 Manual release button UTA

- Breaker switch UTA, AS500, Mat. No. 116266
- Surface cap 1-way, AS500, Mat. No. 120503
- When connecting a manual release button, set switch DIP 1 of the lintel smoke switch GC 161 to ON.
- Observe the requirements for the installation of manual release button in section 3.5.

5.3.1 Manual release button UTA with line monitoring

The building authority approval requires the line monitoring of the manual release button, if the connection to a manual release button is based on the stipulated standard (see chapter 3.5).

- ! The line monitoring is active, if:
- switch DIP3 of the lintel smoke switch GC 161 is set to ON (see chapter 4.4).
 - a 43 kΩ resistor is connected in parallel in the manual release button.

Connect manual release button as a closer.

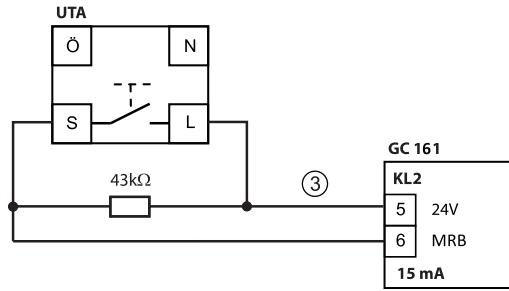


Fig. 5.3.1.1

Several manual release buttons can be connected in parallel. Connect 43 kΩ resistor only in the last one.

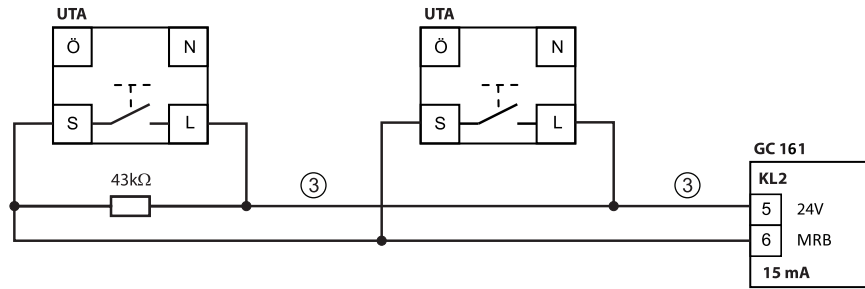


Fig. 5.3.1.2

5.3.2 Manual release button UTA without line monitoring



The monitoring is not active if:

- switch DIP3 of the lintel smoke switch GC 161 is set to OFF (see chapter 4.4).

Connect manual release button as an opener.

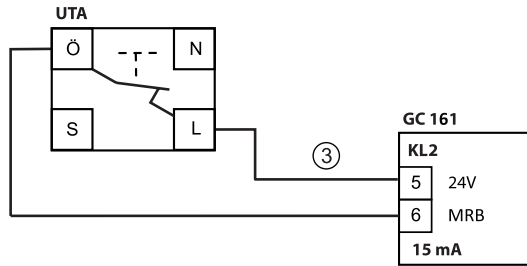


Fig. 5.3.2.1

Several manual release buttons can be connected in parallel.

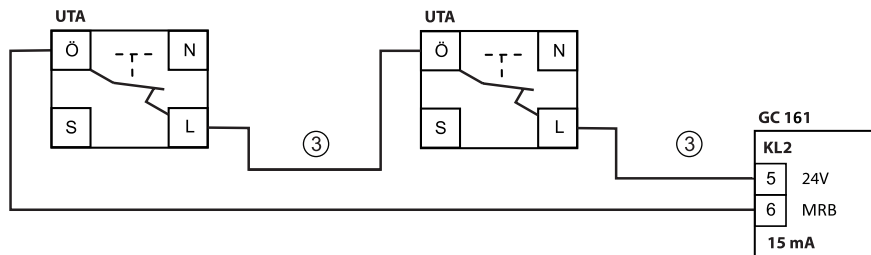
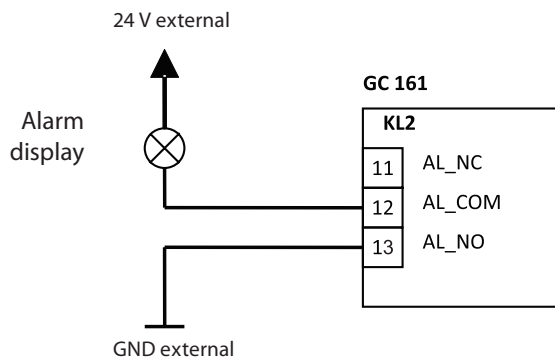


Fig. 5.3.2.2

5.4 Alarm output

- Potential free relay contact, changeover contact, up to 24 V, 1 A
- The contact 12-13 is open in normal operation, closed in case of power failure or alarm.
- Do not supply alarm display from the hold-open system.



Whether the alarm output is switched when operating the manual release button is set with the button DIP4 of the lintel smoke switch GC 161. (DIP4 = ON: Alarm upon actuation of the release button)

Fig. 5.4.1

5.5 Hold-open device

- External hold-open devices are connected to KL1 of the lintel smoke switch (screw-plug terminal).
- Internal hold-open devices are connected to KL3 of the lintel smoke switch (system connector).

5.5.1 Hold-open device RSZ6

Door closers TS 4000 E, TS 4000 EFS

Door leaf mounting

- Junction box with pluggable cable transition, Mat. No. 052105

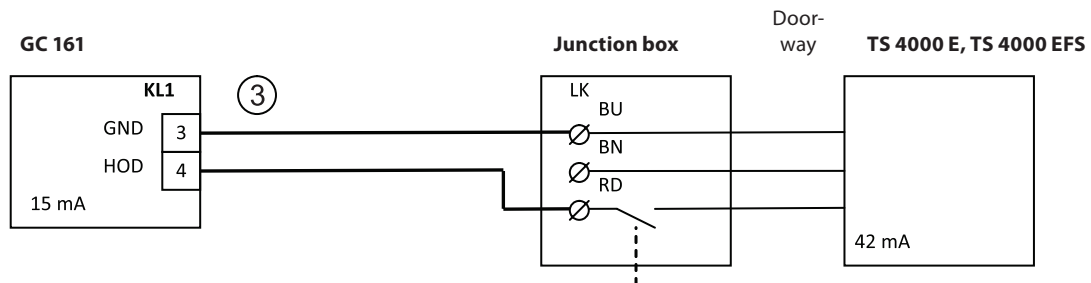


Fig. 5.5.1.1

Transom mounting

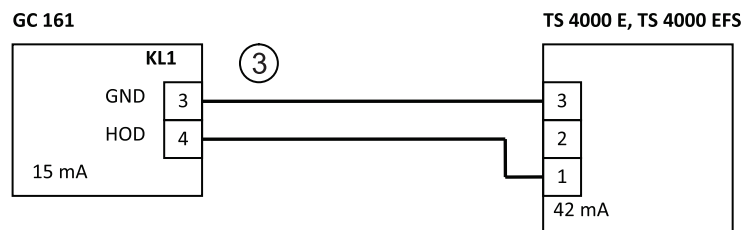


Fig. 5.5.1.2

Door closer TS 4000 E-IS

Door leaf mounting

▫ Junction box with pluggable cable transition, Mat. No. 052105

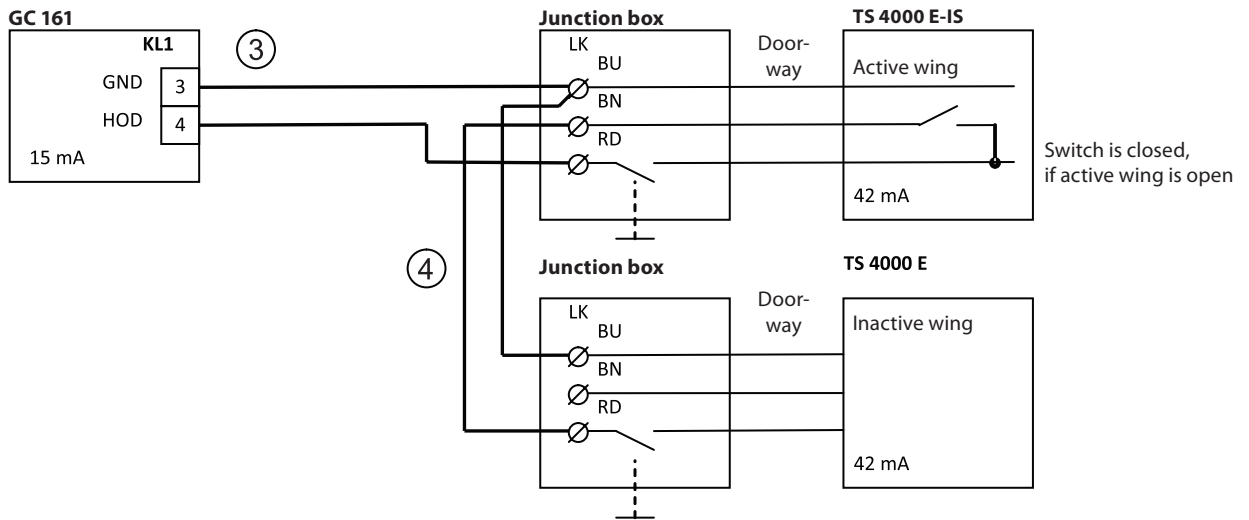


Fig. 5.5.1.3

Transom mounting

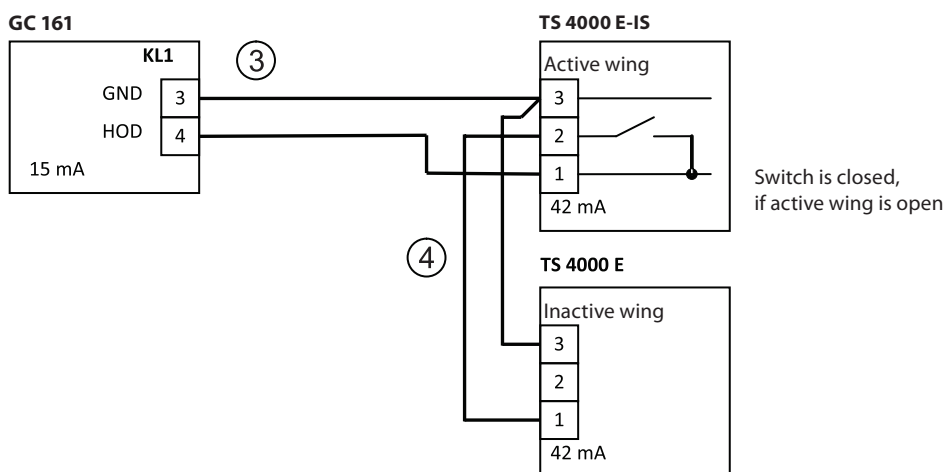


Fig. 5.5.1.4

E guide rail, E guide rail Boxer

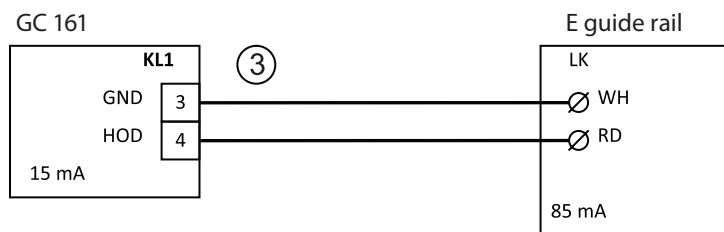


Fig. 5.5.1.5

E-ISM guide rail, E-ISM guide rail Boxer

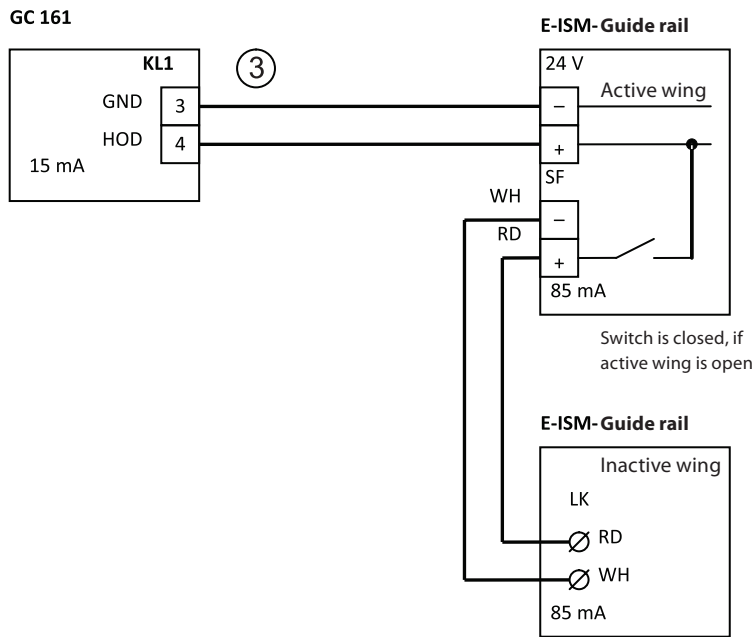


Fig. 5.5.1.6

ISM-EFS guide rail, ISM-EFS-guide rail Boxer

- No hold-open device for the inactive wing
- Junction box with pluggable cable transition, Mat. No. 052105

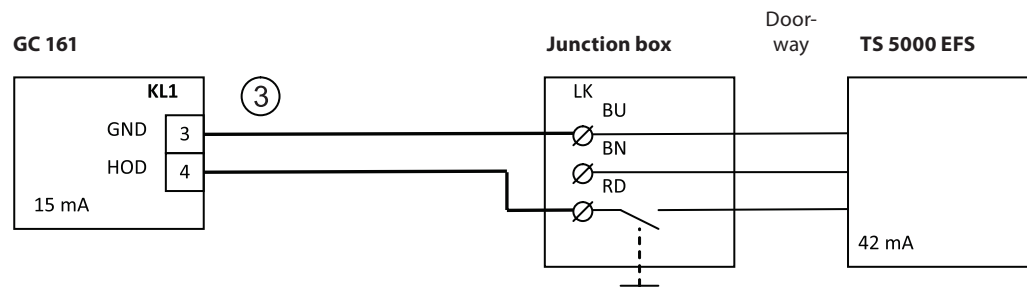


Fig. 5.5.1.7

Door closer TS 5000 EFS

Door leaf mounting

- Junction box with pluggable cable transition, Mat. No. 052105

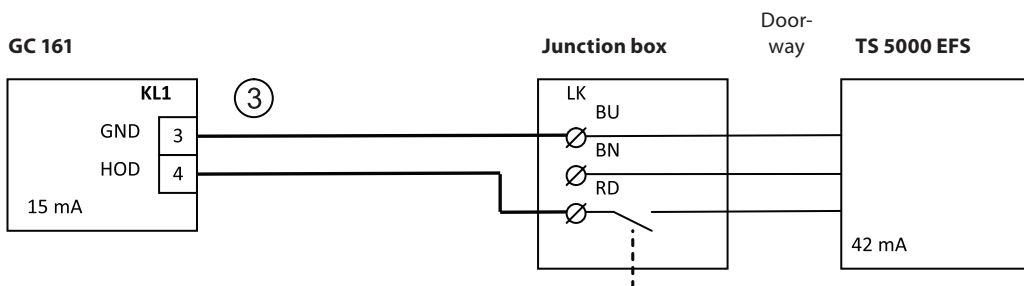


Fig. 5.5.1.8

Transom mounting

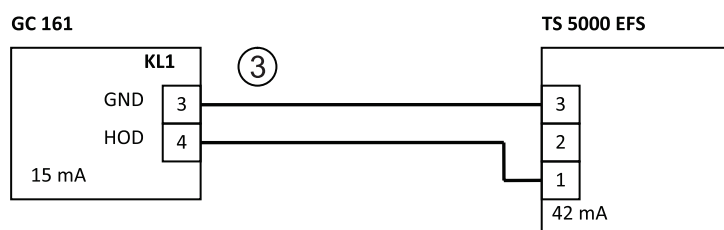


Fig. 5.5.1.9

Integrated door closer BOXER EFS

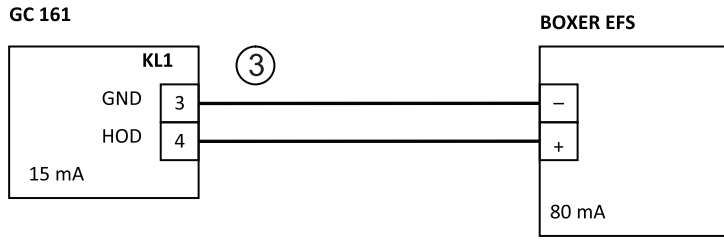


Fig. 5.5.1.10

Bottom door closer TS 550 NV-E

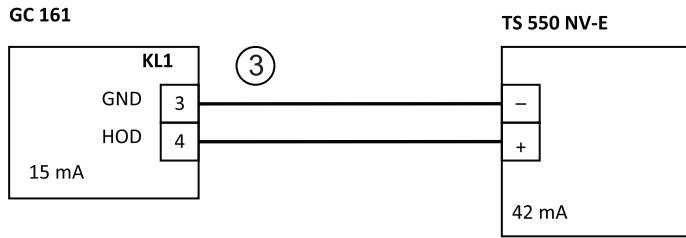


Fig. 5.5.1.11

Bottom door closer TS 550 E

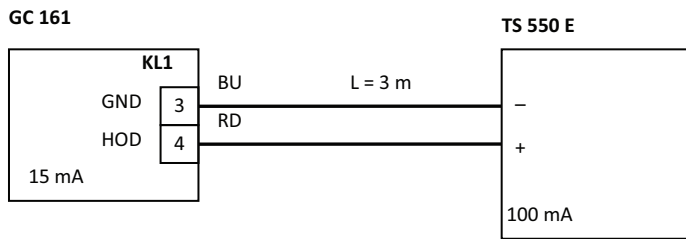


Fig. 5.5.1.12

Bottom door closer TS 550 E-IS

- Connection board, Mat No. 001102
- Connection box, on-site

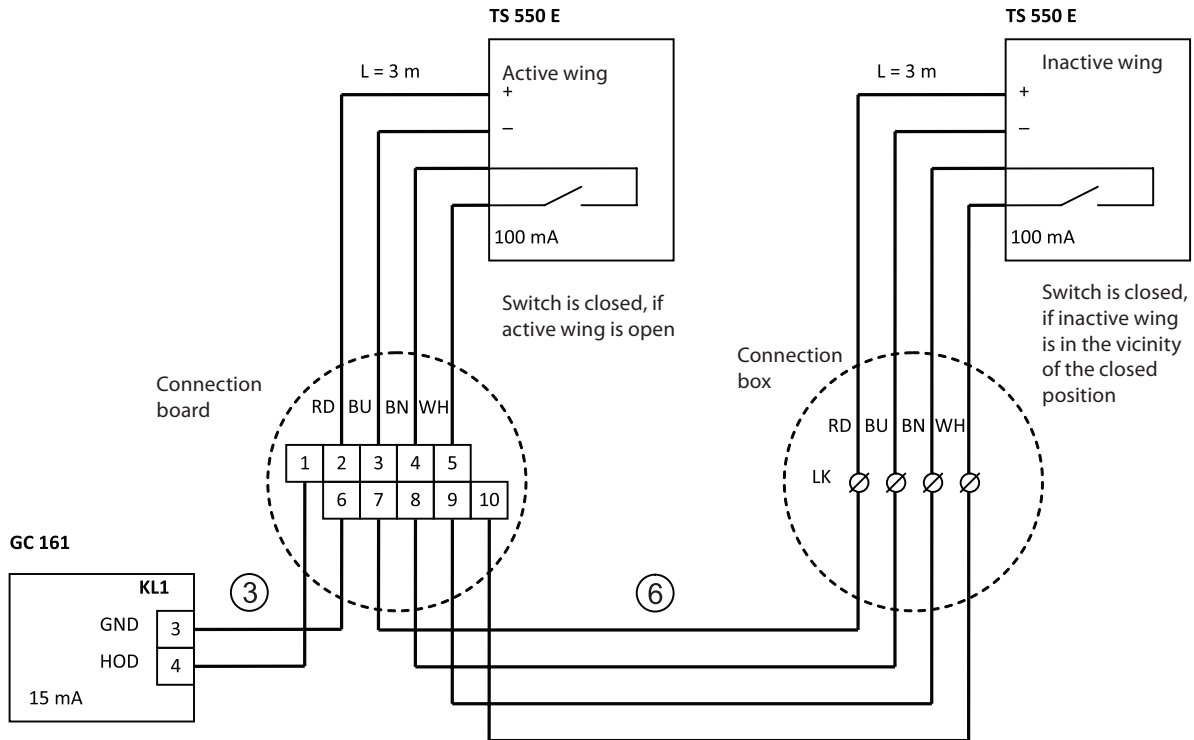


Fig. 5.5.1.13

Holding magnet GT50R

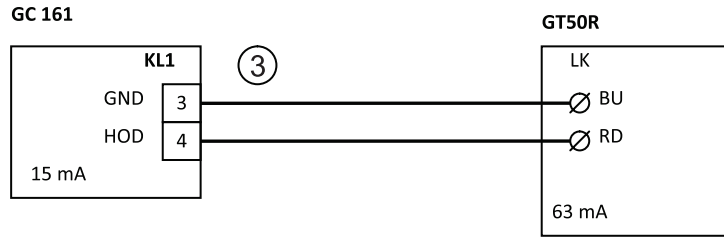


Fig. 5.5.1.14

5.5.2 Hold-open systems TS 4000 R, TS 4000 RFS

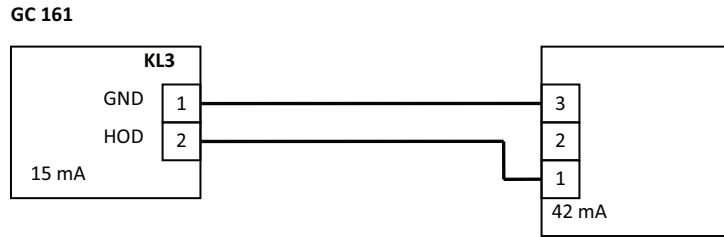


Fig. 5.5.2.1

5.5.3 Hold-open system TS 4000 R-IS

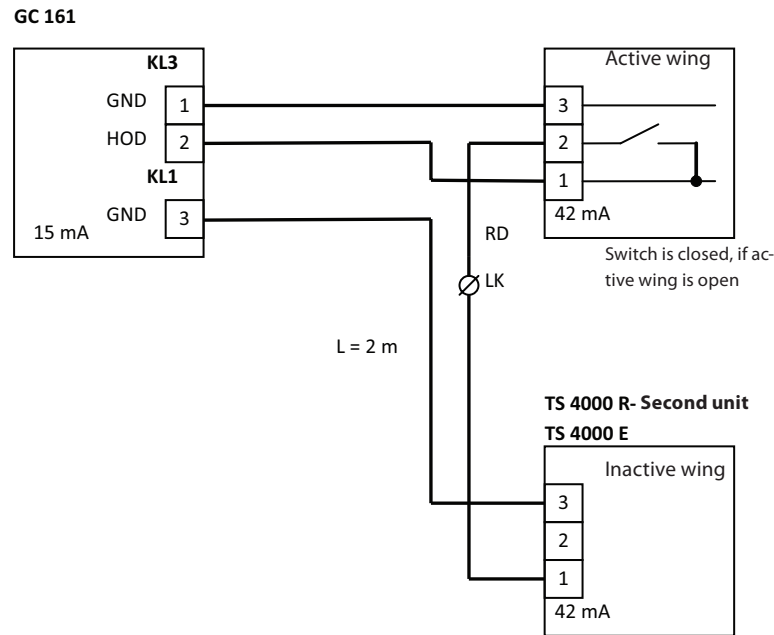


Fig. 5.5.3.1

5.5.4 Hold-open system TS 5000 R

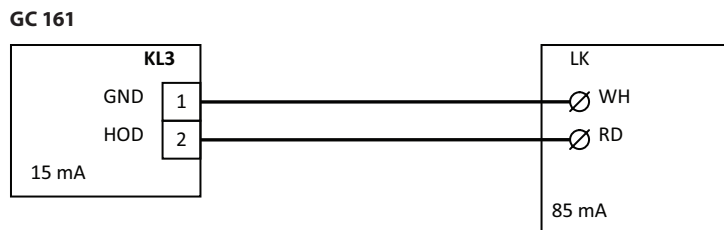


Fig. 5.5.4.1

5.5.5 Hold-open system TS 5000 R-ISM



For TS 5000 R-ISM/G, no hold-open device in the inactive wing

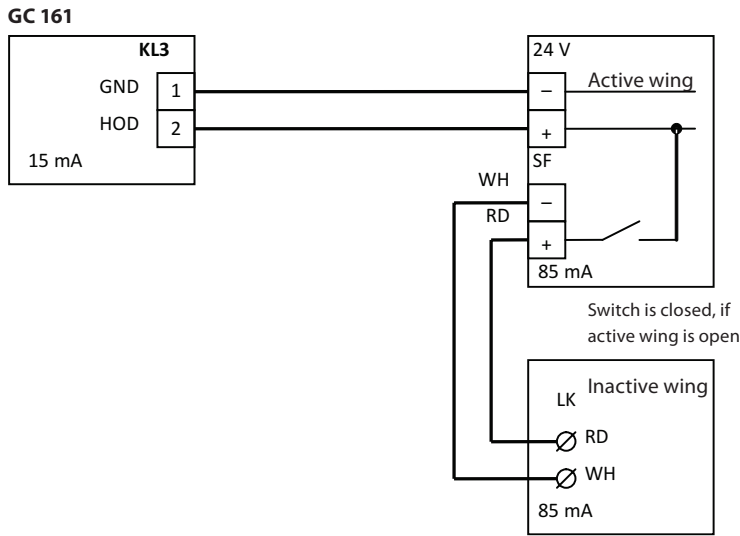


Fig. 5.5.5.1

5.5.6 Hold-open system TS 5000 R-ISM-EFS

- No hold-open device for the inactive wing
- Junction box with pluggable cable transition, Mat. No. 052105

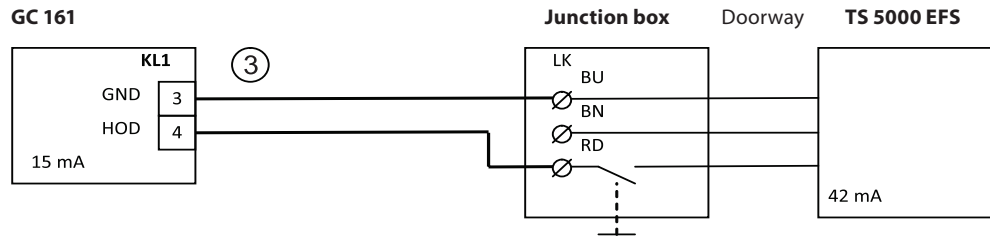


Fig. 5.5.6.1

5.5.7 Hold-open system TS 5000 RFS

- Door leaf mounting
- Junction box with pluggable cable transition, Mat. No. 052105

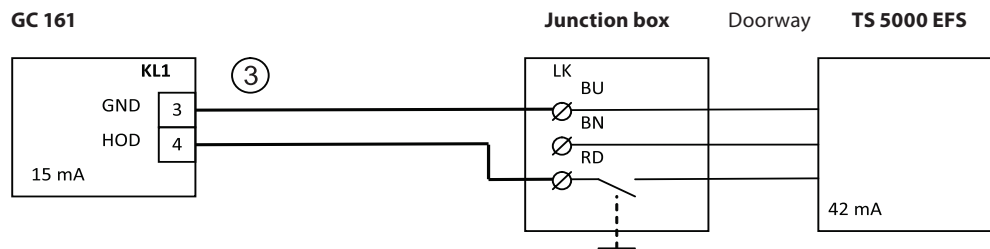


Fig. 5.5.7.1

5.5.8 Hold-open system TS 5000 RFS-KB

- Transom mounting

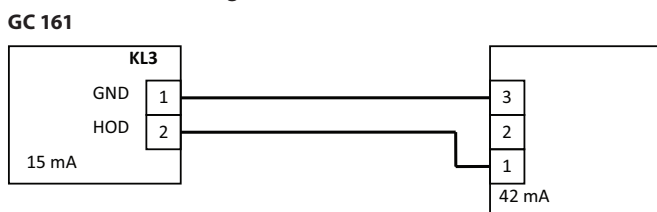


Fig. 5.5.8.1

6 Commissioning

1. Switch on the mains voltage.
The status indicator of the lintel smoke switch glows green.
2. Remove dust protection film or dust cap of the housing of the hold-open system, so that the smoke outlets are free.
3. Remove protective covers of the ceiling detector.

6.1 Examination of the self-closing feature of the door

6.1.1 1-leaf door

1. Fully open the door leaf. Door leaf is kept in the open position by the hold-open system.
2. Press the reset button of the lintel smoke switch. Status indication glows yellow for about 4 seconds. The door leaf closes and snaps into the latch.
3. If necessary, set manual disengagement torque in the open position:
Fully open the door leaf. The ejection torque should be, according to EN 1155, between 40 Nm and 120 Nm with an opening angle of 90°.

6.1.2 2-leaf door

1. Fully open both door leaves. Door leaves are kept in the open position by the hold-open system.
2. Press the reset button of the lintel smoke switch. Status indication glows yellow for about 4 seconds. The door leaves close complying with the closing sequence. Both door leaves close completely and the active leaf snaps into the latch.
3. If necessary, set manual disengagement torque in the open position.
Fully open both door leaves. The ejection torque should be, according to EN 1155, between 40 Nm and 120 Nm with an opening angle of 90°.
4. Move active leaf by hand from the hold-open position, inactive leaf closes automatically. Active leaf stops and also closes if inactive leaf is closed.

6.2 Testing the smoke detector

Test gas, Mat. No. 059168

6.2.1 GC 161

Carry out the following steps within about 2 minutes:

1. Press the reset switch, the status display changes from green to red.
Wait until the status display lights up green again.
2. Fully open the door leaf. Door leaf is kept in the open position by the hold-open system.
3. Now spray the test gas from a distance of about 15 cm into the free smoke opening in short bursts lasting about 1 s with 1 s between bursts, covering the upper smoke opening for this.
The smoke detector must trigger (change of status indicator from green to red). The door closes.

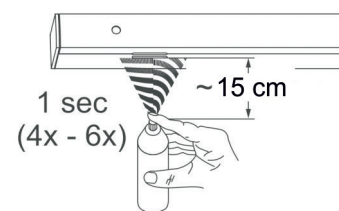


Fig. 6.2.1.1

6.2.2 GC 162

1. Fully open the door leaf. Door leaf is kept in the open position by the hold-open system.
2. Spray test gas from a distance of 10 cm to 15 cm into the free smoke outlet in short 1-second bursts at an interval of 10 seconds.
3. The smoke detector must trigger (change of status indicator from green to red). The door closes.

6.3 Testing the temperature sensor

6.3.1 GC 163

1. Fully open both door leaves. Door leaves are kept in the open position by the hold-open system.
2. Check temperature sensor GC 163 with a test apparatus for heat detectors.
The temperature sensor must trigger (change of status indicator from green to red). The door closes.
The test can also be carried out using a hair dryer. The air flow must reach a temperature of at least 60°C but must not exceed 90°C.

7 Acceptance test

After the ready-to-use installation of the hold-open system on site, its correct installation and proper operation must be confirmed by an acceptance test.

The acceptance test must be arranged by the operator.

The acceptance test must be performed only by GEZE professionals, experts authorized by GEZE, or professionals of a test centre designated by DIBt in the approval process.

The acceptance test must include the examination of the following points:

1. It should be verified that the installed devices and additional fire detectors, if any, of the hold-open device comply with the stipulations in the general building authority approval.
2. It should be verified that the markings of the installed devices and additional fire detectors, if any, comply with the marking stated in the general building authority approval.
3. The interaction of all devices should be verified on the basis of the general building authority approval, whereby the release must take place both through simulation of the characteristics of fire underlying the functional principle of the detector and by hand.
4. It should be verified whether the barrier for the automatic closure is enabled when the hold-open device is inoperable (e.g. by removal of a detector or by a power failure).

After successful acceptance, a signboard (Set 10 Pcs Mat No. 79142) in the dimensions 105 mm x 52 mm with the inscription:

- Hold-open device
 - Approved by ... (Trademark as well as month and year of acceptance)
- should be mounted in the immediate vicinity of the barrier by the operator.

A certificate should be issued to the operator on the successful completion of the acceptance test; it must be kept by the operator.

8 Maintenance

8.1 Routine check

- The hold-open system must be permanently maintained in good operating condition by the operator, especially by paying attention that the doors are not blocked (e.g. by wedges, chains or other items that prevent the automatic closing of the door leaf).
- To ensure that the hold-open system is in good condition, routine testing must be performed on site at regular intervals.

If no functional defects are found in the twelve consecutive function tests with an interval of a month, then the hold-open device needs to be checked only every 3 months. If a functional defect is found in the quarterly function tests, the operability should be restored immediately and this should be verified by at least three consecutive monthly function tests.

- This routine check may be performed by anyone according to the appropriate instructions by GEZE.

The function test of a hold-open device must include at least the following elements:

- Verification of manual release (manual release button, or if permitted by manual disengagement);
- Verification of the release of the hold-open device by testing the fire detector (see Chapter 6);
- Verification of the automatic resetting of the fire detector from the alarm status;
- Checking whether ambient influences impair the function of the integrated hold-open device;
- Checking whether the use in the immediate vicinity of the hold-open device exercises negative influences on it (such as the presence of dust or water vapour);
- Checking whether the function of the hold-open device is negatively influenced by structural changes and/or by interaction with other assembly sections in the immediate vicinity of the hold-open device (e.g. retrofitting of suspended ceilings) and whether the positioning of the fire detectors comply with the approval (see Chapter 3.5);
- Checking whether the fire or smoke barrier will be enabled after release of the automatic closure.

Extent, results and time of the conducted function test are to be documented in the GEZE test book for hold-open device and made available the operator. These records shall be kept by the operator.

Upon determination of apparent malfunction and/or damage to the fire and/or smoke barrier, the operator must be informed.

8.2 Annual inspection and maintenance

- In addition, the operator is responsible for the organisation of inspection and maintenance of all components of the hold-open system, thus ensuring that these components work together properly and without interference. This inspection and maintenance must be carried out at least once a year according to the manufacturer's recommendations. Scope, results and time of this annual inspection must be recorded in the GEZE test book for hold-open device, which needs to be kept by the operator.
- The regular maintenance and testing must be performed by a qualified person or a person trained for that purpose.

The maintenance of the hold-open device must include the elements of a function test as described in Section 8.1 and the following additional elements:

- Checking for compliance with the documentation and the building authority approval;
- Cleaning of the functionally relevant components of a hold-open device, provided the dirt accumulation can make a negative impact; (the measuring chamber of a smoke detector must not be opened).
- Verification of the release of the hold-open device during a power failure;
- Verification of release of the hold-open device upon removal of a fire detector.

Scope, results and time of the performed maintenance must be documented and made available to the operator.

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