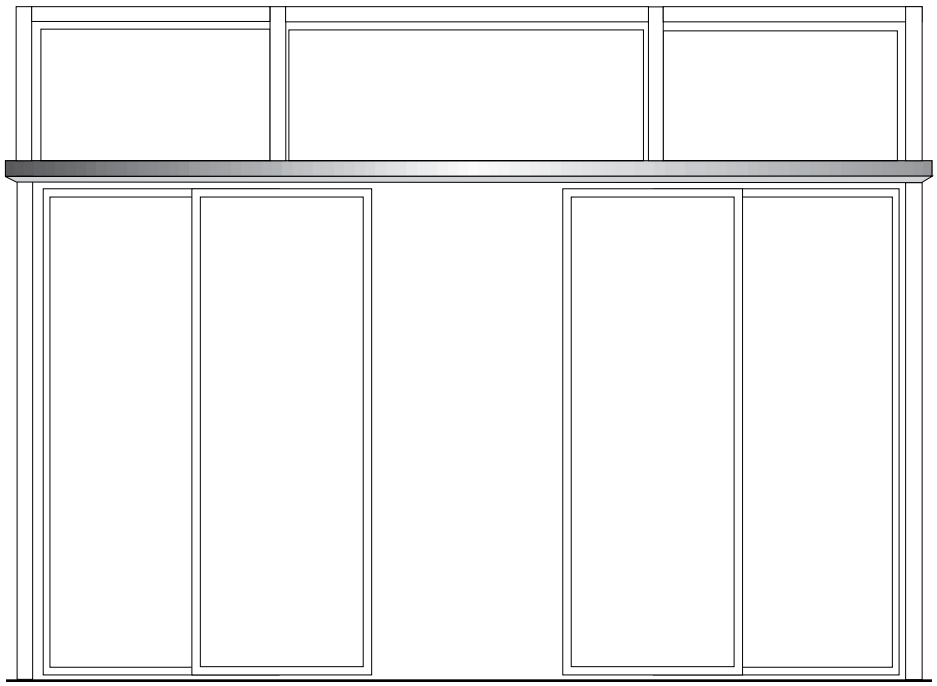


Automatic sliding doors

DCU1
DCU1-2M

EN Wiring diagram

135680-03

GEZE

Table of contents

Symbols and means of representation

Warnings
In these instructions, warnings are used to warn against material damage and injuries.
- ▶ Always read and observe these warnings.
- ▶ Observe all the measures that are marked with the warning symbol and warning word.

Warning symbol	Warning word	Meaning
	**DANGER**	Danger to persons. Non-compliance will result in death or serious injuries.
	**WARNING**	Danger to persons. Non-compliance can result in death or serious injuries.
	**CAUTION**	Danger to persons. Non-compliance can result in minor injuries.

Other symbols and means of representation
Important information and technical notes are highlighted to explain correct operation.

Symbol	Meaning	
	means "important note"	
	means "additional information"	
▶	**Symbol for an action: Here you have to do something.** ▶ If there are several actions to be taken, keep to the given order.	
	Escape and rescue route	Symbol in a table or for a piece of information only applicable to escape and rescue route doors.
	Not an escape and rescue route	Symbol in a table or relating to information which applies to standard doors without an escape and rescue route function.
	Conforms to DIN 18650/EN 16005	Symbol in a table or relating to information on safety sensors that are standard-compliant.
	Does not conform to DIN 18650 / EN 16005	Symbol in a table or relating to information on safety sensors that are not standard-compliant.

Validity

Valid for units with
Hardware: DCU1 Rev D, DCU1-2M Rev D;
Software: DCU1 V3.3, DCU1-2M V3.3

Product liability

In accordance with the manufacturer's liability for their products as defined in the German "Produkthaftungsgesetz" (Product Liability Act), the information contained in this brochure (product information and proper use, misuse, product performance, product maintenance, obligations to provide information and instructions) is to be noted and followed.
Failure to comply releases the manufacturer from his statutory liability.

1 Safety instructions

1.1 Important safety instructions

It is important to follow these instructions for the safety of persons.
These instructions must be kept.

- Only specialists authorised by GEZE are permitted to carry out installation, commissioning and maintenance work.
- Unauthorised modifications to the system exclude GEZE from liability for any resulting damages.
- GEZE makes no guarantee for combinations with third-party products. Use only original GEZE parts for repair and maintenance work as well.
- The connection to the mains voltage must be carried out by a qualified electrician. Perform the power connection and equipment earth conductor test in accordance with VDE 0100 Part 610.
- Use an on-site 10-A overload cut-out as the line-side disconnecting device.
- Attach safety stickers to glass door leaves, mat. no. 081476.
- In accordance with Machinery Directive 98/37/EC, a safety analysis is to be performed and the door system identified in accordance with CE Identification Directive 93/68/EEC before the door system is commissioned.
- Observe the latest versions of directives, standards and country-specific regulations, in particular:
  - AutSchR "Guidelines on automatic sliding doors in escape and rescue routes"
  - EN 16005 "Power operated pedestrian doorsets – Safety in use – Requirements and test methods"
  - DIN 18650, Part 1 and Part 2 "Automatic door systems"
  - DIN VDE 100-600 "Installation of low-voltage systems - Part 6 Tests"
  - DIN EN 60335-2-103 "Safety of electrical devices for home use and similar purposes; special requirements for drives, for gates, doors and windows"
  - Accident Prevention Regulations, in particular BGV A1 (VBG1) "General Regulations" and BGV A3 (VBG4) "Electrical Installations and Resources"

1.2 Installation details

- The drive is designed only for use in dry rooms.
- ▶ Only use the cables prescribed in the cable plan provided. Lay shields in accordance with the wiring diagram.
- ▶ Always use insulated wire-end ferrules for wire cores.
- ▶ Insulate the wires that are not used.
- ▶ Secure loose, internal drive cables with cable ties.
- ▶ Observe the maximum permitted overall current drain required to supply the periphery.

1.3 Safety-conscious working

- ▶ Secure the workplace against unauthorised entry.
- ▶ Watch the swivelling range of long system parts.
- ▶ Secure the hood/drive shrouding against falling.
- ▶ Before carrying out work on the electrical system, cut the power supply (mains and battery) and check to ensure that there is no power. When using an uninterrupted power supply (UPS), the system will still be under power even when disconnected from the mains.
- Risk of injury by moving parts (drawing in of hair, clothing, ...) when a drive is opened.
- Risk of injury caused by unsecured crushing, impact, drawing-in or shearing spots.
- Risk of injury caused by sharp edges in the drive.
- Risk of injury due to glass breakage.

1.4 Inspection of the installed system

- ▶ Measures for checking safety and prevention of crushing, impact, shearing or drawing-in spots.
- ▶ Check the function of the presence sensors and movement detectors.

- The detection field of the movement detector in the direction of emergency exit must cover the opening width (ÖW) × 1.5 m in front of the door.
- ▶ Check the protective earth connection to all metal parts that can be touched.

1.5 Disposal of the door system

- The door system is made up of materials that should be sent for recycling.
  For this purpose, the individual components should be sorted corresponding to material type:
  - Aluminium (profiles, covering, return pulleys, sliding blocks, ...)
  - Iron (drivers, screws, ...)
  - Plastic
  - Electronic parts (bolts, motor, control, transformer, sensors, ...)
  - Cable
  - Rechargeable battery
- ▶ The parts listed should be handed in to communal collection points or be disposed of via a scrap recycling company.
- Rechargeable batteries and batteries contain pollutants and heavy metals.
- ▶ Rechargeable batteries and waste batteries should be handed in to communal collection points or retailers.
- The rechargeable battery for the drive is a plug-in type and connected to the control; it can be removed easily by loosening two fixing screws.

Information regarding the Battery Directive:
(Applicable in Germany and in all other member states of the European Union as well as in other European countries, together with the countries' own provisions for a separate waste battery collection system.)
In accordance with the Battery Directive, we are obliged to inform you of the following in connection with the sale of batteries or rechargeable batteries respectively in connection with the delivery of devices containing batteries or rechargeable batteries: Rechargeable batteries and batteries must not be disposed of with household waste. Disposal with household waste is expressly forbidden according to the Battery Directive. As the final consumer, you are bound by law to return waste batteries and rechargeable batteries. Please return waste batteries and rechargeable batteries to a communal collection point or retailer.
Following use, you may return any batteries or rechargeable batteries received from us by post. The address is: GEZE GmbH, Incoming Goods, Reinhold-Vöster-Str. 21-29, 71229 Leonberg/Germany.

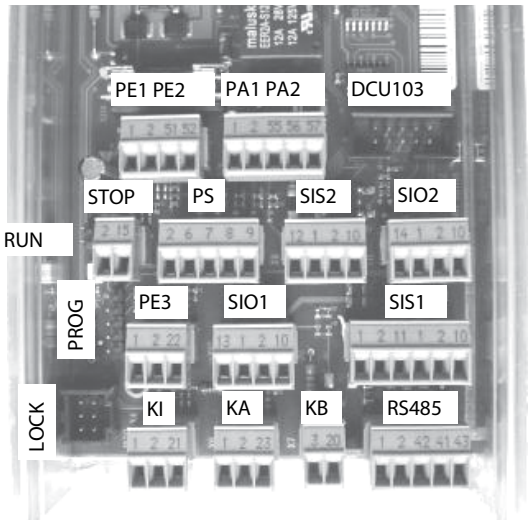
2 Abbreviations

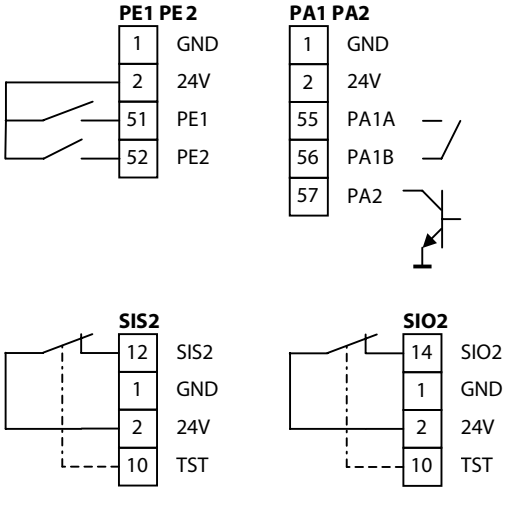
Wire colours

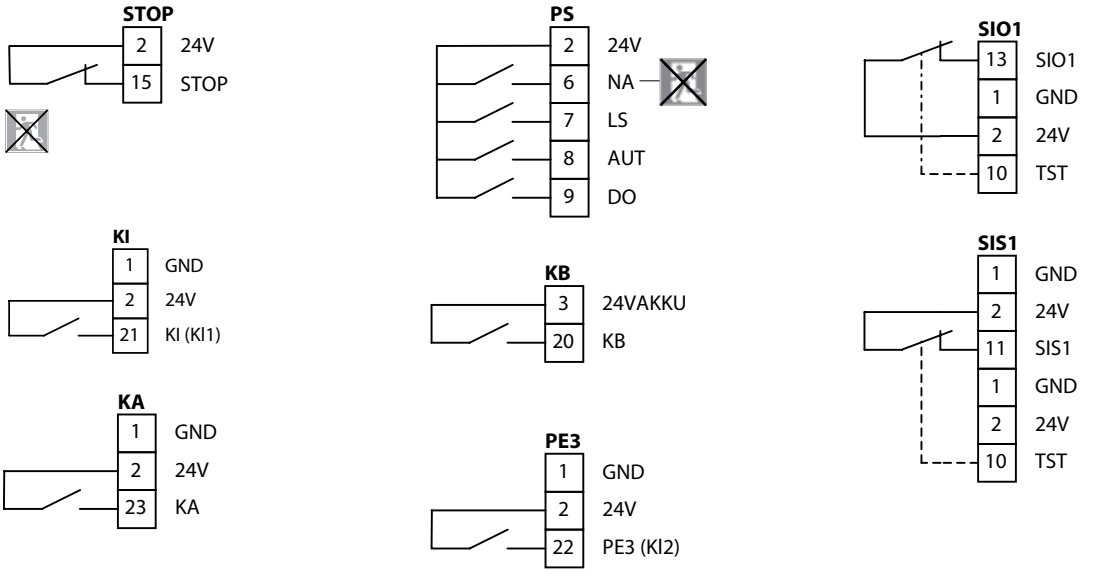
BN	brown	GN	green	OG	orange	TQ	turquoise
BK	black	GY	grey	P-K	pink	VT	violet
BU	blue	YE	yellow	RD	red	WH	white

Connections, terminals and plugs

AIR	Active infrared control light curtain
APO	Pharmacy opening
AU	Automatic
DO	Permanently open
DPS	Display programme switch
ENC	Incremental encoder
GND	Reference potential
IR	Infrared
KA	Contact sensor outside
KB	Contact sensor authorised
KI	Contact sensor inside
LK	Luster terminal
LCK_A	Locking, A
LCK_B	Locking, B
LKD	Locked
LS	Shop closing
M1A	Motor 1, A
M2A	Motor 2, A
M1B	Motor 1, B
M2B	Motor 2, B
MPS	Mechanical programme switch
NA	Night
N.C.	Not used
NC	Opening contact (normally closed)
NO	Closer contact (normally open)
NOTVER	Emergency lock
OFF	Off
ÖW	Opening width
PA	Output programmable
PE	Input programmable
PROG	Programming interface
PS	Programme switch
RBM	Radar movement detector
RUN	Status display
RS485	Communication signal to DPS, TPS
SABO	Sabotage
SCR	Shield
SHLD	Shield
SIO	Safety sensor "open"
SIS	Safety sensor "close"
ST220	Service terminal ST220 (mat. no. 087261)
STG	Fault
SYNC	Synchronisation
TEMP	Temperature sensor
Test	Test input
TPS	Keypad programme switch
TST	Test signal safety sensors
ULKD	Unlocked
+UB	Supply voltage +
–UB	Supply voltage –
24V	Supply voltage for external devices, max. 1.0 A
24VAKKU	Supply during mains power failure, max. 20 mA







3 Safety sensor "close"

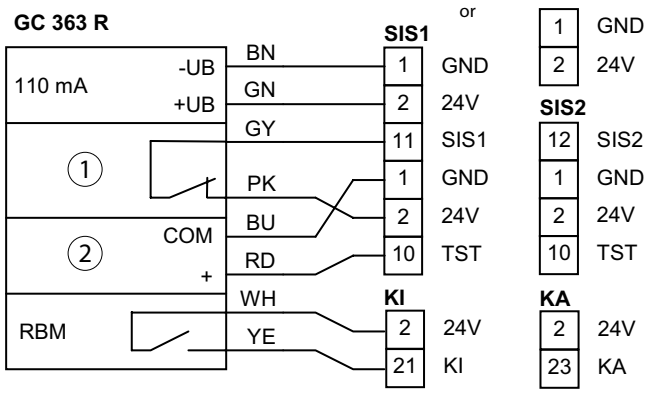
- Up to four safety sensors "close" can be connected (terminals SIS1, SIS2, SIO1 and SIO2).
- During detection, the output of the safety sensor "close" is open. GND is applied to the input.
- Set the contact type for the terminal used:
  - With DPS: S1, S2, S3 or S4 to 02
  - With ST220: "SI1-", "SI2-", "SI3-" or "SI4-contact type" to "opener"
- Set the function for detection (see Service menu chapter):
  - With DPS: F1, F2, F3 or F4
  - With ST220: "SI1-", "SI2-", "SI3-" or "SI4-function"
- Check function and correct setting of the sensors during commissioning and service.

3.1 Active infrared control light curtain and radar movement detector GC 363 R

DIN 18650
EN 16005

Installation height max. 3500 mm

- GC 363 R black, mat. no. 151237
- GC 363 R according to RAL, mat. no. 151238
- The GC 363 R contains an active infrared control light curtain and a direction-sensitive radar movement detector.



1 AIR curtain
2 Test

- In order to safeguard the closing process in compliance with EN 16005 and DIN 18650, a light curtain must be installed on both the inside and outside. The detection field of the light curtain on the floor must cover the whole door width.

▶ Follow installation instructions GC 363 R / SF.

Necessary parameter adjustment GC 363 R

▫ Output configuration:	WHEEL: OUTPUT	to 1 (NO)
	AIR: OUTPUT	to 1 (NC)

Necessary setting on the control

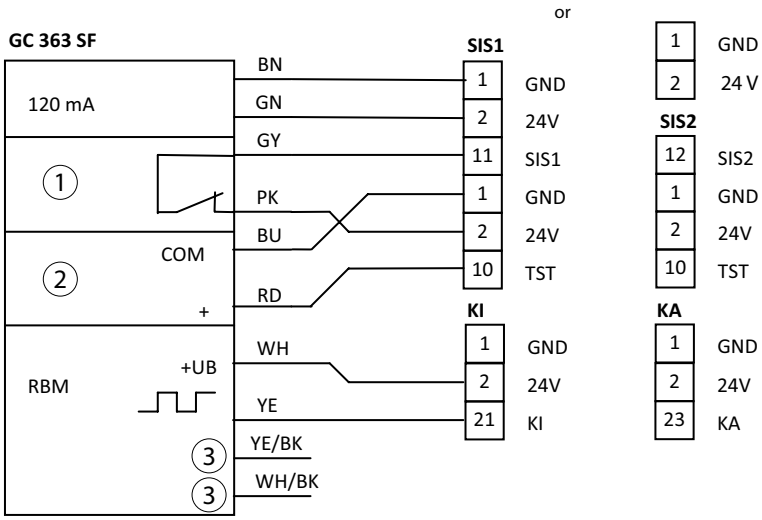
- Set parameter Ci (contact sensor inside, contact type) or Co (contact sensor outside, contact type) to 01 (closer).

3.2 Active infrared control light curtain and self-monitored radar movement detector GC 363 SF

DIN 18650
EN 16005

Installation height max. 3500 mm

- GC 363 SF black, mat. no. 151239
- GC 363 SF according to RAL, mat. no. 151240
- The GC 363 SF contains an active infrared control light curtain and a self-monitored, direction-sensitive radar movement detector with frequency output (100 Hz).
- ▶ Follow installation instructions GC 363 SF.
- ▶ Set the detection field and sensitivity of the radar movement detector as per AutSchR:
- Detection field = ÖW × 1.5 m, speed greater than 10 cm/s.



1 AIR curtain
2 Test
3 not used

- ▶ In order to safeguard the closing process in compliance with EN 16005 and DIN 18650, a light curtain must be installed on both the inside and outside. The detection field of the light curtain on the floor must cover the whole door width.

Necessary parameter adjustment GC 363 SF

▫ Output configuration:	WHEEL: OUTPUT	to 6 (freq)
	AIR: OUTPUT	to 1 (NC)

Necessary setting on the control

- Set parameter Ci (contact sensor inside, contact type) or Co (contact sensor outside, contact type) to 04 (frequency).

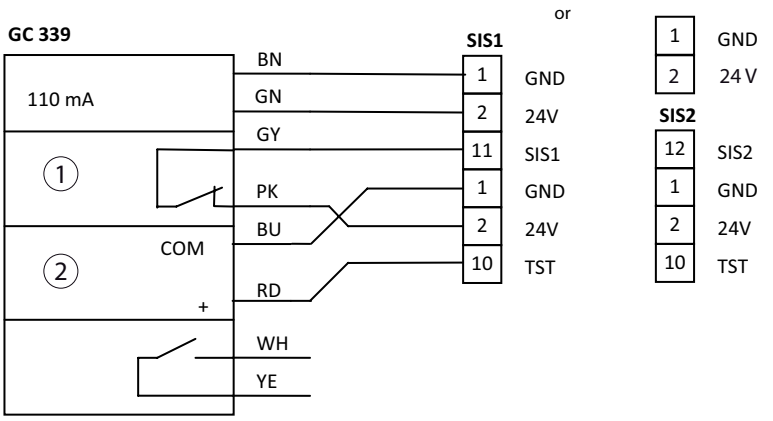
3.3 Active infrared control light curtain GC 339

DIN 18650
EN 16005

- GC 339 black, mat. no. 151251
- GC 339 according to RAL, mat. no. 151252

▶ Follow installation instructions GC 339.

▶ Insulate unused wires (WH, YE).



1 AIR curtain
2 Test

Necessary parameter adjustment GC 339

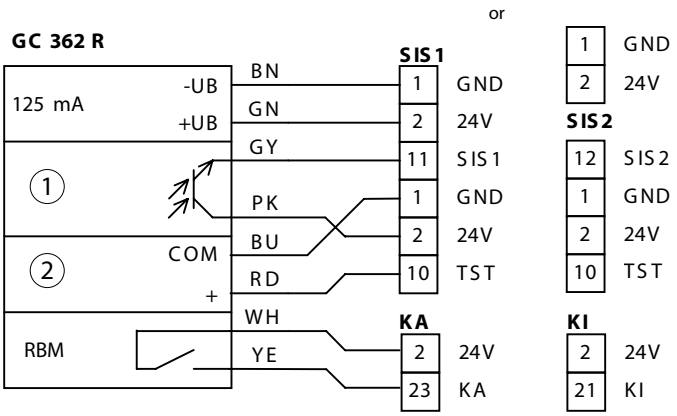
- Output configuration: AIR: OUTPUT to 1 (NC)

3.4 Active infrared control light curtain and radar movement detector GC 362 R

DIN 18650 ~~EN 16005~~

Installation height max. 3000 mm

- GC 362 R black, mat. no. 112753
- GC 362 R according to RAL, mat. no. 130527



1 AIR curtain
2 Test

The GC 362 R contains an active infrared control light curtain and a direction-sensitive radar movement detector.

▶ Follow installation instructions, mat. no. 112865.

- Accessories recommended for setting the sensor:
  - Remote control, mat. no. 100061.
- Accessories recommended for setting the light curtain:
  - Infrared detector, mat. no. 112321

Accessories:

- Ceiling installation kit, black, mat. no. 115533
- Ceiling installation kit, white, mat. no. 115532
- Ceiling bracket, mat. no. 115534
- Rain cover, mat. no. 126830

- To safeguard the closing movement, a light curtain with a detection field covering the entire door width on the floor and monitoring the area up to a height of at least 2,000 mm above the ground (where the main closing edge meets the opposite closing edge) must be mounted both inside and outside as per DIN 18650.
- The distance between the detection fields must not exceed 200 mm.

~~DIN 18650~~

- If only one light curtain is used, the detection field must be located on the floor as close to the door leaf as possible.
- ▶ Set the tilt angle of the optic block accordingly for this purpose.
- Half- or fully-grooved prism: wide/narrow detection field of the IR curtain
- 3-piece/6-piece aerial insert: wide/narrow detection field of the radar movement detector

Necessary parameter adjustment GC 362 R

Output configuration:	1 (radar output active, IR output passive)
Presence detection duration:	1 to 6 (1 to 60 minutes); the value 0 (30 sec.) is not permitted.
Monitoring mode:	1 (on)
Multi mode:	If adjacent light curtains overlap, set different infrared frequencies.

Necessary setting on the control

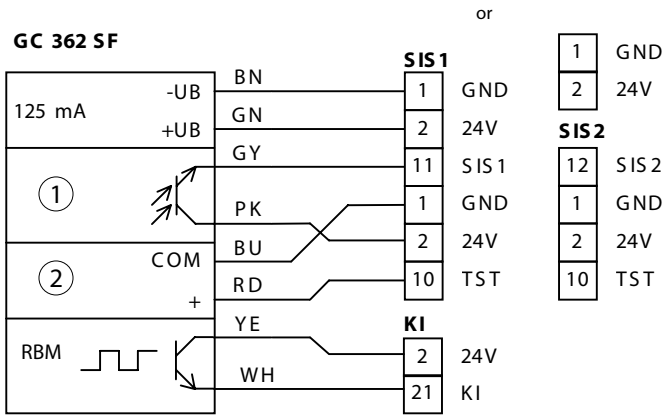
- ▶ Set Ci (contact sensor inside, contact type) or Co (contact sensor outside, contact type) to 01 (closer).

3.5 Active infrared control light curtain and self-monitored radar movement detector GC 362 SF

DIN 18650 ~~EN 16005~~

Installation height max. 3000 mm

- GC 362 SF black, mat. no. 127091
- GC 362 SF according to RAL, mat. no. 130526



1 AIR curtain
2 Test

- The GC 362 SF contains an active infrared control light curtain and a self-monitored, direction-sensitive radar movement detector with frequency output (100 Hz).
- ▶ Follow installation instructions, mat. no. 112869.
- The GC 362 SF is used in the direction of emergency exit.
- ▶ Set the detection field and sensitivity of the radar movement detector as per AutSchR:
  - Detection field = ÖW × 1.5 m, speed greater than 10 cm/s.

Necessary setting on the control

- ▶ Set Ci (contact sensor inside, contact type) or Co (contact sensor outside, contact type) to 04 (frequency).

Necessary parameter adjustment GC 362 SF

- Output configuration: 1 (IR output passive)
- Presence detection duration: 1 to 6 (1 minute to 60 minutes), the value 0 (30 s) is not permitted.
- Monitoring mode: 1 (on)
- Multi mode: If adjacent light curtains overlap, set different infrared frequencies.

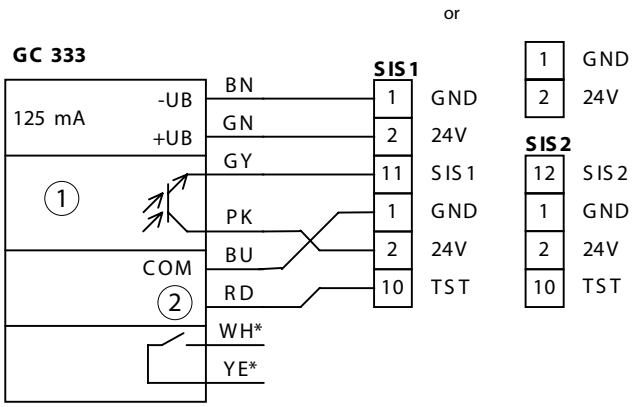
- The connection of two radar movement detectors of type GC 362 SF in the direction of emergency exit is not possible.
- ▶ Instead, use sensor GC 363 SF incl. GC 363 S interface (see chapter 6.2.2).

3.6 Active infrared control light curtain GC 333

DIN 18650 ~~EN 16005~~

Installation height up to 3000 mm

- GC 333 black, mat. no. 112755
- GC 333 according to RAL, mat. no. 130528



1 AIR curtain
2 Test
* Insulate unused wires (WH, YE)

The GC 333 contains an active infrared control light curtain.

- ▶ Follow installation instructions, mat. no. 112873.
- For further information see GC 362 R (SIS).

Accessories:

- Ceiling installation kit, black, mat. no. 115533
- Ceiling installation kit, white, mat. no. 115532
- Ceiling bracket, mat. no. 115534
- Rain cover, mat. no. 126830
- Accessories recommended for setting the sensor:
  - Remote control, mat. no. 100061
- Accessories recommended for setting the light curtain:
  - Infrared detector, mat. no. 112321

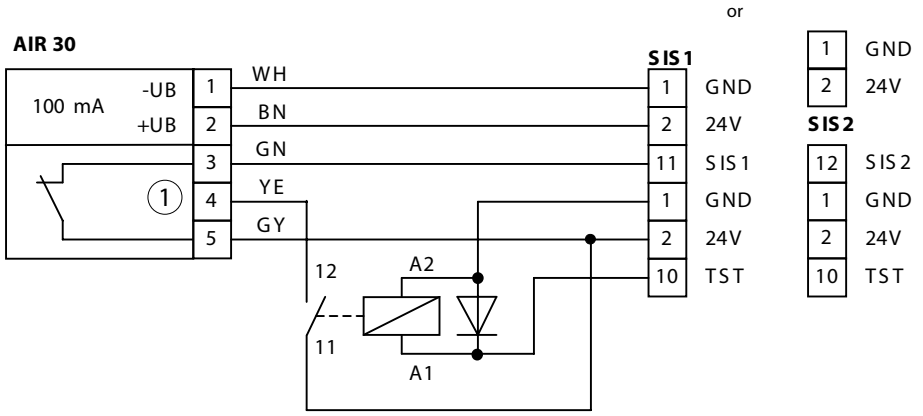
Necessary parameter adjustment GC 333

Monitoring mode: 1 (on)

3.7 Active infrared sensor AIR 30

~~DIN 18650~~
~~EN 16005~~

- AIR 30, mat. no. 072393
- Relay, mat. no. 103352



1 Test

Illustration: Static condition with operating voltage switched on

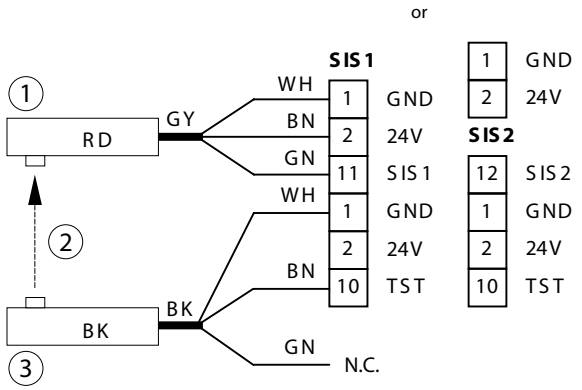
- Follow the installation instructions.
- Only use the AIR 30 as an additional sensor for monitoring closing. An AIR 30 sensor alone is not sufficient to meet the requirements as per DIN 18650.
- Set the light/dark selector switch to (D) (setting dark-switching)

▶ Adjust the sensing width to 0.2 m above the floor using the adjustment screw.

3.8 1-channel light barrier GZ 470 V

~~DIN 18650~~
~~EN 16005~~

GZ 470 V, mat. no. 112726



- Installation 1.0 m above the floor.
- Current consumption GZ 470 V: 50 mA

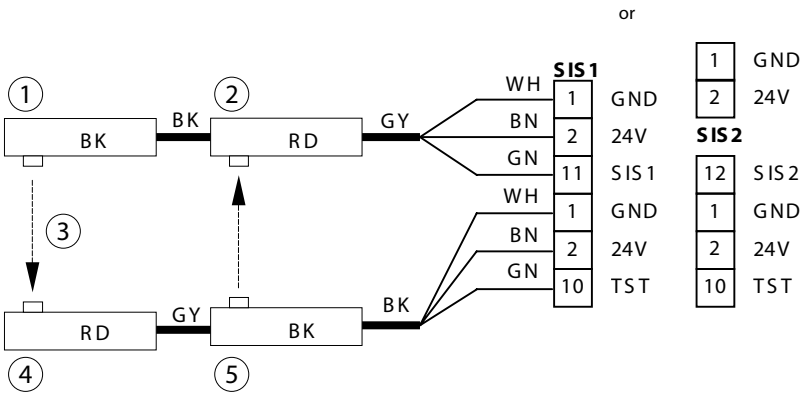
1 GZ 470 V receiver
2 max. 5 m
3 GZ 470 V transmitter

The side distance between the light barrier axis and the sliding panel level must not exceed 5 cm.

3.9 2-channel light barrier GZ 472 V

DIN 18650 ~~EN 16005~~

GZ 472 V, mat. no. 112727



1 GZ 472 ES V transmitter
2 GZ 472 ES V receiver
3 max. 5 m
4 GZ 472 SE V transmitter
5 GZ 472 SE V receiver

- Installation 0.2 m and 1.0 m above the floor respectively.
- Current consumption GZ 472 V: 70 mA

The side distance between the light barrier axis and the sliding panel level must not exceed 5 cm.

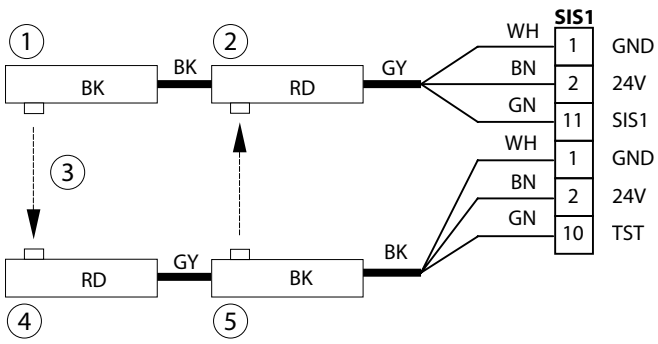
3.10 4-channel light barrier GZ 472 V

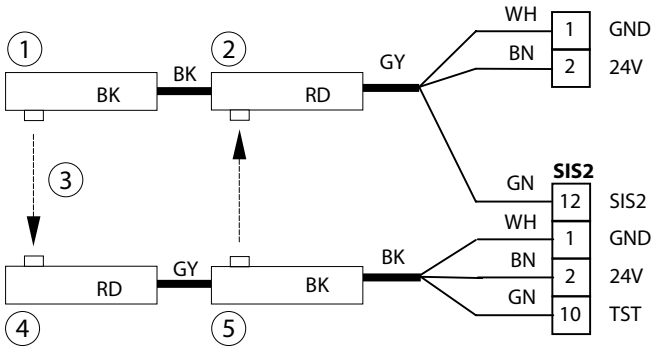
DIN 18650 ~~EN 16005~~

According to DIN 18650 safeguarding with light barriers is not suitable for people in need of special protection.
▶ Note and follow other standard-related requirements such as power limitation etc.

GZ 472 V, mat. no. 112727

- Install one channel 0.2 m above the ground, another one 1.0 m above the ground and the other channels as required.
- ▶ Install GZ 472 SE V on the left, GZ 472 ES V on the right in each case.
- Current consumption GZ 472 V: 70 mA





1 GZ 472 ES V transmitter
2 GZ 472 ES V receiver
3 max. 5 m
4 GZ 472 SE V transmitter
5 GZ 472 SE V receiver

The side distance between the light barrier axis and the sliding panel level must not exceed 5 cm.

4 Safety sensor "open"

Check function and correct setting of the sensors during commissioning and service.

- Up to four safety sensors "open" can be connected (terminals SIO1, SIO2, SIS1 and SIS2).
- During detection, the output of the safety sensor "open" is open. GND is applied to input SIO1 or SIO2.
- ▶ Set contact type for terminals used:
  - With DPS: Set *S3*, *S4* , *S 1* or *S2* to *02*.
  - ST220: Set parameter "SI3", "SI4", "SI1" or "SI2 contact type" to "open"
- ▶ Set function for terminals used (see Chapter 23):
  - Set DPS parameter *F3*, *F4*, *F 1* or *F2*.
  - Set ST220 parameter "SI3-", "SI4-", 2SI1-" or "SI2-function".

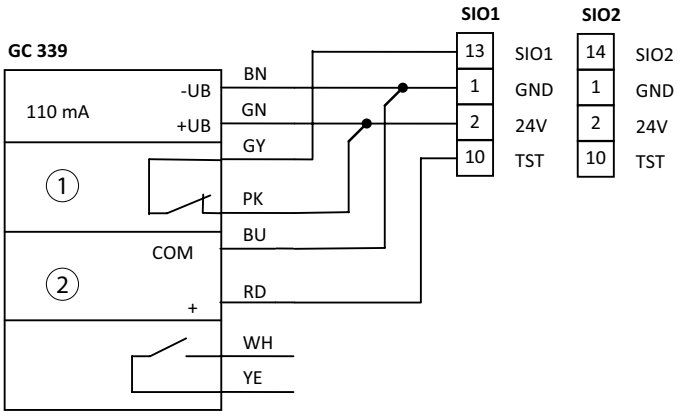
For doors in rescue routes:
If the safety sensor "open" is activated during opening, the door does not stop until the reduced opening width is reached. The reduced opening width must be larger than or the same size as the required escape route width (official building approval).

4.1 Active infrared control light curtain GC 339

DIN 18650
EN 16005

Installation height max. 3500 mm

- GC 339 black, mat. no. 151251
- GC 339 according to RAL, mat. no. 151252
- ▶ Follow installation instructions GC 339.
- ▶ Insulate unused wires (WH, YE).



1 AIR curtain
2 Test

Necessary parameter adjustment GC 339

- Output configuration: AIR: OUTPUT to 1 (NC)
- AIR width:

For installation in open position right:
Set AIR width to the right-hand sub-panel.

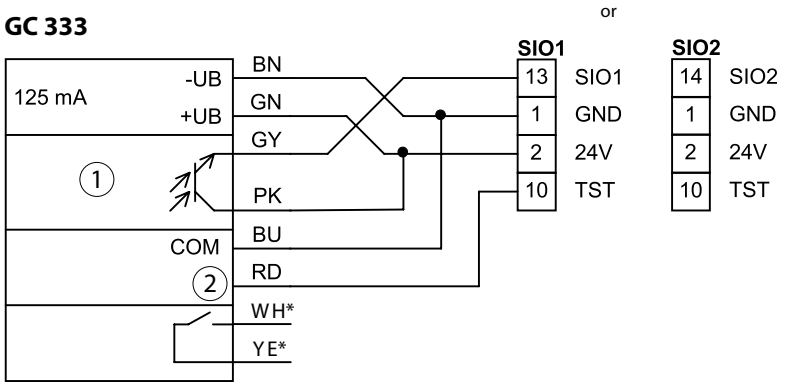
For installation in open position left:
Set AIR width to the left-hand sub-panel.

4.2 Active infrared control light curtain GC 333

~~DIN 18650~~ ~~EN 16005~~

Installation height up to 3000 mm

GC 333 black, mat. no. 112755



1 AIR curtain
2 Test
* Insulate unused wires (WH, YE)

Necessary parameter adjustment GC 333

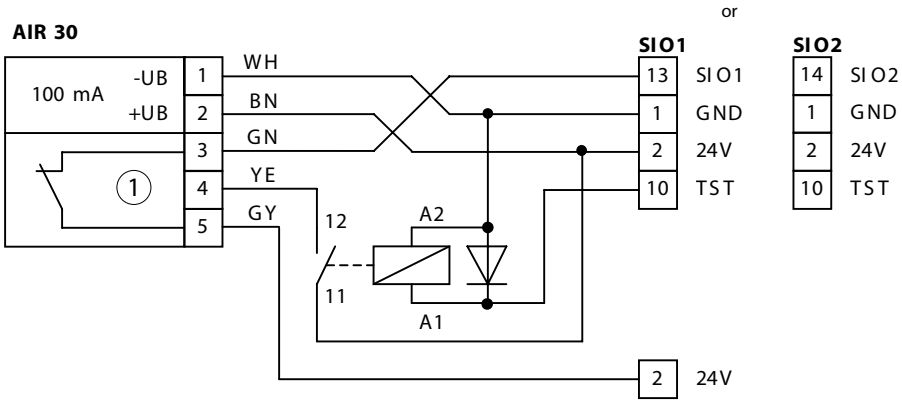
Monitoring mode: 1 (on)

- ▶ Follow installation instructions, mat. no. 112873.
- ▫ Prism 0.5 m left for monitoring the right-hand fixed panel, 0.5 m right for monitoring the left-hand fixed panel (the prisms are included with the sensor).

4.3 Active infrared sensor AIR 30

~~DIN 18650~~ ~~EN 16005~~

- ▫ AIR 30, mat. no. 072393
- ▫ Relay, mat. no. 103352



1 Test

Illustration: Static condition with operating voltage switched on

- ▶ Follow the installation instructions.
- ▫ For further information see AIR 30 (SIS).

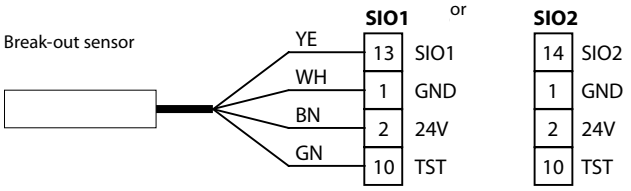
5 Break-out doors

- ▶ Before commissioning, set the drive type in the Service menu "Door parameters" "Drive type" (Slimdrive SL BO, ECdrive BO or TSA 360NT BO).
- ▶ Note the contents of the "Guidelines on automatic sliding doors in escape and rescue routes (AutSchR)":
  - The programme switch must be protected from unauthorised access e.g. by installing a key push button to block the programme switch.
  - The functions emergency lock, interlocking door system and vestibule are not permitted with automatic sliding doors on rescue routes.
  - The operating mode setting "Night" with timer or switch is not possible.
  - The function "pharmacy" is not available as an input parameter.

- Break-out sensor, mat. no. 076114
- The break-out sensors monitor the position of the swing leaves. They are connected to the inputs SIO1 or SIO2 together with any safety sensors "open" that are available.
- When the break-out sensor is triggered, the door stops during opening and closing.
- Break-out sensors
  - SIO1 is configured automatically.
  - If used, SIO2 must be configured to contact type "opener" and function "break-out".
- When the side part has been swung out, the break-out sensor output is open. GND is applied to input SIO1 or SIO2.

5.1 Break-out sensor

- With 1-leaf systems one break-out sensor is mounted (SIO1), any safety sensor open that is available is connected to SIO2.
- With 2-leaf systems two break-out sensors are mounted (inputs SIO1 and SIO2 of the control unit).



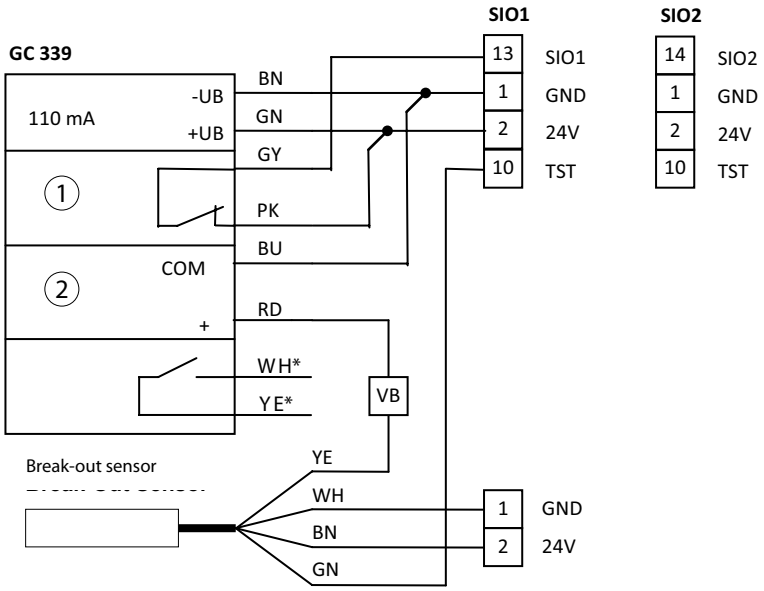
5.2 Break-out sensor and safety sensor "open"

- Two break-out sensors and two safety sensors "open" can be connected (inputs SIO1 and SIO2 of the control).
- During detection, the output of the safety sensor "open" is open. GND is applied to input SIO1 or SIO2.
- When a break-out sensor or a safety sensor "open" is triggered, the door stops during opening and closing.

5.3 Break-out sensor with active infrared control light curtain GC 339

DIN 18650
EN 16005

For further information see section 3.3 Active infrared control light curtain GC 339.

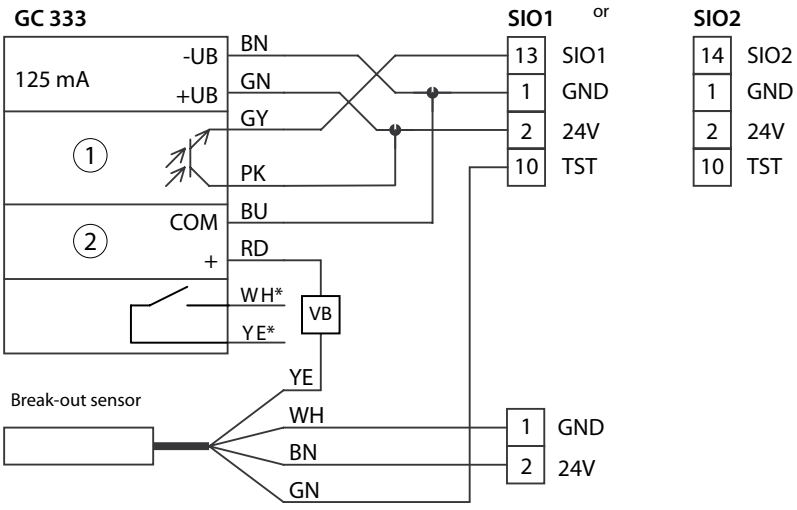


1 AIR curtain
2 Test
* Insulate unused wires (WH, YE)
VB Connection of the wires and fixing of sensor cables (see section 6.3 Protecting the sensor cable against short-circuit)

5.4 Break-out sensor with active infrared fan-shaped sensor GC 333

DIN 18650 ~~EN 16005~~

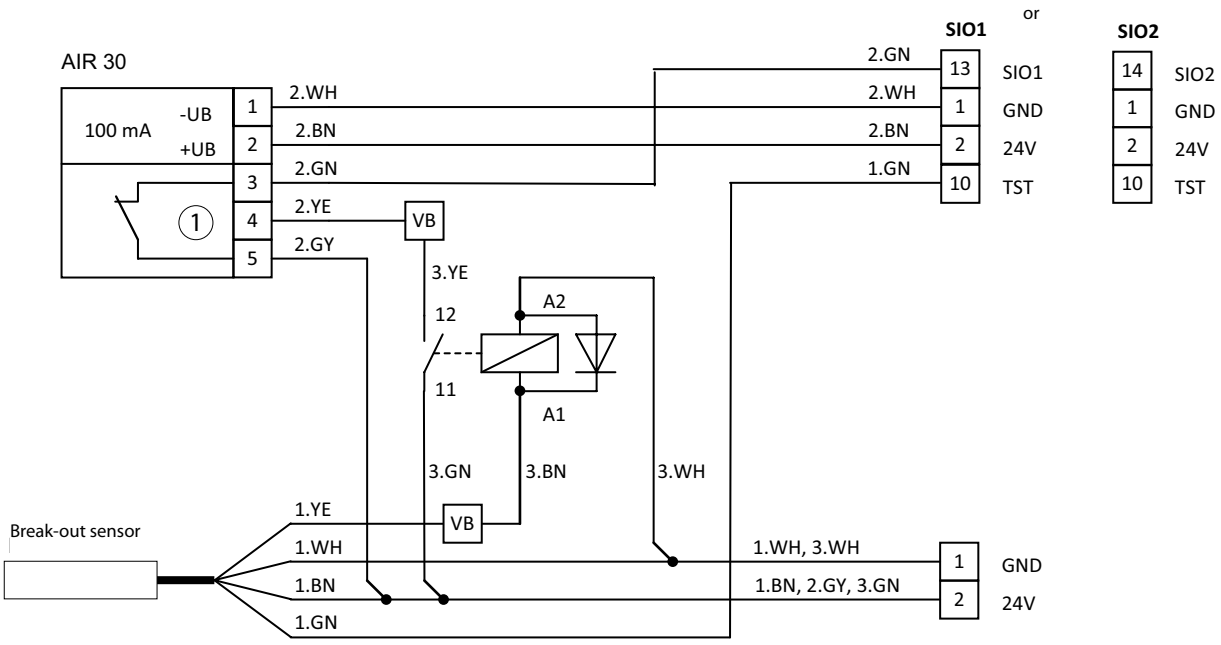
- Further information in chapter 4.2 Active infrared control light curtain GC 333



1 AIR curtain
2 Test
* Insulate unused wires (WH, YE)
VB Connection of the wires and fixing of sensor cables (see chapter 6.3 Protecting the sensor cable against short-circuit)

5.5 Break-out sensor with active infrared fan-shaped sensor AIR 30

~~DIN 18650~~
~~EN 16005~~



1 Test
VB Connection of the wires and fixing of sensor cables (see section 6.3 Protecting the sensor cable against short-circuit)

Illustration: Static condition with operating voltage switched on

- For further information see chapter 4.3 Active infrared sensor AIR 30

6 Series connection of safety sensors

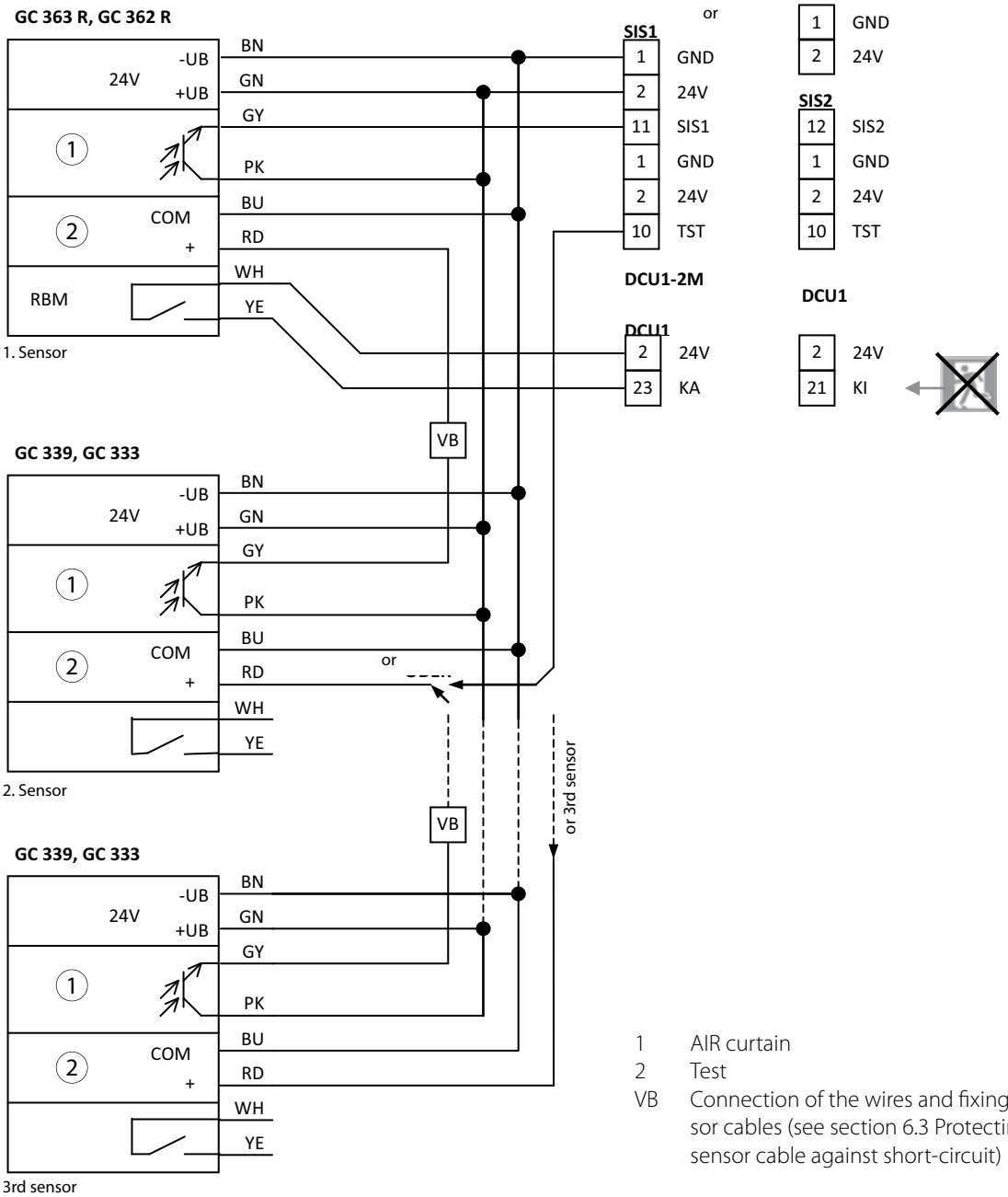
6.1 Safety sensor "close" (standard doors)

DIN 18650
EN 16005

6.1.1 Active infrared control light curtain (GC 339, GC 333) with safety/activation sensor (GC 363 R, GC 362 R)

- GC 339 and GC 363 R meet the requirements as per EN 16005 and DIN 18650.
- GC 333 and GC 362 R meet the requirements as per DIN 18650.

For GC 363 R, GC 362 R:
▶ Connect the AIR output directly to terminal SIS of the control.
For GC 362 / GC 333:
▶ Set the parameter "TEST (monitoring" to On [1].



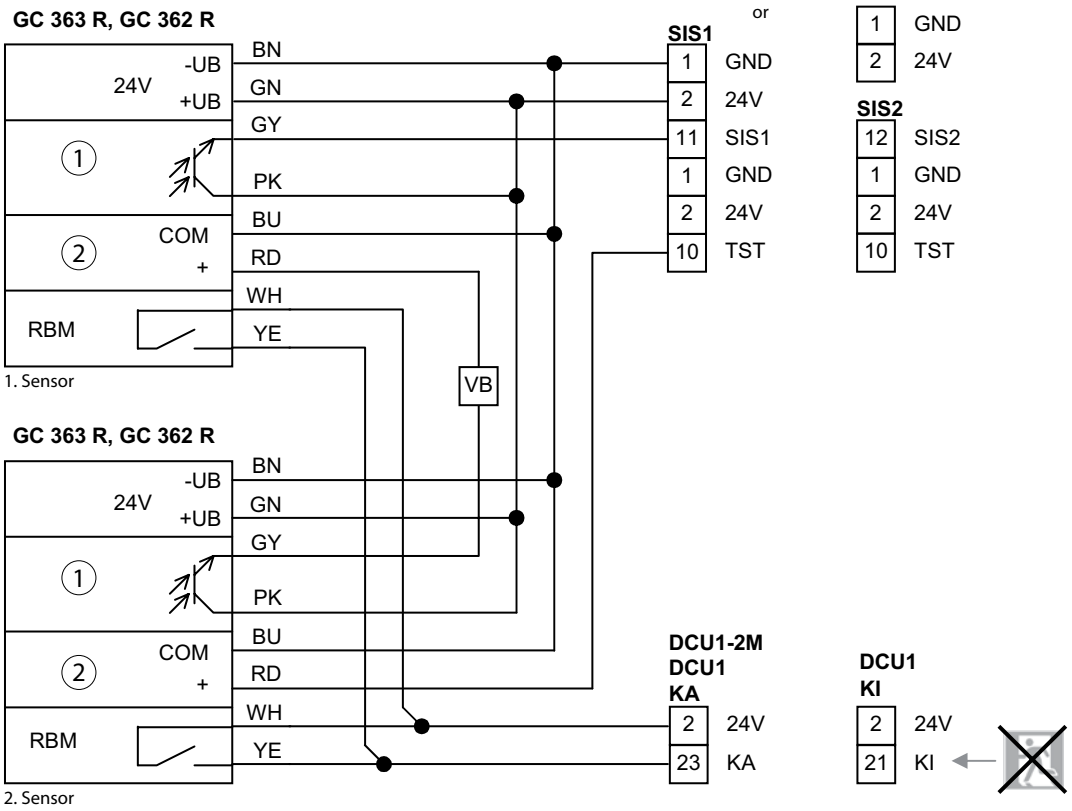
1 AIR curtain
2 Test
VB Connection of the wires and fixing of sensor cables (see section 6.3 Protecting the sensor cable against short-circuit)

6.1.2 Safety/activation sensors GC 363 R (GC 362 R)

- GC 363 R meets the requirements as per EN 16005 and DIN 18650.
- GC 362 R meets the requirements as per DIN 18650.

For GC 362:

▶ Set the parameter "TEST (monitoring" to On [1].



1 AIR curtain
2 Test
VB Connection of the wires and fixing of sensor cables (see section 6.3 Protecting the sensor cable against short-circuit)

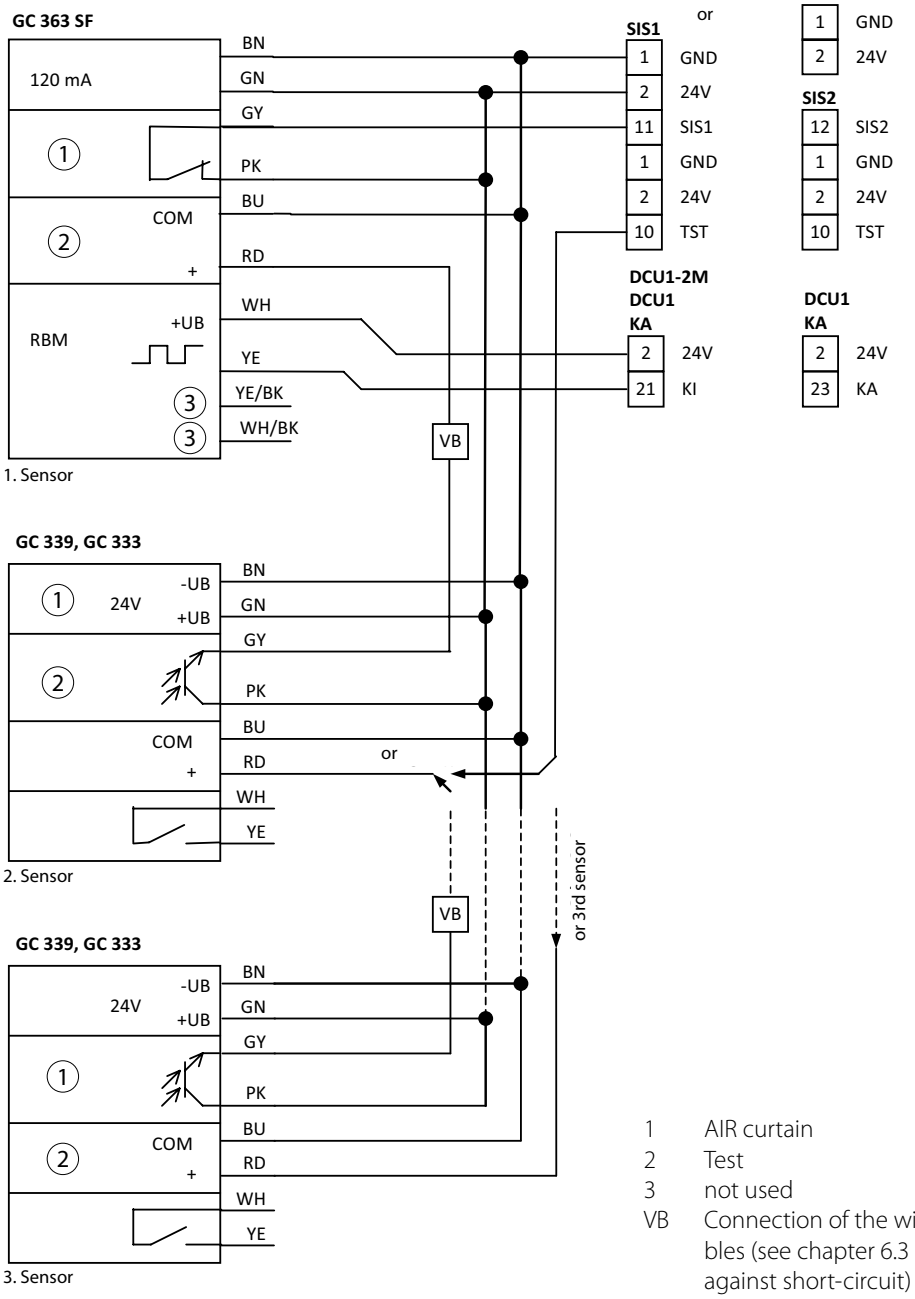
Illustration: Static condition with operating voltage switched on

6.2 Safety sensor "close" (FR doors)

6.2.1 Active infrared control light curtain (GC 339, GC 333) with safety/activation sensor (GC 363 SF, GC 362 SF)

- GC 339 and GC 363 SF meet the requirements as per EN 16005 and DIN 18650.
- GC 333 and GC 362 SF meet the requirements as per DIN 18650.

For GC 363 R, GC 362 R:
▶ Connect the AIR output directly to terminal SIS of the control.
For GC 362 / GC 333:
▶ Set the parameter "TEST (monitoring" to On [1].



1 AIR curtain
2 Test
3 not used
VB Connection of the wires and fixing of sensor cables (see chapter 6.3 Protecting the sensor cable against short-circuit)

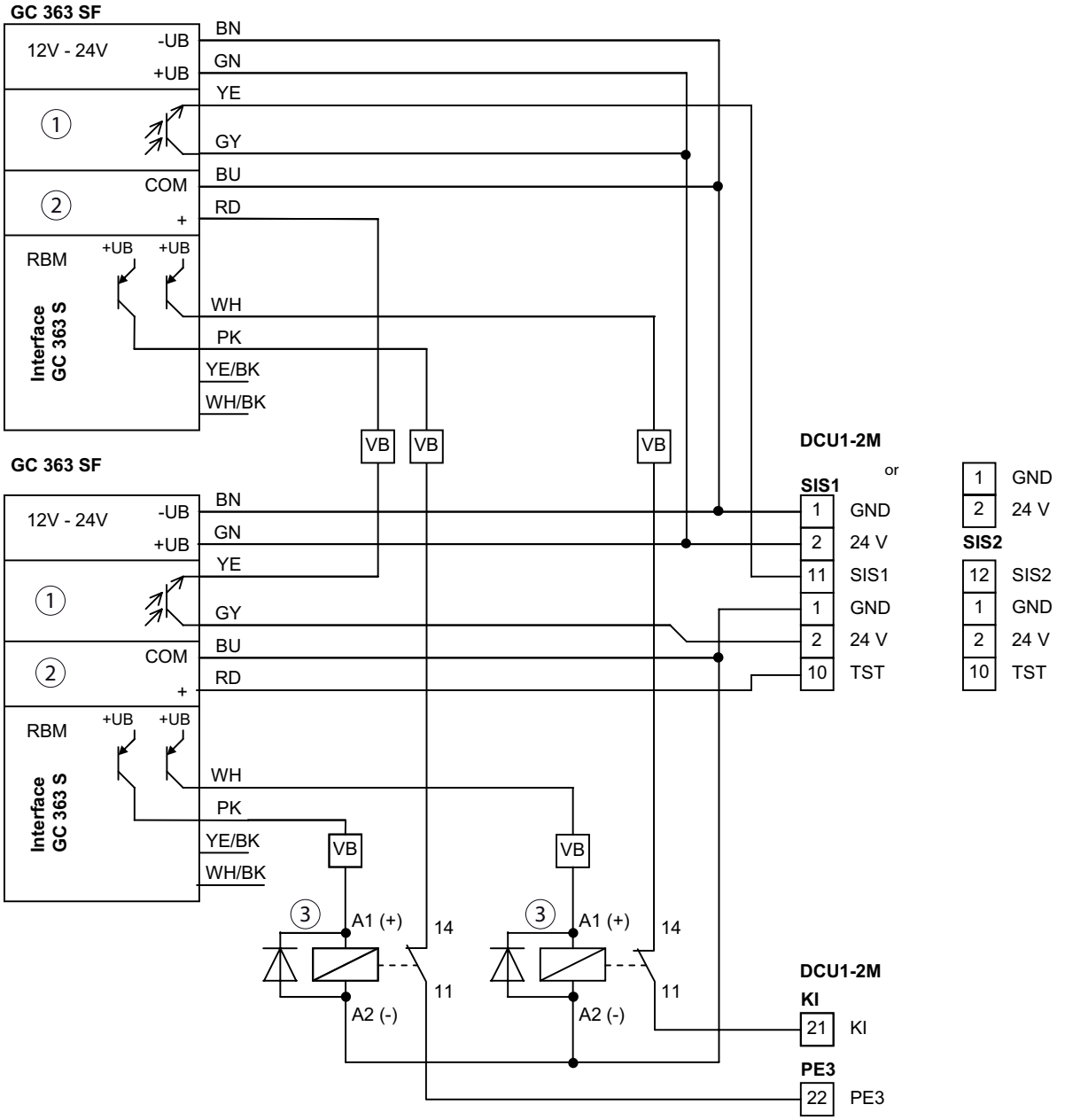
6.2.2 Safety/activation sensor GC 363 SF

DIN 18650
EN 16005

- Two interfaces GC 363 S and two relays are required for the series connection of two GC 363 SF.
- For further information see section 3.2 Active infrared control light curtain and self-monitored radar movement detector GC 363 SF

Set the parameters:

- ▶ Ci (KI contact type) to 02 (opener redundant).
- ▶ E3 (PE3 function) to 01 (KI 2).
- Accessories:
  - Interface GC 363 S, mat. no. 151361
  - Relay (with free-wheeling diode), mat. no. 103352
- GC 363 SF setting:
  - WHEEL: OUTPUT to 5 (current/NC)

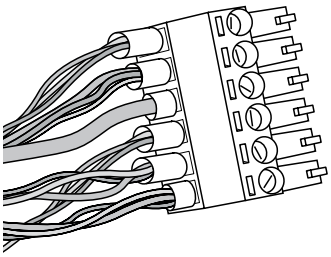


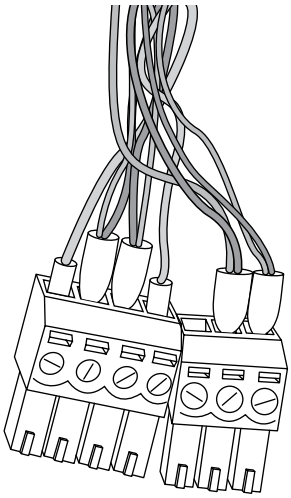
1 AIR curtain
2 Test
3 Relay (with free-wheeling diode)
VB Connection of the wires and fixing of sensor cables (see section 6.3 Protecting the sensor cable against short-circuit)
Illustration: Static condition with operating voltage switched on

6.3 Protecting the sensor cable against short-circuit

When connecting the sensor cables to the plug-type connectors SIS1, SIS2, SIO1, SIO2 use the following method:

Combine several wires to be connected in one wire-end ferrule

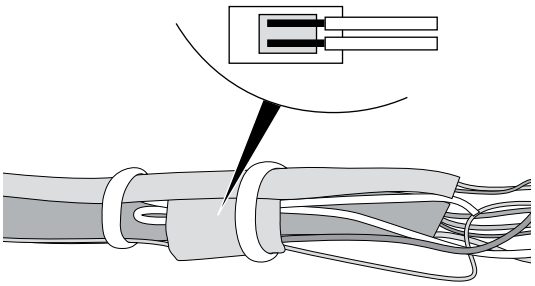




Connect VB wires using an insulated parallel connector

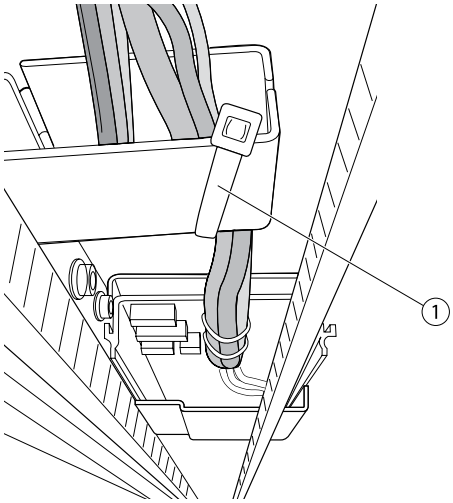
Parallel connectors: e.g. Bürklin, order no. 07F680

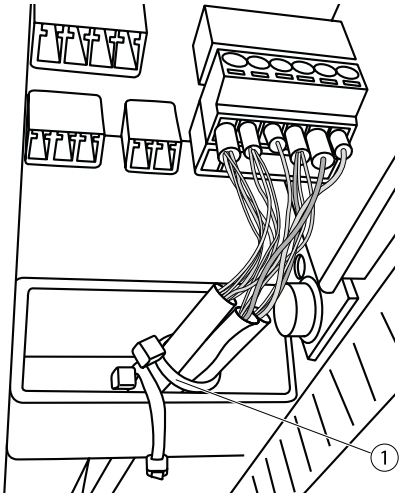
- Use shrink tubing to insulate wires until the start of the cable sheath. The shrink tubing must project 10 mm over the insulated parallel connector.
- Lay the insulated wires backwards over the cable sheaths.
- Insulate non-used wires and lay them backwards over the cable sheaths.
- Fix wires and cables using 2 cable ties.



Secure sensor cables against movement

- Fix the sensor cables to the cable holder using a cable tie (1).





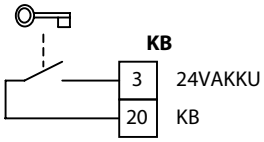
7 Contact sensor authorised

- The input KB is active in operating modes Au, LS and nA.
- When activated, the output of the contact sensor authorised is closed (24 V AKKU is applied to the KB input).
- When KB is activated, the door opens fully, even if the operating mode Au winter is set.

Do not use terminal strip "KB" for supplying external loads (e.g. number codelock).
Otherwise the battery will not be charged.

- Key push button SCT, single-pole, flush-mounted, AS 500 without profile half cylinder, mat. no. 117996
- Accessories:
  - Profile half cylinder, mat. no. 090176
  - Additional contact, mat. no. 024467 (the additional contact is not a sabotage contact, it is intended to release the DPS or TPS)

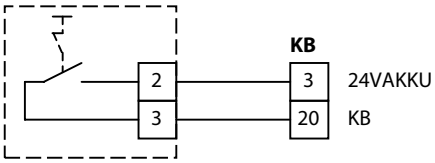
7.1 Key push button



7.2 Emergency opening switch without illumination

- Mat. no. 067846

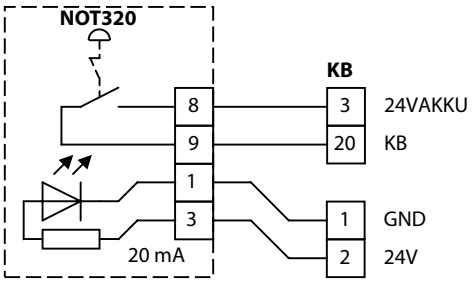
After activation, the housing must be opened with the appropriate key and the unlock lever activated in order to unlock the switch.



7.3 Emergency opening switch with illumination

- Surface-mounted, AS 500, alpine white, mat. no. 137967
- Flush-mounted, mat. no. 136571

After activation, the switch must be unlocked by pulling out the mushroom button.



8 Contact sensor inside

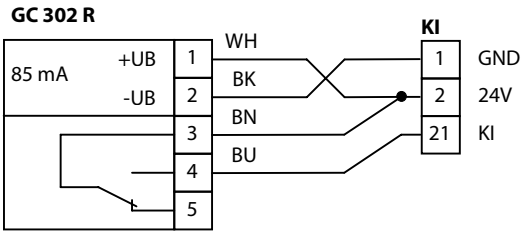
The KI input is active in operating modes Au and LS.

8.1 Standard doors

During activation, the output of the contact sensor inside is closed (24 V are applied to the KI input).

8.1.1 Radar movement detector GC 302 R

- GC 302 R black, mat. no. 124087
- GC 302 R according to RAL, mat. no. 124088
  The remote control does not work with detector hood mounted, LED not visible.
- The GC 302 R is a direction-sensitive radar movement detector.



- ▶ Follow installation instructions, mat. no. 123457.
- Accessories:
  - Remote control, mat. no. 099575
  - Ceiling installation set, mat. no. 115384
  - Rain cover, mat. no. 115339
- ▶ If several GC 302 R units are installed near to one another or behind one another, set different device addresses using the two DIP switches. Otherwise the settings of the other detectors will also be changed by the remote control.

8.1.2 Active infrared fan-shaped sensor and radar movement detector GC 363 R

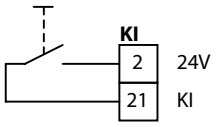
See GC 363 R (SIS), chapter 3.2 Active infrared control light curtain and self-monitored radar movement detector GC 363 SF.

8.1.3 Active infrared fan-shaped sensor and radar movement detector GC 362 R

See GC 362 R (SIS), chapter 3.4 Active infrared control light curtain and radar movement detector GC 362 R

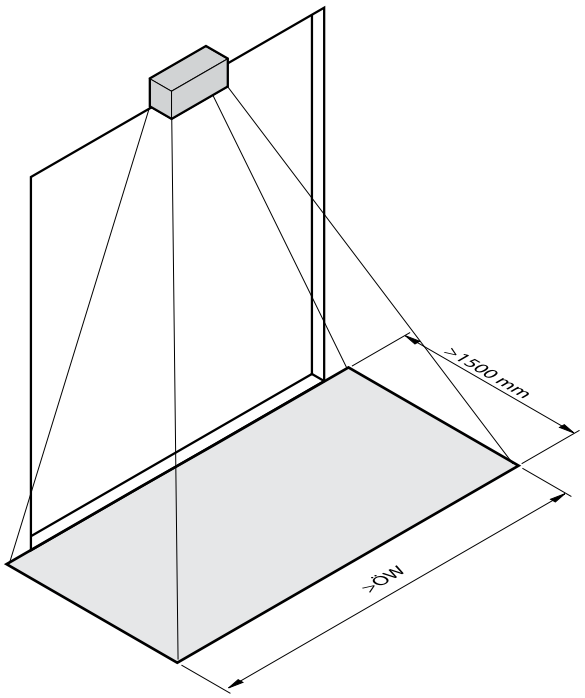
8.1.4 Push button (potential-free contact)

- Plastic elbow switch, white, mat. no. 114078
- Plastic elbow switch, stainless steel, mat. no. 114077
- Stainless steel elbow switch, mat. no. 119898
- Stainless steel elbow switch LS 990, surface-mounted, mat. no. 128582
- Stainless steel elbow switch LS 990, flush-mounted, mat. no. 128583



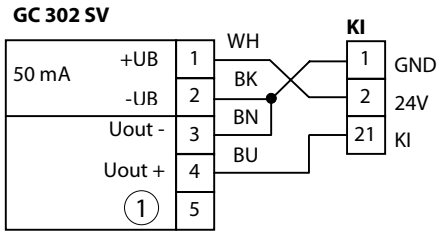
8.2 Doors on rescue routes

- ▶ Install self-monitored movement detector in the direction of emergency exit.
- ▫ Upon activation, the output of the contact sensor inside is open; GND is applied to the KI input.
- ▶ Set the detection field and sensitivity of the radar movement detector as per AutSchR:
- ▫ Detection field = ÖW × 1.5 m, speed greater than 10 cm/s.



8.2.1 Radar movement detector GC 302 SV

- ▫ GC 302 SV, black, mat. no. 124089



1 not used

- ▫ GC 302 SV according to RAL, mat. no. 124090 (the remote control does not work with detector hood mounted, LED not visible)
- ▫ GC 302 SV is a self-monitored direction-sensitive radar movement detector with analogue voltage output (0 V … 10 V).
- ▶ Follow installation instructions, mat. no. 123456.
- ▫ DPS: Set parameter C1 to 03.
- ▫ ST220: Set parameter "KI contact type" to "voltage".
  For further information see GC 302 R (KI), chapter 8.1.1 Radar movement detector GC 302 R.

8.2.2 Active infrared fan-shaped sensor and radar movement sensor GC 362 SF

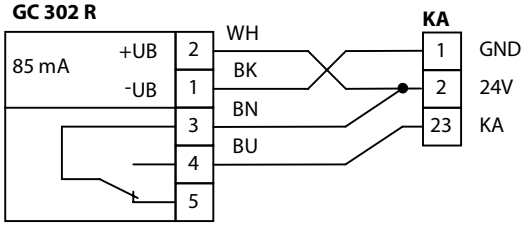
See GC 362 SF (SIS), chapter 3.5 Active infrared control light curtain and self-monitored radar movement detector GC 362 SF.

9 Contact sensor outside

- The KA input is only active in operating mode Au.
- During activation, the output of the contact sensor outside is closed (24 V applied at the KA input).

9.1 Radar movement detector GC 302 R

- See GC 302 R (KI), chapter 8.1.1 Radar movement detector GC 302 R.



9.2 Active infrared fan-shaped sensor GC 363 R

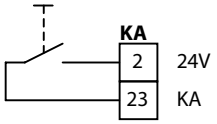
See GC 363 R (SIS), chapter 6.1.1 Active infrared control light curtain (GC 339, GC 333) with safety/activation sensor (GC 363 R, GC 362 R).

9.3 Active infrared fan-shaped sensor and radar movement detector GC 362 R

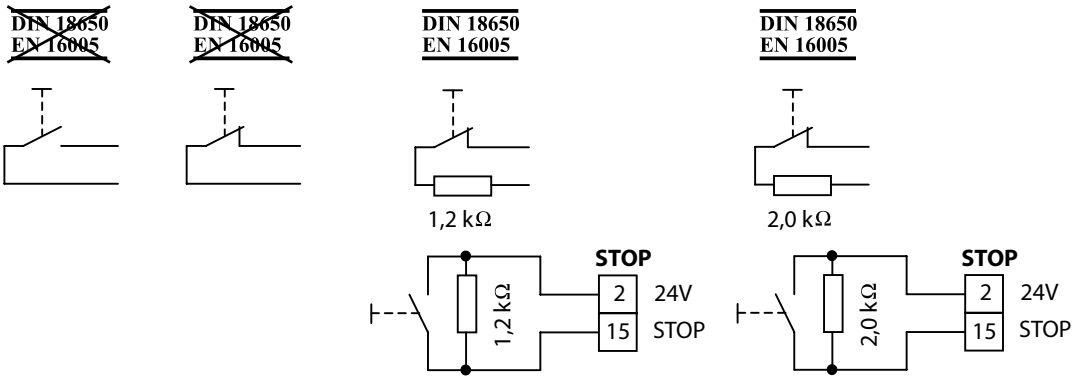
See GC 362 R (SIS), chapter 6.1.1 Active infrared control light curtain (GC 339, GC 333) with safety/activation sensor (GC 363 R, GC 362 R).

9.4 Push button (potential-free contact)

- See push button (KI), chapter 8.1.4 Push button (potential-free contact).



10 Stop



With DPS:	Cn = 01	Cn = 02	Cn = 12	Cn = 20
With ST220:	STOP contact type = closer	STOP contact type = opener	STOP contact type Terminating 1.2 kΩ	Terminating Terminating 2.0 kΩ

For personal protection as per DIN 18650 and EN 16005:

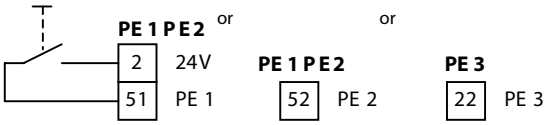
▶ Connect terminating resistance to monitor the input in accordance with the configuration.

11 Programmable inputs

The control features three programmable inputs, PE1 (terminal 51), PE2 (terminal 52) and PE3 (terminal 22), that can be allocated different control functions. The inputs can be programmed using the display programme switch DPS or the service terminal ST220. The functions are described in the Service menu DPS section (2nd menu) and in the Service terminal ST220 section (Configurable inputs).

11.1 Switch function

- With DPS: Set E1, E2 or E3 to 10 (switch function) or 11 (switch function with closing after hold-open time).
- With ST220: Set PE1-, PE2- or PE3-function to "switch function" or "switch function OHZ".



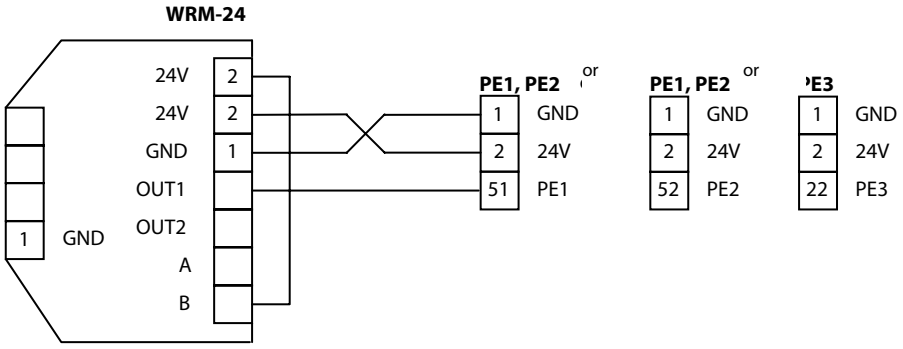
- During activation, the push button is closed (24 V is applied to inputs PE1, PE2 and PE3).
- The first switch contact opens the door and the next closes the door.
- For the switch function with closing after the hold-open time, the door closes automatically after the hold-open time elapses providing it was not closed via the switch beforehand.

▶ Check whether the door always opens completely with switch contact even if the operating mode "AU" winter is set.

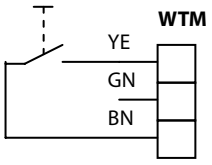
11.2 Radio activation

- Follow installation instructions and user manual.
- Parameter setting of contact type with:
  - DPS: Set E1, E2 or E3 to the required function (8, 9, 10, 11, 14).
  - ST220: Set "input signals", "configurable inputs", "PE1 function", "PE2 function" or "PE3 function" to the required function.

Push button with transmitting module

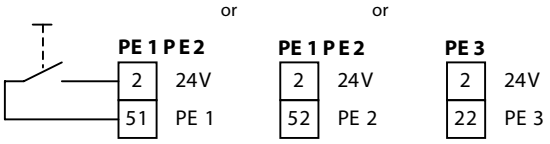


- The receiving module WRM-24 can be activated with the transmitting module WTM.
- Transmitting module WTM, mat. no. 131212, for clipping into a plastic elbow switch.
- Follow the installation instructions for the wireless programme AUT.



11.3 Pharmacy opening

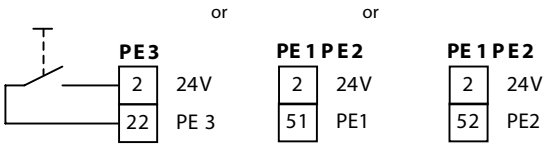
- ▶ Set function parameter for input used:
  - ▫ With DPS: Set E 1, E2 or E3 to 06.
  - ▫ With ST220: Set "PE1-", "PE2-" or "PE3-function" to "pharmacy".



- ▫ During activation, 24 V is applied to the input.
- ▫ The pharmacy opening function is only active in the nA operating mode.
- ▶ Use a push button as the activation element.

11.4 Emergency lock

- ▶ Set parameter for input (terminal) used:
  - ▫ With DPS: Set E 1, E2 or E3 to 07.
  - ▫ With ST220: Set "PE1-", "PE2-" or "PE3-function" to "emergency lock".



- ▫ The door closes and locks as soon as the contact is closed.
  - ▫ 24 V are applied to the control.
  - ▫ The door remains closed and locked as long as the contact is closed.
- ▫ When the emergency lock is active, the safety sensors "close" (SIS) and obstruction detection are not active.

12 WC control

(not with DCU1-2M)

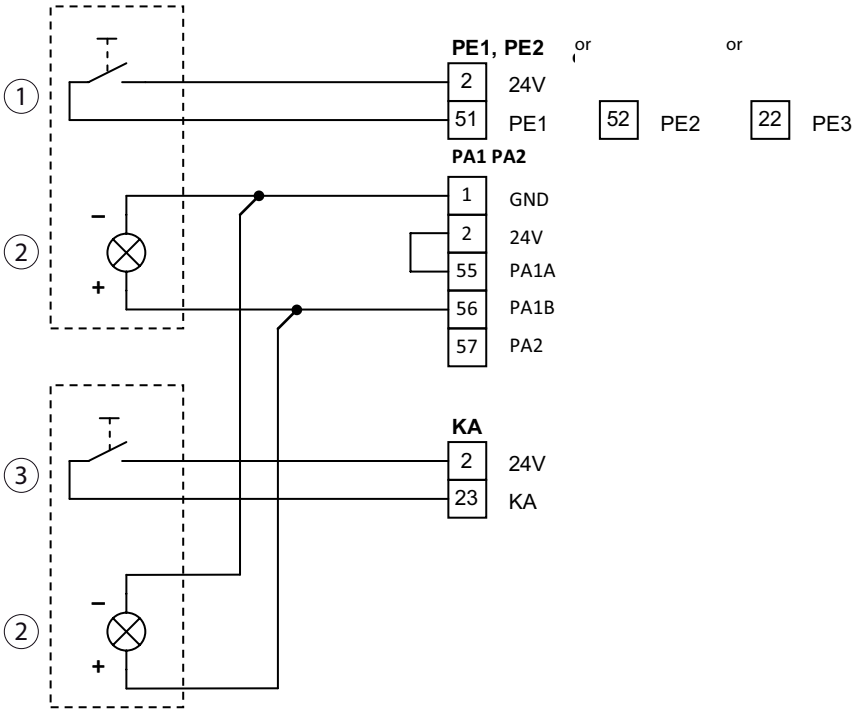
Setting the parameters with:

- DPS:
  - Set E1, E2 or E3 to 21 (WC control), depending on the input used.
  - Set A1 to 14 (LS).
  - Set A2 to 24 (fault WC timeout) if monitoring of permanent locking is required (signal horn to the lodge)
  - Set AC to 01 (open) or 03 (battery operation max. 30 minutes / 30 cycles, then open).
- ST220:
  - Set "input signals", "PE1-function", "PE2-function" or "PE3 function" to "WC control".
  - Set "output signals", "PA1 function" to "shop closing".
  - Set "Door parameters", "Power failure not NA" to "open" or "30 min open".

Accessories:

- AS 500 switch unit with illuminated display for disabled WC, mat. no. 120882 (2 units required)
- Optional: SLH220, SIGNAL HORN, flush-mounted, AS 500, AW, COMPLETE, mat. no. 115939

Push button with illuminated display "occupied"



1 Inside push button (switch unit with illuminated display)
2 OCCUPIED
3 Outside push button (switch unit with illuminated display)

Function

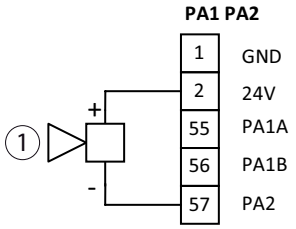
The control recognises the operating function "WC control" on the basis of the parameter set for the configurable input (PE1, PE2, PE3). If the WC is not occupied, the door is in automatic mode and is in the closed position. The OCCUPIED signs are off.

When the "outside push button" is activated, the WC door is opened. Once someone has entered the cubicle, the WC door is switched to shop closing mode by pressing the "inside push button" and the outside push button is blocked. The OCCUPIED signs light up. The drive keeps the door locked in the closed position by means of motor power. Pressing the "inside push button" again switches the operating mode back to automatic. The OCCUPIED signs go out. The door opens and the "outside push button" is cleared again.

When WCs are monitored for permanent locking, the "WC alarm" signal is triggered after 30 minutes and an acoustic signal (signal horn to the gate) is switched on. The time cannot be set.

In an emergency, the toilet door can be opened from the outside using the emergency opening switch. In the event of power failure, the door opens or remains in operation for max. 30 minutes or 30 cycles and then opens, depending on the AC parameter setting (power failure not NA).

Signal horn



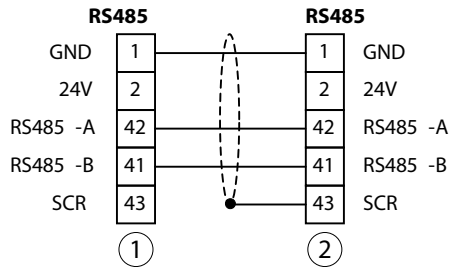
1 Signal horn SLH220 to the lodge (optional)

Emergency opening switch
See "emergency opening switch", chapter 7 Contact sensor authorised.

13 Interlocking door system, vestibule

- Two sliding doors use the same programme switch.
- The programme switch only indicates the fault messages of the first control.
- Interlocking door system: One door only opens if the other one is closed.
- Vestibule: Both doors run in the same mode of operation.

▶ Do not connect terminal 2. The programme switch is connected to the first control.



1 Control door 1
2 Control door 2

▶ Set parameters with DPS:
- First control: SL = 00
- Second control SL = 01 for interlocking door system
  SL = 02 for vestibule

▶ Set parameters with ST220:
- First control: "Interlocking door system vestibule = Master"
- Second control: "Interlocking door system vestibule = Slave interlocking door system" for interlocking door system
  "Interlocking door system vestibule = Slave vestibule" for vestibule

14 Mode of operation

- For sliding doors on rescue routes, the programme switch must be protected from unauthorised access e.g. by using a lockable version.
- The display programme switch DPS, the service terminal ST220 or GEZEconnects (mat. no. 133367) is required for setting control parameters and commissioning the door drive.

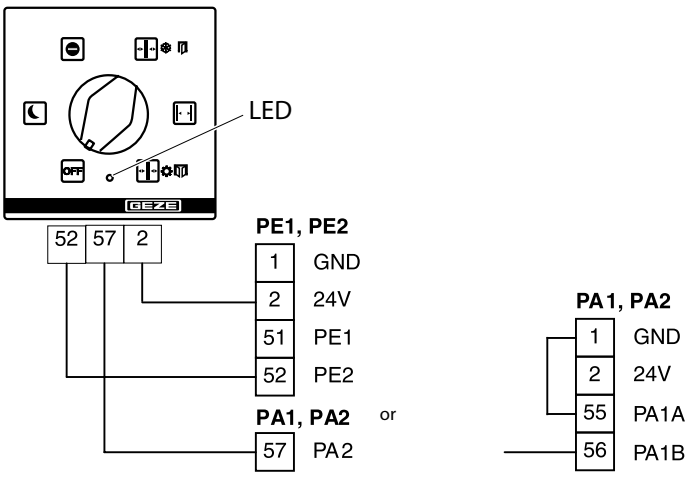
Symbol	Display	Explanation
OFF	OFF	SERVICE (only valid for mat. no. 151524 and 155810 in combination with DCU V3.3) The drive is switched to without function for service purposes. The door leaves can be moved freely by hand. Activation and safety sensors are without function. Drive motor and locking are switched off.
	nA	NIGHT The door is closed and locked. The door can only be opened while mode “contact sensor authorised (KB)” is active or via manual release.
	LS	SHOP CLOSING (one-direction operation from the inside to the outside) The door can be activated using contact sensor inside (KI) and contact sensor authorised (KB). The safety sensors "close" (SIS) are active. When activated, the door opens up to a reduced opening width set during commissioning.
	Au Winter	AUTOMATIC with reduced opening width. Activation is possible with contact sensor inside (KI), contact sensor outside (KA) and contact sensor authorised (KB). The safety sensors "close" (SIS) are active. When activated, the door opens up to a reduced opening width set during commissioning.
	do	PERMANENTLY OPEN The door is completely opened.
	Au Summer	AUTOMATIC with full opening width Activation is possible with contact sensor inside (KI), contact sensor outside (KA) and contact sensor authorised (KB). The safety sensors "close" (SIS) are active. When activated, the door opens up to full opening width.

14.1 Mechanical programme switch

The LED on the mechanical programme switch lights up after the service interval has expired or in the event of a fault.

- MPS, AS 500, mat. no. 113226
- MPS-ST, with key, AS 500, mat. no. 113227
- Accessories:
  - Surface-mounted cap single, AS 500, mat. no. 120503
- Operating modes:
  - OFF, nA, LS, Au Winter, do, Au Summer

▶ Follow installation instructions, (mat. no. 122611).



▶ Set parameters for input/terminal PE2:
  - With DPS: E2 to 01 for MPS
  - With ST220: "PE2-function" to "MPS"

▶ Set parameters for output/terminal PA1 and PA2:
  - With DPS: Set A1 or A2 to 04 for fault display MPS.
  - With ST220: Set "PA1-" or "PA2-function" to "fault MPS".

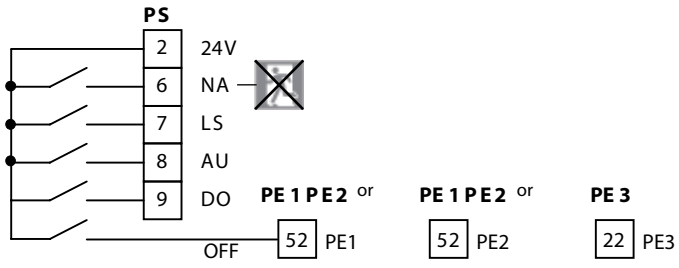
- If the mechanical programme switch is used, it is not possible to change the operating mode using the keypad programme switch, display programme switch or the inputs nA, LS, Au and do.

14.2 Switching the operating mode using push buttons or switches

In addition, it is possible to change between the operating modes nA, Au, LS, do and "OFF" using potential-free push buttons or switches.

- ▶ For the operating mode "OFF" the function parameter must be set for the input used.

If the drive is switched to the OFF operating mode, the door opens before the drive switches off.



- With DPS: Set E 1, E2 or E3 to 02.
- With ST220: Set "PE1-", "PE2-" or "PE3-function" to "OFF".

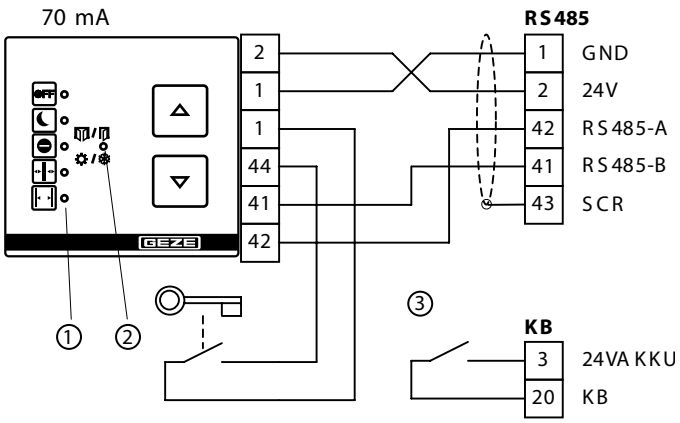
- The control switches to the desired operating mode if the level switches from GND to 24 V at the corresponding input.
- Operation using the keypad programme switch or display programme switch is only possible if there is no signal pending at the inputs nA, Au, LS and do.
- Locking the door (changing to operating mode nA) using a potential-free push button or switch is not possible for doors on rescue routes.

14.3 Keypad programme switch

- TPS, AS 500, flush-mounted, mat. no. 113231
- TPS SCT, AS 500, flush-mounted, with key push button, without profile half cylinder, mat. no. 113232

LEDs (1) for operating mode display indicate a fault code when a fault has occurred (see fault messages keypad programme switch).
LED (2) lights up with reduced opening width.

- Operating modes:
  - OFF, nA, LS, Au, do, Summer / Winter
- Operation of the programme switch can be blocked for unauthorised persons by using a key push button or assigning a password (see chapter 14.8).



1 LEDs for operating mode display
2 LED for reduced opening width
3 Additional contact

No TPS can be connected when PE2-function is "MPS" (only display possible).

- ▶ Follow installation instructions, mat. no. 122400.
- Accessories:
  - Profile half cylinder, mat. no. 090176
  - Additional contact, mat. no. 024467
  - Surface-mounted cap single, AS 500, mat. no. 120503
  - Surface-mounted cap double, AS 500, mat. no. 128609

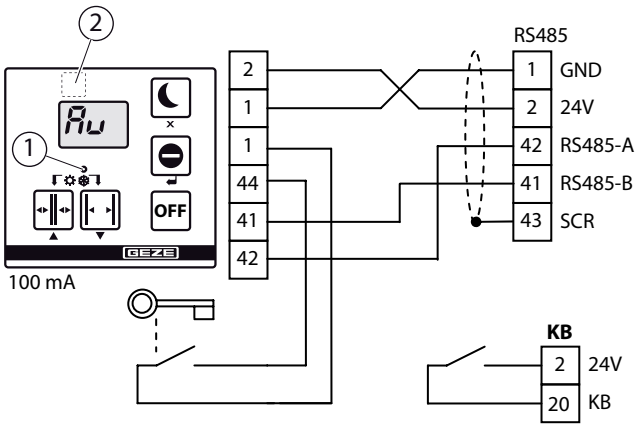
14.4 Display programme switch (DPS) with OFF key

- AS 500, DPS with OFF, flush-mounted, alpine white,
  mat. no. 151524
- AS 500, DPS with OFF and SCT, with profile half cylinder, flush-mounted, alpine white,
  mat. no. 155810
- Operating modes: OFF, nA, LS, Au, do, Summer / Winter opening width

▶ Follow the installation instructions

- A DPS cannot be connected if the PE2-function is set to "MPS" (only display possible).
- Changing the operating with the DPS is only possible if 24 V are not applied to nA, LS, Au, do or PE1 or PE2 if PE1, PE2 or PE3 is configured to OFF.
- Operation of the programme switch can be blocked for unauthorised persons by using a key push button or assigning a password (see chapter 14.8).
- Switching between summer/winter opening width:

▶ Press the ▲▼ keys simultaneously.



1 Display summer/winter (LED lights up for winter opening width)
2 Hidden service key

- A maximum of one keypad programme switch can be connected to the control together with a maximum of one display programme switch.

The control can be configured using DPS.
See Service menu, chapter 22.2.

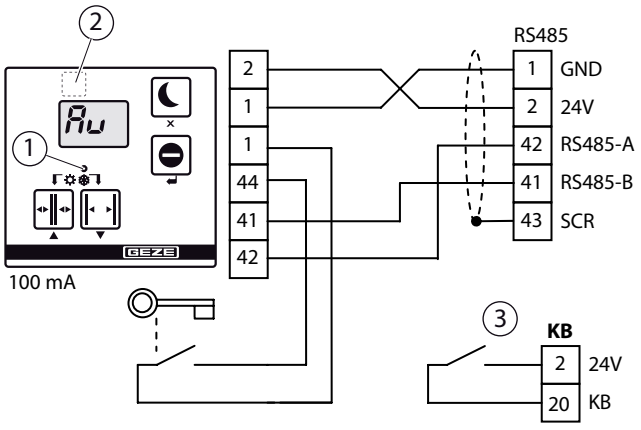
Accessories:
- Key push button SCT, single-pole, flush-mounted, AS 500 without profile half cylinder, mat. no. 117996
- Profile half cylinder, mat. no. 090176
- Additional contact, mat. no. 024467
- Surface-mounted cap single, AS 500, mat. no. 120503
- Surface-mounted cap double, AS 500, mat. no. 128609

14.5 Display programme switch (DPS) without OFF key

- AS 500, DPS without OFF, flush-mounted, alpine white,
  mat. no. 1515809
- Operating modes: nA, LS, Au, do, Summer/ Winter opening width

▶ Follow the installation instructions.

- The DPS without OFF key does not have an OFF function.
- For further information see display programme switch (DPS) with OFF key.
- Accessories:
  - Adapter frame, mat. no. 155851, for replacement of the old version DPS (mat. no. 103940) by DPS without OFF key.



1 Display summer/winter (LED lights up for winter opening width)
2 Hidden service key
3 Additional contact

14.6 Display programme switch, old version (mat. no. 103940)

The old version of the DPS can still be connected.
Connection and function as with the display programme switch without OFF key.

14.7 Reset function (DPS with OFF key, TPS)

In the OFF operating mode, the keys ▲ and ▼ can be pressed at the same time to trigger a software reset. The drive then behaves in the same way as after mains voltage switch-on and carries out initialisation. The parameter settings are not changed.

The reset function is not possible with the DPS without OFF key.

14.8 Blocking or releasing operation of TPS and DPS

14.8.1 With additional key push button (1st possibility)

With automatic standard sliding doors

- ▶ Press the key push button briefly to block function.
  - With the DPS, the operation lock is signalled by the display "- -" when any key is pressed.
  - With the TPS, the operation block is signalled by the LED for the respectively set operating mode flashing once when any key is pressed.
- ▶ Press the key push button again briefly for release. Operation is then permanently released.

For automatic sliding doors on escape and rescue routes

- ▶ The key push button has to be activated permanently to unlock the operation.
- ▶ Operation is blocked as soon as the key push button is no longer pressed.
  - With the DPS, the operation lock is signalled by the display "- -" when any key is pressed.
  - With the TPS, the operation block is signalled by the LED for the respectively set operating mode flashing once when any key is pressed.

14.8.2 Release with password (2nd possibility)

This requires previous setting of the 2-digit password in the drive Service menu (factory setting: no password).

- For release on the TPS:
- ▶ Enter the first digit of the password by the number of times the key is pressed, with
  - TPS: Key ▲
  - DPS: Key Au
- ▶ Enter the second digit of the password by the number of times the key is pressed, with
  - TPS: Key ▼
  - DPS: Key do
- After the password has been entered, operation of the programme switch has been released.
- Operation is blocked automatically 2 minutes after the last key has been pressed. With the TPS, the operation block is signalled by the LED for the respectively set operating mode flashing once when any key is pressed. With the DPS, the operation lock is signalled by the display "- -" when any key is pressed.

14.8.3 Permanent release of programme switch operation

- ▶ For permanent release, either fit a jumper between terminals 1-44 of the TPS or DPS

or

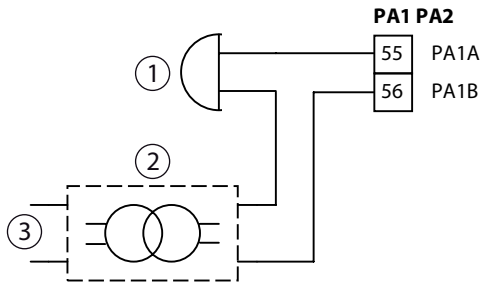
- ▶ set the value "00" (factory setting) as the password in the Service menu.

15 Configurable outputs

The control indicates various states via the two configurable outputs PA1 and PA2 (see Service menu). The outputs must be configured accordingly.

15.1 PA1 (gong)

PA1 is a potential-free relay contact,
switching voltage/current max. 24 V AC/DC / 0.5 A.



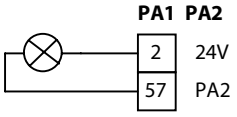
1 Gong
2 Bell transformer
3 Feeder

- ▶ Set parameters for the gong function:
  - With DPS: Set A1 or A2 to 01.
  - With ST220: Set "PA1-" or "PA2-function" to "Gong".

The contact closes as soon as SIS1 or SIS2 is activated.

15.2 PA2 (fault, fan)

PA2 is a transistor output,
switching voltage/current max. 24 V DC / 0.5 A.



- ▶ Set parameters for fault indication:
  - With DPS: Set A1 or A2 to 02.
  - With ST220: Set "PA1-" or "PA2-function" to "Fault closer".

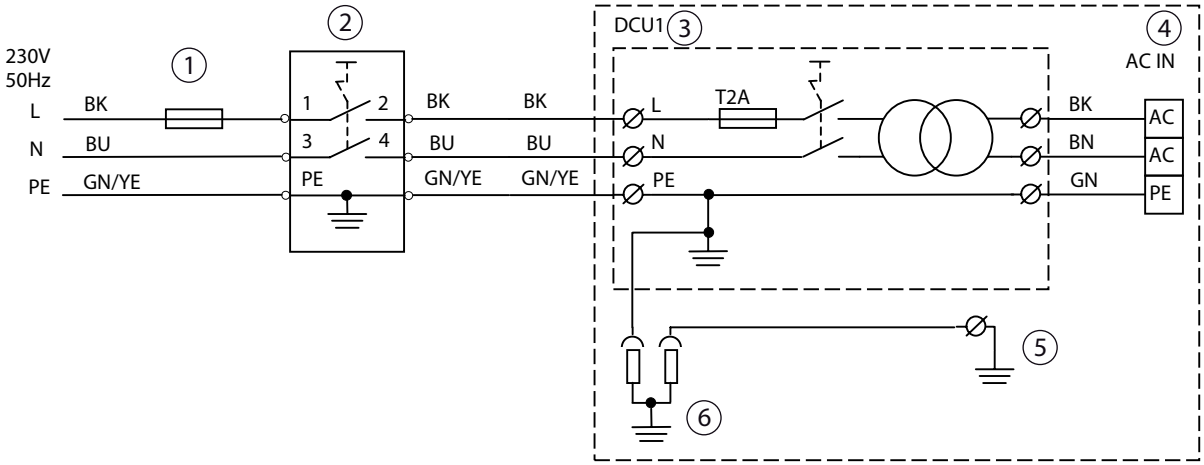
The output switches to GND as soon as the control detects a system fault. At the same time, the corresponding fault number is displayed on the display programme switch or keypad programme switch.

- ▶ A relay for galvanic isolation must be installed for forwarding the fault message (e.g. to a building management system).
- ▶ Set parameters for the use of a fan for cooling the motor:
  - With DPS: Set A1 or A2 to 07.
  - With ST220: Set "PA1-" or "PA2-function" to "Motor fan".

- Motor fan for Slimdrive, mat. no. 80533
- Motor fan for Powerdrive, mat. no. 123394

16 Mains connection

- Transformer for Slimdrive, mat. no. 106194
- Transformer for ECdrive, mat. no. 106530
- Transformer for Powerdrive, mat. no. 117975

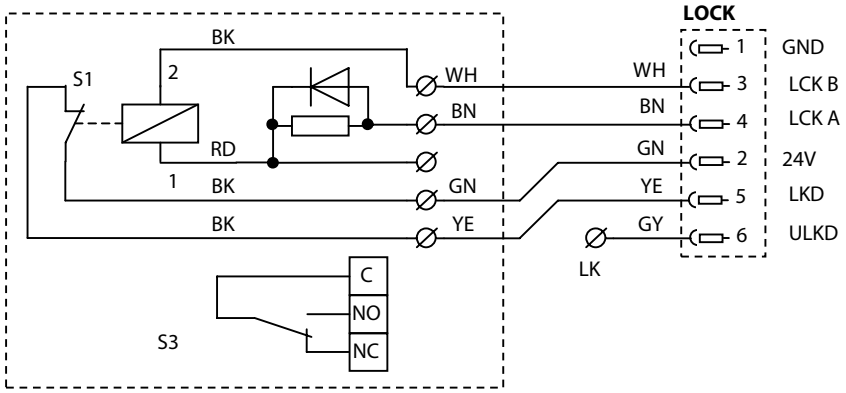


1 Mains fuse on site, min. 4 A slow-burning
2 Main switch (optional)
3 Transformer
4 Control
5 Cover earthing
6 Earthing connection

17 Locking

17.1 Locking by toothed belt

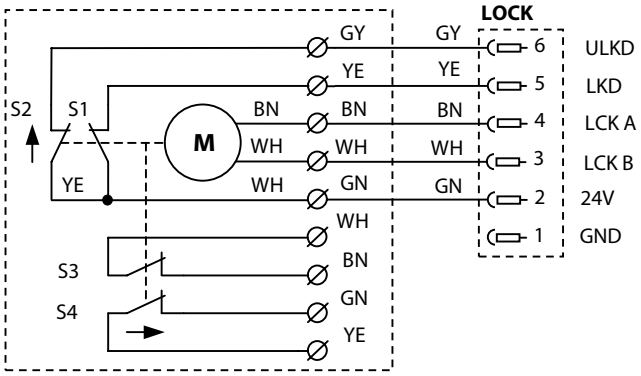
- Locking by toothed belt Slimdrive SL, SLT, SL NT, mat. no. 114004
- Locking by toothed belt Slimdrive SC, mat. no. 105275
- Locking by toothed belt ECdrive, mat. no. 117766
- Locking by toothed belt Powerdrive, mat. no. 114000



- Shown in unlocked state.
- Switch S3, mat. no. 019080, can be installed optionally, switching voltage/current max. 24 V AC/DC / 0.5 A.
- In the locked state, switches S1 and S3 are activated and the contact of switch S1 is opened.

17.2 Rod locking, break axle

- Rod locking Slimdrive SL, SLT, mat. no. 105680
- Break axle Slimdrive SF, mat. no. 107574



- Shown in unlocked state.
- Switches S3 and S4, mat. no. 105684, can be installed optionally with break axle, switching voltage/current max. 24 V AC/DC / 0.5 A.
- In the locked state, switches S1 and S3 are activated, the contacts of switches S1 and S3 and the contacts of switches S2 and S4 are opened.

The following rod lockings are used for drives with RC2:

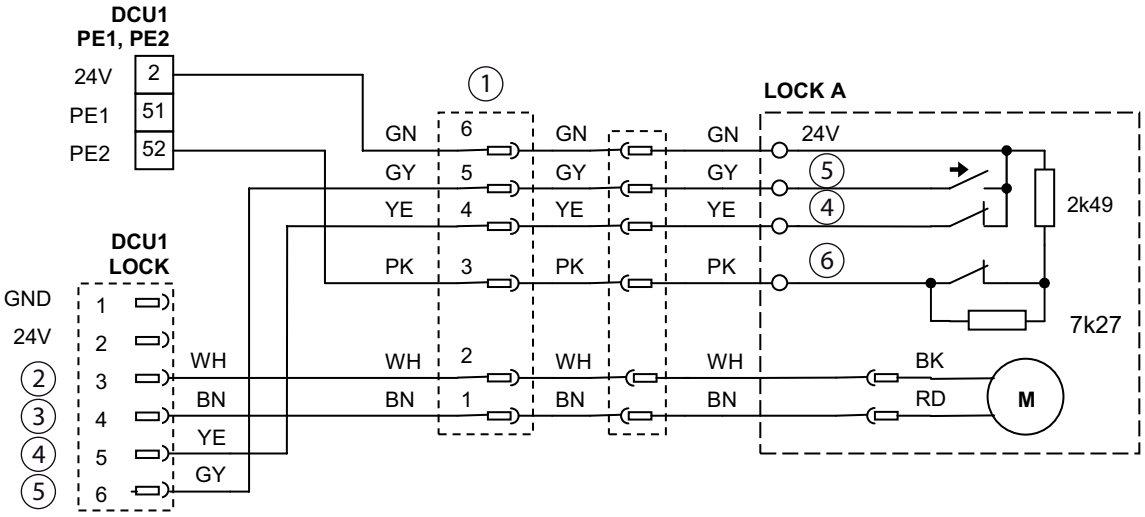
2-leaf SL RC2,	without potential-free contact	mat. no. 134044
2-leaf SL RC2,	with potential-free contact	mat. no. 136105
2-leaf SLC RC2,	with potential-free contact	mat. no. 140244
1-leaf, right closing SL RC2,	with potential-free contact	mat. no. 139769
1-leaf, left closing SL RC2,	with potential-free contact	mat. no. 139770

17.3 Hook bolt Lock A

- Hooked locking device Lock Basis 1 HRS, mat. no. 156679
- Depending on the drive, number of leaves and direction of closing movement, the following accessories are used:
  - Lock A Integration EC 2-leaf, 1-leaf, right, mat. no. 153658
  - Lock A Integration EC 1-leaf left, mat. no. 153660
  - Lock A Integration SL NT 2-leaf, 1-leaf right, mat. no. 153671
  - Lock A Integration SL NT 1-leaf left, mat. no. 153672

Set the parameters with:

	Parameter	Value	Description
DPS	E2	20	Manual unlocking
	Rt	05	Lock A, hook bolt lock
ST220	Door parameters \ electric locking	Lock A	Hook bolt lock
	Input signals \ PE2	Lock A	Manual unlocking



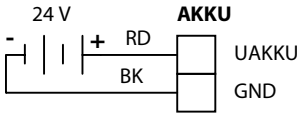
Shown in "unlocked" state

1 Rod contacts (Lock A Integration)
2 Bolt B
3 Bolt A
4 Locked
5 Unlocked
6 Manually unlocked

18 Rechargeable battery

Rechargeable battery, mat. no. 106863

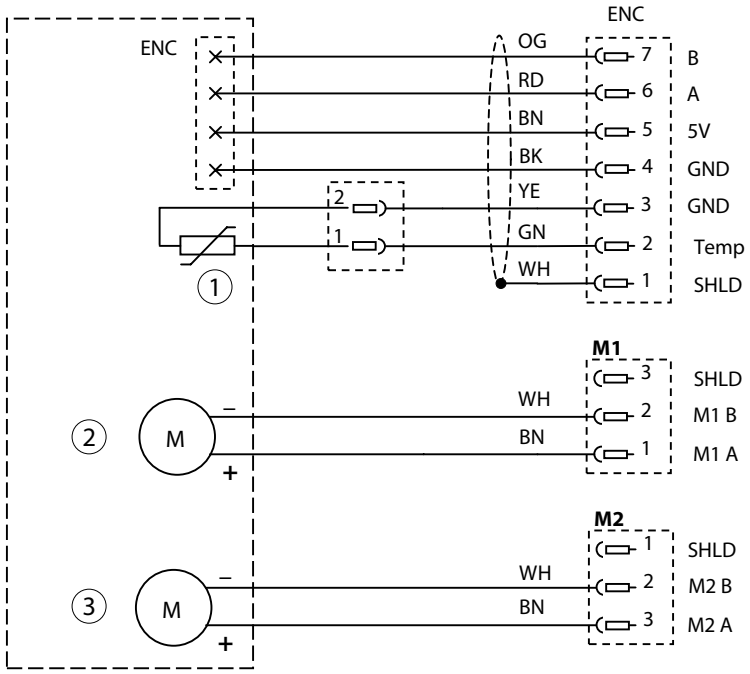
- Voltage in charged state: ≥26 V (with rechargeable battery unplugged).



19 Motor

Motor 1: Motor DCU1, mat. no. 105009.

Motor 2: Only with tandem motor DCU1-2M, mat. no. 102517.

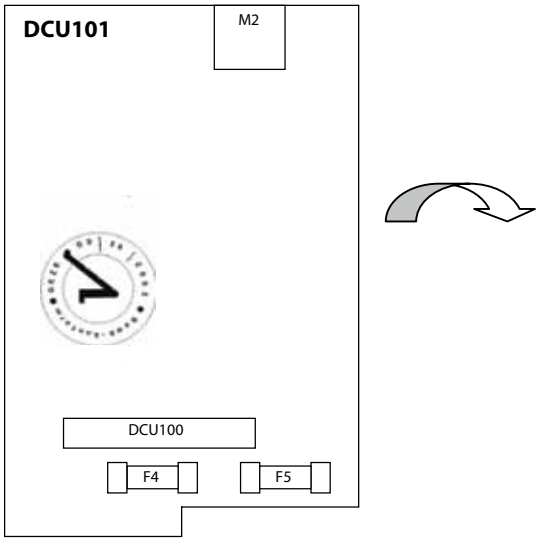


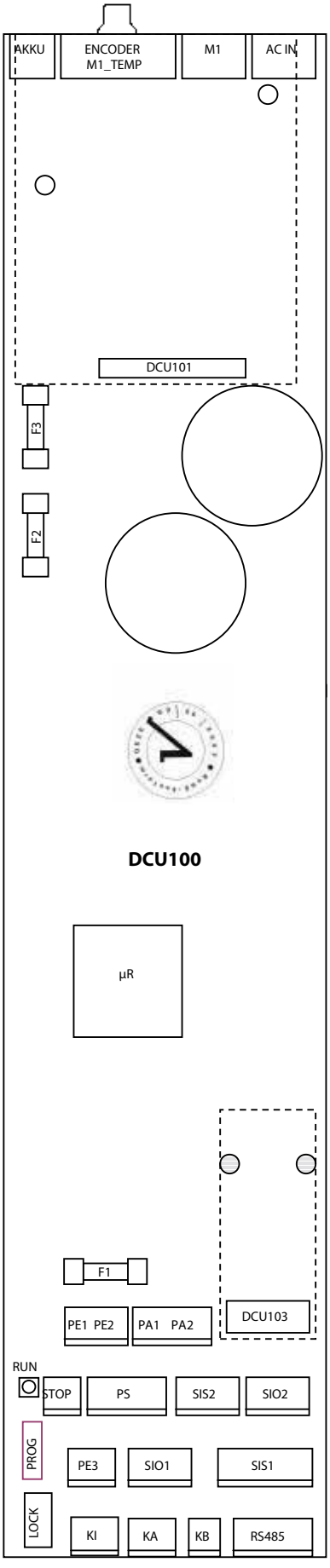
1 Temperature sensor
2 Motor 1
3 Motor 2

20 Control

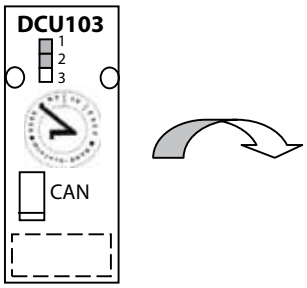
Control DCU1, mat. no. 105010.
Terminal bag, mat. no. 106047.

Control DCU1-2M, mat. no. 105011.
Terminal bag, mat. no. 106047.





- DCU100:
  - F1 24 V EXT (1.25 AT, 5x20 mm)
  - F2 AC IN (6.3 AT, 5x20 mm)
  - F3 rechargeable battery (6.3 AT, 5x20 mm)
  - RUN Run-LED
- DCU101:
  - F4 AC IN (6.3 AT, 5x20 mm)
  - F5 rechargeable battery (6.3 AT, 5x20 mm)



- DCU103
  - 1-2 CAN terminating resistance inactive
  - 2-3 CAN terminating resistance active
- RUN-LED
  - LED on: Everything OK.
  - LED flashes slowly (0.25 Hz): Drive not taught.
  - LED flashes quickly (2 Hz): Fault.

21 Commissioning and service

Commissioning and service can be carried out using the display programme switch DPS or the service terminal ST220.

21.1 Production test

The production test is used for functional testing of the power supply, control, motor, rechargeable battery and locking assembly groups (if present). The production test is carried out on the drive before it is installed on the wall and without sliding leaves.

DANGER
Danger of fatal injury due to electric shock.
- ▶ Interrupt power supply.

- ▶ Connect power supply to 230 V AC and use an r.c.c.b.
- ▶ Connect the rechargeable battery.
- ▶ Lock the lock (if present) by hand. The bolt comb must fully engage in the toothed belt.
- ▶ Connect the display program switch DCU1.

- ▶ Connect terminals 1 and 44 of the display programme switch.

- ▶ Reset the control to factory settings using CP, display programme switch indicates LE.
- ▶ Press the service key and Au simultaneously (see Service menu, operation DPS), the production test starts:
  - P1 Locking unlocked.
  - P3 Motor rotates approx. 20 cm in one direction and then approx. 20 cm in the other direction.
  - P2 Locking locked.
  - P6 Test of whether a rechargeable battery is connected.
  - A0 Rechargeable battery not detected.
  - A1 Rechargeable battery detected.
- If a rechargeable battery is connected, it must be detected. It is only checked whether the rechargeable battery is present and not whether the charge state of the battery is sufficient.
- If a fault occurs during the production test, the test is aborted and the fault displayed.
- ▶ Press the ↵ key.
- ▶ With ST220, start the production test via the Service menu under the item "Start production test → yes".
- ▶ Unplug the rechargeable battery after the production test and leave it unplugged until commissioning.

21.2 Commissioning

21.2.1 Assembly and installation

- Installation is complete (see installation instructions of the corresponding sliding door drive).
- Sensors are correctly configured and aligned.
- ▶ Clear the sensor detection field.
- Electrical installation is complete. There are no cables in the travel path of the leaves and drivers. All cables have been secured with cable ties.
- ▶ Push leaves by hand from the closed position into the completely open position and back again. It must be possible to move them freely (movement force less than 100 N).
- ▶ Align lock. When the leaves are completely closed, the lock must be easy to lock and unlock by hand.

21.2.2 Commissioning with DPS

CAUTION
Danger of injury by opening door leaves during commissioning.
- ▶ Switch off all safety devices.
- ▶ Step out of the travel path.

- ▶ If not yet installed, connect the display programme switch.
  A keypad programme switch or mechanical programme switch that is already connected will not interfere with commissioning with the display programme switch.

- ▶ To commission a sliding door on rescue routes, terminals 1 and 44 of the display programme switch must be connected or the connected key push button must be activated.
- ▶ If a sliding door on a rescue route is to be operated with reduced opening width, connect terminals 2 and 6 on the control DCU1-2M. For sliding doors on rescue routes, the reduced opening width must correspond to at least the required escape route width.

- ▶ Plug the rechargeable battery into the control.
- ▶ Switch on 230 V at the transformer.
- ▫ After power supply has been restored, a brand-new control indicates the function *LE* on the display programme switch, whereas a control that has already been in operation will indicate the mode of operation last used before the voltage supply was switched off.
- ▶ Configure control, in particular:
  - ▫ *At* Drive type
  - ▫ *EF* Number of door leaves
  - ▫ *rt* Bolt type
  - ▫ *C1* Contact sensor inside
  - ▫ *S1*, *F1*, *S2*, *F2*, *S3*, *F3*, *S4*, *F4* safety sensors (function and contact type)
- ▶ Close the door up to approx. 5 cm.
- ▶ Select the function *LE* in the Service menu.
- ▶ Teach the control by pressing the enter key.

CAUTION
The leaves accelerate quickly when the leaf mass is being determined.
- ▶ Step out of the travel path.

- ▫ The door leaves open and close several times. The control determines the following parameters:
  - ▫ *L0* Start teaching
  - ▫ *L1* Test the rotary transducer
  - ▫ *L3* Opening width, closing position
  - ▫ *L2* Locking by toothed belt
  - ▫ *L8* Friction
  - ▫ *L4* Leaf mass
  - ▫ *L6* Reduced opening width (with control DCU1-2M only when a jumper is connected to set the reduced opening width on terminal strip PS between terminal 6 (NA) and terminal 2 (+24V))
    - ▫ The leaves come to a standstill with *L6*.
    - ▶ Push the leaves by hand to the required reduced opening width and confirm (↵).

    For doors on rescue routes, the reduced opening width must be larger than or the same size as the required escape route width (construction approval). The control limits the reduced opening width to at least 30 percent of the maximum opening width.
    - ▫ Automatic takeover of the current position occurs after 20 sec. only with control DCU1.
  - ▫ *L7* End of teaching
- ▶ Conform to store the values determined (↵).
- ▫ If a fault occurs, the teaching process is aborted with the message *EL*.
- ▶ Display the faults by pressing *Er*, eliminate the cause and start teaching again.
- ▶ Remove the connection between terminals 2 and 6 of the control again.
- ▶ Change to operating mode.
- ▫ After a brand-new control has been taught, it automatically changes to operating mode *Au*.
- ▶ Check the running behaviour of the door and adjust other parameters if necessary.
- ▶ Clear fault memory *oE*.
- ▶ Unplug display programme switch if necessary.

21.2.3 Commissioning with ST220

CAUTION
Danger of injury from moving door leaves.
The door leaves move during commissioning.
▶ Step out of the door leaf travel path.

▶ If a sliding door on a rescue route is to be operated with reduced opening width, connect terminals 2 and 6 on the control DCU1-2M.
▫ For sliding doors on rescue routes, the reduced opening width must correspond to the prescribed escape route width.
▶ Plug the rechargeable battery into the control.
▶ Switch on 230 V at the transformer.

After power supply has been restored, a brand-new control indicates the function non-taught initialisation on the ST220. A control that has already been in operation will indicate the mode of operation last used before the voltage supply was switched off.

▶ Configure control, in particular:
- ▫ Number of leaves — Number of door leaves
- ▫ Drive type — Type of drive
- ▫ Locking electric — Bolt type
- ▫ KI — Type of contact and delay contact sensor inside
- ▫ SI1, SI2, SI3, SI4 — Type of contact and function of the safety sensors

▶ Close the door up to approx. 5 cm.
▶ Teach the drive by selecting "Start teaching -> yes".
▫ The door leaves open and close several times. The control determines the following parameters:
- ▫ Teaching programme rotary transducer — Check the rotary transducer
- ▫ Teaching programme opening width — Opening width, closing position
- ▫ Teaching programme bolt test — Toothed belt locking
- ▫ Teaching programme movement force — Movement force / friction
- ▫ Teaching programme acceleration — Leaf mass (the leaves accelerate quickly)
- ▫ Red. opening width learning prog. — With control DCU1-2M only when a jumper is connected to set the reduced opening width on terminal strip PS between terminal 6 (NA) and terminal 2 (+24V). The leaves come to a standstill in the teaching programme "reduced opening width".
  ▶ Push the leaves to the required reduced opening width and confirm (↵) (automatic takeover of the current position after 20 s only with DCU1).

  For doors on rescue routes, the reduced opening width must be larger than or the same size as the required escape route width (construction approval). The control limits the reduced opening width to at least 30 percent of the maximum opening width.
- ▫ Teaching programme quit teaching — End of teaching

▶ Conform to store the values determined (↵).

If a fault occurs, teaching is aborted with the message "fault during teaching".

▶ Display the fault in the menu item "fault memory-current faults", eliminate the cause and start teaching again.
▶ Remove the connection between terminals 2 and 6 of the control again.
▶ Change to operating mode. After a brand-new control has been taught, it automatically changes to operating mode AU.
▶ Check the running behaviour of the door and adjust other parameters if necessary.
▶ Clear the fault memory.
▶ Unplug ST220.

21.2.4 Functional check for the automatic sliding door

- ▶ Switch off drive at power switch and wait until battery relay switches off.
- ▶ Switch the drive back on at the mains switch.
  - ▫ Self-test runs.
- ▶ With the ST220, choose the operating mode OFF or with DPS clear the motor Fr.
- ▶ Mount drive hood and turn locking pin back in if necessary.
- ▶ With the ST220 select the operating mode Au or with DPS switch the motor on Fo.
- ▶ Check function and detection field of all safety sensors "close".
- ▶ Check function and detection field of all safety sensors "open".
- ▶ Check the function of all contact sensors.
- ▶ Check locking by changing to operating mode nA and unlocking by changing to operating mode Au.

21.2.5 Commissioning the interlocking door system and vestibule

Both controls are commissioned like two individual controls
During the commissioning of one control, the other must be separated from the power supply.

- ▶ Set parameters, see Chapter 14 Interlocking door system, vestibule.
- ▶ Switch off both controls.
  - ▫ A programme switch is only connected to the first control.
- ▶ Switch both controls on within 50 s.

21.2.6 Documentation

- ▶ Create test log.
- ▶ Carry out safety analysis and enter installed safety options into the safety analysis.
- ▶ Supplement classification on identification plate.

21.3 Service

21.3.1 Service with DPS

The drive must be re-taught after changes have been made, particularly after the opening width has been changed.

- ▶ Check function and correct setting of all safety sensors.
- ▶ Check function and correct setting of all activation sensors.
- ▶ Read out number of cycles and operating duration (menu item SA).
- ▶ Note faults in the fault memory Er and oE.
- ▶ Clear fault memory oE.
- ▶ Reset service display (CS).

21.3.2 Service with ST220

The drive must be re-taught after changes have been made, particularly after the opening width has been changed.

- ▶ Check function and correct setting of all safety sensors.
- ▶ Check function and correct setting of all activation sensors.
- ▶ Read out number of cycles and operating duration:
  - ▫ Menu item "Diagnosis → current values → internal values → cycles/operating hours"
- ▶ Read out fault memory and note faults:
  - ▫ Menu item "Diagnosis → fault memory → current faults / old faults"
- ▶ Select fault with * and confirm with (↵). Cause of fault is displayed.
- ▶ Clear fault memory:
  - ▫ Menu item "Diagnosis → clear fault memory"
- ▶ Reset service display:
  - ▫ Menu item "Diagnosis → clear maintenance → yes"

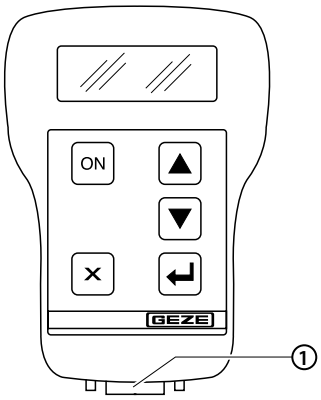
22 Service menu

22.1 Service terminal ST220

- Service terminal ST200, mat. no. 087261
- The drive can be commissioned with service terminal ST220, software version from v2.1.

22.1.1 Operation of ST220

Key	Function
▲	Cursor upwards Increase number value Scroll upward (if key is pressed longer than 2 s)
▼	Cursor downwards Decrease number value Scroll downward (if key is pressed longer than 2 s)
×	Cancel input Any input can be aborted by pressing the key ×. The input position then changes to the first menu position or one menu level back.
↵	Select Update display. Accept new value



Display immediately after connection	
G E Z E **Service terminal** **2.1** **XXXXXYWWJJZZZZZZV**	Software version ST220 v2.1 Serial number ST220

22.1.2 Service mode ST220

- The switch to service mode occurs with connection of the service terminal to DCU1.
- Service is possible in operating modes LS, AU and DO.
- In service mode, the door remains in operation in the current operating mode (not with teaching activated or with Fo display).

Display after connection to the door control		
SL NT 3.3 D1 **DCU1_2M 1.6 D1** **Automatic Summer** **Static**	Drive type	DCU100 Software version V3.3, hardware version D1
	Additional PCB DCU101	DCU101 Software version V1.6, hardware version D1
	Mode of operation: Automatic	Season: Summer
	Current operating mode (e.g. static condition) or fault message	

22.1.3 Password prompt ST220

If a password has been assigned in the menu "Diagnosis", "Change password", "Service 1", this is requested before the service menu can be entered.

```
Password
0---
*
```

- ▶ Enter the 4-digit password comprising figures and letters (0 … 9, A … Z, a … z) using the keys ▲ and ▼. The position to be entered is indicated in the line below by the * symbol.
- ▶ Confirm entered position and change to next position using the ↵ key.
- ▶ Abort entry using the key × .
- ▶ After entering the password, confirm by pressing the ↵ key.

22.1.4 Service menu ST220

Mode of operation

Designation	Setting values		Explanation
			
Mode of operation	OFF Night Shop closing Automatic Permanently open	OFF Night Shop closing Automatic Permanently open	Current operating mode is displayed and can be changed. If an MPS is connected, it is not possible to change the operating mode via the ST220.
Season	Summer Winter	Summer Winter	Full opening width Reduced opening width
Open doors	▲ - Key		

Door parameters

Designation	Setting values		Explanation
			
No. of leaves	Close on one side **Close centrally**	Close on one side **Close centrally**	–
Drive type	**Unknown** Slimdrive SC Slimdrive SF Slimdrive SL Slimdrive SL NT Slimdrive SL BO Slimdrive SL CO48 Slimdrive SLT Slimdrive SLV ECdrive ECdrive CO48 Powerdrive PL ECdrive BO TSA 360NT BO Powerdrive PL CO48 Slimdrive SL NT-CO48 Slimdrive SLT-CO48	**Unknown** Slimdrive SC Slimdrive SF Slimdrive SL Slimdrive SL NT Slimdrive SLT Slimdrive SLV ECdrive Powerdrive PL	–
Drive serial no.	000000000000	000000000000	12-digit serial number Current input position is marked with an asterisk. Select input position using ▲ or ▼ and confirm using ↵ Then select number using ▲ or ▼ and confirm using ↵
Maintenance message after operating time	0, 1 … **12** … 99	0, 1 … **12** … 99	months 0: no maintenance message
Maintenance message after cycles	0, 100,000 … **500,000**…3,000,000	0, 100,000 … **500,000**… 3,000,000	Cycles 0: no maintenance message Cycle: open from closed position and close completely again. For DCU1-RD: Maintenance message presetting after 200,000 cycles.
Interlocking door system, vestibule	**Master** Slave interlocking door system Slave vestibule	**Master**	Interlocking door system and vestibule: The same programme switch is used for two doors (DPS, TPS, MPS). Interlocking door system: Two doors – one only opens when the other is closed.
Power failure NA	**No function** Open	**No function** Open	–

Designation	Setting values		Explanation
			
Power failure not NA	**No function**		Behaviour of the drive in case of a power failure in operating modes LS, AU and DO.
	Open	**Open**	Open and switch off
	Close		Close and switch off
	30 min. open		30 min. max. 30 cycles with battery, then open and switch off.
	30 min. close		30 min. max. 30 cycles with battery, then close and switch off.
Battery fault	**No function**		
	Open	Open	Open and switch off in operating modes AU and LS.
Open in case of fault	**No**		
	Yes	Yes	The door opens in the event of a fault (see fault list for details)
Electric locking	**Without**	**Without**	Control is taught during commissioning whether or not a bistable lock is used. If a motor-driven lock is used, it must be configured before teaching, as otherwise a fault message will occur during teaching.
	Bistable	Bistable	
	Motor-driven	Motor-driven	
	Working current	Working current	
	Static current	Static current	Hook bolt lock
	Lock A	Lock A	
GEZE bus address	**0**, 1 … 63	**0**, 1 … 63	–

Movement parameters

Designation	Setting values		Explanation
			
Opening speed	03 04…10 12…20 25…**50**…80 cm/s		Speed during opening *)
Closing speed	03 04…10 12…**20** 25…80 cm/s		Speed during closing *)
Latching action open	**00** 01…07 cm/s	**00** 01…07 cm/s	Final speed in the open position
Latching action closed	**00** 01…07 cm/s	**00** 01…07 cm/s	Final speed in the closed position
Reduced profile	None	None	No reduced speed
	Open and closed	Open and closed	Reduced speed before open position and closed position
	Open	Open	Reduced speed before open position
	Closed	Closed	Reduced speed before closed position
Acceleration	1 … **20** …30 ×10 cm/s²		Acceleration and braking during opening and closing *)
			*) The maximum speed and acceleration depend on the door weight and friction.
Stat. force open	10 20…**150**…250 N		Maximum static force during opening
Stat. force close	10 20…**150**…250 N		Maximum static force during closing

WARNING! ~~DIN 18650 EN 16005~~

Forces greater than 150 N can lead to serious physical injuries and are not permitted as per DIN 18650/EN 16005.

- Note that forces exceeding 150 N are only permitted if additional safety measures are taken.

Permanent closing pressure	**00** 01… 10 12…20 25 90 N	Force with which the drive presses on the door leaf in the closed position.
Initial closing pressure	00 01… 10 12…20 25…**120**…150 N	Initial closing pressure helps the door leaf slide into a rubber seal. It is applied for 0.7 sec. as soon as the closed position has been reached.
Summer hold-open time	00 **01**…10 12…20 25…60 s	–

Designation	Setting values		Explanation
			
Winter hold-open time	00 **01**…10 12…20 25…60 s		–
Hold-open time contact authorised	00 **01**…10 12…20 25…60 s		–
Dyn. extension of hold-open time	**No** Yes	**No** Yes	Dynamic extension of hold-open time refers to the summer and winter hold-open times. If the door cannot close fully between 10 successive activations, the hold-open time is increased by one second, repeatedly if necessary. Once the door can close fully again, the configured hold-open time is used again.
Reversing limit	01 02…**06**…10 12…20 25 mm		If the distance between the door leaves (single leaf: the distance between leaf and side part) during closing is smaller than the reversing limit, the door does not reverse if it hits an obstacle. It stops at the obstacle.

Input signals

Safety sensors					
Designation	Setting values		Explanation		
					
SI1– terminal SIS1 current state	Indication of state, contact type and function		Safety device 1		
SI1– terminal SIS1 type of contact	Not used **Opener**	Not used **Opener**	–		
SI1 – terminal SIS1 function	**SIS rev** SIS and KI SIS and KA SIS slow SIO stop SIO slow SIO break-out	**SIS rev** SIS and KI SIS and KA SIS slow SIO slow	–	SIS rev SIS and KI SIS and KA SIS slow SIO stop SIO slow SIO break-out	Door reversed Reversing during closing. Activation function KI in the closed position. Reversing during closing. Activation function KA in the closed position. Door brakes and continues closing at a slower speed. Door stops during opening. Door brakes during opening and continues opening at slower speed. Door stops when breakout leaves are broken out
SI2 – terminal SIS2 current state	Indication of state, contact type and function		Safety device 2	SIS slow	
SI2 – terminal SIS2 contact type	**Not used** Opener	**Not used** Opener	–		
SI2 – terminal SIS2 function	**SIS rev** SIS and KI SIS and KA SIS slow SIO stop SIO slow SIO break-out	**SIS rev** SIS and KI SIS and KA SIS slow SIO slow	–		
SI3 – terminal SIO1 current state	Indication of state, contact type and function		Safety device 3		
SI3 – terminal SIO1 contact type	**Not used** Opener	**Not used** Opener	–		

Safety sensors			
Designation	Setting values		Explanation
			
SI3 – terminal SIO1 function	SIS rev SIS and KI SIS and KA SIS slow **SIO stop** SIO slow SIO break-out	SIS rev SIS and KI SIS and KA SIS slow **SIO slow**	–
SI4 – terminal SIO2 current state	Indication of state, contact type and function		Safety device 4
SI4 – terminal SIO2 contact type	**Not used** Opener	**Not used** Opener	–
SI4 – terminal SIO2 function	SIS rev SIS and KI SIS and KA SIS slow **SIO stop** SIO slow SIO break-out	SIS rev SIS and KI SIS and KA SIS slow **SIO slow**	–
STOP current state	Indication of state and contact type		Stop
STOP contact type	**Not used** Closer Opener Terminating 1.2 kΩ Terminating 2.0 kΩ	**Not used**	If Stop is active, the door leaf brakes immediately and the drive clears. DIN 18650 EN 16005 In the case of connection with 1.2 kΩ or 2.0 kΩ the signal is monitored for short-circuit and cable breakage.

Activation sensors				
Designation	Setting values		Explanation	
				
KB current state	Indication of state, contact type		Contact sensor authorised	
KB contact type	Not used **Closer**	Not used **Closer**	–	
KI current state	Indication of state, contact type and activation delay		Contact sensor inside	
KI contact type	Not used **Closer** Opener Voltage Frequency	 Opener Voltage **Frequency**	Voltage Frequency	Movement detector with voltage output Movement detector with frequency output
KI delay	**0** 1…10 s	**0** s	–	
KA current state	Indication of state, contact type and activation delay		Contact sensor outside	
KA contact type	Not used **Closer** Opener Frequency	Not used **Closer** Opener Frequency	–	
KA delay	**0** 1…10 s	**0** 1…10 s	–	

Operating mode switchover			
Designation	Setting values		Explanation
			
NA current state	Indication of state and contact type	–	Night; the operating mode cannot be changed as long as this is active.
NA contact type	Not used **Closer** Opener	**Not used**	–
LS current state	Indication of state and contact type		Shop closing; the operating mode cannot be changed as long as this is active.
LS contact type	Not used **Closer** Opener	Not used **Closer** Opener	–
AU current state	Indication of state and contact type		Automatic; the operating mode cannot be changed as long as this is active.
AU contact type	Not used **Closer** Opener	Not used **Closer** Opener	–
DO current state	Indication of state and contact type		Permanently open; the operating mode cannot be changed as long as this is active.
DO contact type	Not used **Closer** Opener	Not used **Closer** Opener	–

Configurable inputs						
Designation	Setting values				Explanation	
						
PE1 current status	Indication of state and function				OFF	Operating mode "off"; the operating mode cannot be changed as long as this is active. With the DCU1-2M, the door opens before it switches off.
PE1 function	**Not used**		**Not used**		Summer	As long as this is active, the season cannot be changed.
	OFF	NO	OFF	NO	Winter	
	Summer	NO	Summer	NO	Sabotage	In NA active: Door does not open again until sabotage is inactive and operating mode has been changed.
	Winter	NO	Winter	NO	Pharmacy	In NA: first flank opens 10 cm and locks, second closes and locks.
	Sabotage	NC	Sabotage	NC	MPS	An operating mode change via TPS, DPS or the operating mode inputs NA, LS, AU, DO and OFF is not possible.
	Pharmacy	NO	Pharmacy	NO		
	Emergency lock	NO				
	P-KI activation	NO	P-KI activation	NO		
	P-KA activation	NO	P-KA activation	NO		
	Push button	NO	Push button	NO		
	OHZ push button	NO	OHZ push button	NO		
	Reset push button	NO	Reset push button	NO		
	Double push button	NO	Double push button	NO		
	WC control	NO				
PE2 current state	Indication of state and function				Emergency lock	The door closes if this is active. Activation and safety sensors are inactive.

Configurable inputs						
Designation	Setting values				Explanation	
						
PE2 function	**Not used**		**Not used**		P-KI activation	Only active in operating mode LS and AU (like KI).
	MPS		MPS		P-KA activation	Only active in operating mode AU (like KA).
	OFF	NO	OFF	NO	Push button	The first flank opens completely, the next flank closes the door.
	Summer	NO	Summer	NO	OHZ push button	The first flank opens completely, the next flank closes the door. If the hold-open time for contact sensor authorised expires while the door is open, the door closes automatically.
	Winter	NO	Winter	NO	KI2	If the contact type KI is configured as opener for DCU1-2M, PE3 is the second contact sensor input and cannot be configured freely.
	Sabotage	NC	Sabotage	NC		
	Pharmacy	NO	Pharmacy	NO		
	Emergency lock	NO	Emergency lock	NO		
	P-KI activation	NO	P-KI activation	NO		
	P-KA activation	NO	P-KA activation	NO		
	Push button	NO	Push button	NO		
	OHZ push button	NO	OHZ push button	NO		
	Reset push button	NO	Reset push button	NO		
	Double push button	NO	Double push button	NO		
	Manual unlocking	NO	Manual unlocking	NO		
	WC control	NO				
PE3 current state	Indication of state and function				Reset push button	The control is rebooted.
PE3 function	**Not used**		Not used		Double push button	Press 1×: reduced opening width
			KI2	**NO**		Press 2×: full opening width
	OFF	NO	OFF	NO		
	Summer	NO	Summer	NO		
	Winter	NO	Winter	NO		
	Sabotage	NC	Sabotage	NC		
	Pharmacy	NO	Pharmacy	NO		
	Emergency lock	NO	Emergency lock	NO		
	P-KI activation	NO	P-KI activation	NO		
	P-KA activation	NO	P-KA activation	NO		
	Push button	NO	Push button	NO		
	OHZ push button	NO	OHZ push button	NO		
	Reset push button	NO	Reset push button	NO		
	Double push button	NO	Double push button	NO		
	WC control	NO				

Output signals

Configurable outputs				
Designation	Setting values		Explanation	
				
PA1 current state	–		Gong	Active if an SIS is activated in AU, LS or DO.
PA1 function	**Not used**	**Not used**	Fault	Collective fault message
	Gong	Gong	Fault MPS	For activation of the LED on the MPS: ▫ Collective fault message ▫ Maintenance message
	Fault closer	Fault closer		
	Fault opener	Fault opener		
	Fault MPS	Fault MPS		
	Warn	Warn	Warn	Active if the door continues moving despite active safety device at reduced speed.
	Motor brake		Motor brake	CO48 pre-setting with drive SL CO48 and ECdrive CO48. 0.7 s after the closed position has been reached, the motor brake is energised to hold the rubber cable (relieves motor).
	Motor fan	Motor fan	Motor fan	Active if motor temperature is higher than 67°C
	Locked closed	Locked closed		
	Closed	Closed	Open	Active if leaf is in current open position
	Not closed	Not closed		
	Open	Open	Light control	Output is active following activation for the duration of activation + 1 s.
	Off	Off		
	Night	Night		
	Shop closing	Shop closing		
	Automatic	Automatic		
	Permanently open	Permanently open		
	Light control	Light control		
	Opens			
	Does not open			
	Maintenance due	Maintenance due		
	F-manual unlocking	F-manual unlocking	F-manual unlocking	Manual unlocking Lock A activated
	F-WC timeout	F-WC timeout		
			F-WC timeout	WC locked for longer than 30 minutes
PA2 current status	–		Opens	Interlocking door system can be entered
PA2 function	**Not used**	**Not used**	Does not open	Interlocking door system is in use and can not be entered
	Gong	Gong		
	Fault closer	Fault closer		
	Fault opener	Fault opener		
	Fault MPS	Fault MPS		
	Warn	Warn		
	Motor brake			
	Motor fan	Motor fan		
	Locked closed	Locked closed		
	Closed	Closed		
	Not closed	Not closed		
	Open	Open		
	Off	Off		
	Night	Night		
	Shop closing	Shop closing		
	Automatic	Automatic		
	Permanently open	Permanently open		
	Light control	Light control		
	Opens			
	Does not open			
	Maintenance due	Maintenance due		
	F-manual unlocking	F-manual unlocking		
	F-WC timeout	F-WC timeout		

Diagnosis

Designation	Setting values	Explanation
Current values	SI1, SI2, SI3, SI4 STOP KB, KI, KA NA, LS, AU, DO PE1, PE2, PE3 Bolt 1, bolt 2	V
	PA1, PA2 Bolt TST	V
	current Position current Motor current Mains voltage Battery voltage 24 V internal DCU100 temperature DCU101 temperature Motor DCU100 temperature Cycles Operating hours Tests	mm A on/off V V °C °C °C Hours
Current states	SI1, SI2, SI3, SI4 STOP KB, KI, KA NA, LS, AU, DO PE1, PE2, PE3 Bolt 1, bolt 2	The logical state of the signal is displayed (active, inactive, fault).
	PA1, PA2 Bolt TST	
Fault memory	Current faults Old faults	Ser. no., fault text, fault number Select fault marked by * and press the ↵ key, reason for fault will be displayed.
Clear fault memory	Clear current faults Clear old faults	–
Configuration	Opening width Bolt type Rechargeable battery Leaf mass	left/right, mm without/700 mAh kg
	Type Date of manufacture Time of manufacture	–
Start production test	yes/no	
Start teaching	yes/no	
Factory setting	yes/no	
Clear maintenance	yes/no	Clear maintenance display

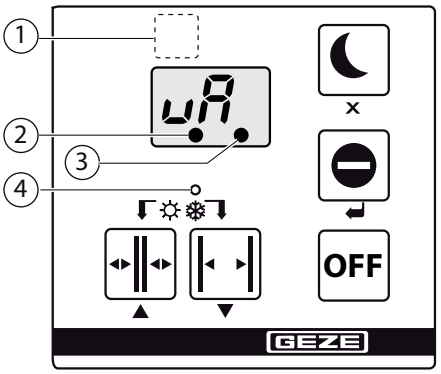
Designation	Setting values		Explanation
Change password	Password Service 1	Password old **0000** Password new	Password Service 1: for access to the service menu with ST220. Password TPS, DPS: is used to enable the TPS or DPS instead of enabling via a key push button. Access is blocked automatically after 2 minutes if no key has been pressed. The first figure indicates how often the ▲ key has to be activated and the second figure how often the ▼ key has to be activated to enable operation of the TPS / DPS. Entry of the password with ST200: ▶ Change figures using ▲ or ▼. ▶ Conform figure and change to next position using ↵ ▶ Cancel with **x**. ▶ Display of the current position by the asterisk under it. ▶ After entry, press ↵ to confirm the password. After 2 minutes without keys being pressed or the next time the Service menu is requested, the password will be queried so that changes to the operating mode setting or the parameter settings can be made. Important information: ▫ When the password for ST220 is set, access to the Service menu via DPS is no longer possible. ▫ If the password has been forgotten, a special flash file with which the password on the control can be reset to 00 has to be requested from GEZE. ▫ The password cannot be deleted by installing a new software version.
Language	**Deutsch** English Français Italiano Espanol		Language of the service terminal

22.2 Display programme switch (DPS)

The DPS can be used for commissioning and service.

- for changing the drive parameters
- for "teaching" the drive
- for diagnosis

Key			Function in service mode	
	nA	Night	×	Cancel and return to first menu level
	LS	Shop closing	↵	Confirm
	Au	Automatic	▲	Scroll up Increase value
	do	Permanently open	▼	Scroll down Reduce value
OFF	oFF	Off		(Only with mat. no. 152524) drive switched without function for service purposes (drive is **not** without voltage)
▲ + ▼ simultaneously	Change Summer (full opening width) Winter (reduced opening width)		–	–
Service key (1) + ↵ simultaneously	Change operating mode / service mode			



1 Service key
2 Position unknown
3 Lights up for maintenance
4 Display summer/winter (LED lights up for winter opening width)

Scroll function (DPS with OFF key, DPS without OFF key)
In the Service menu, it is possible to scroll through the menu or value settings by pressing the ▲ or ▼ keys.

22.2.1 Service mode DPS

- It is possible to change to the service mode in the operating modes oFF, LS, Au and do.
- If no key is pressed for 5 minutes in service mode, the system automatically changes to operating mode (not when Fo is displayed).
- In service mode, the door remains in operation in the current operating mode (not with teaching activated or with Fo displayed).

22.2.2 Service menu DPS

1st menu

Display	Explanation	Setting values		
uO	Opening speed	03 04…10 12…20 25…**50** 80		cm/s *)
uC	Closing speed	03 04…10 12…**20** 25…50 80		cm/s *)
SO	Latching action open	**00** 01…07	cm/s	
SC	Latching action closed	**00** 01…07	cm/s	DCU1-RD: 1 … 10 … 14
oH	Summer hold-open time	00 **01**…10 12…20 25…60	s	
or	Winter hold-open time (reduced opening width)	00 **01**…10 12…20 25…60	s	
oS	Hold-open time contact authorised	00 **01**…10 12…20 25…60	s	
od	Dynamic extension of the hold-open time	**00** **no** 01 yes		
bO	Acceleration	1…10 12…**20** 25…30 (multiply value displayed by 10)	× 10 cm/s² *)	
ur	Reduced profile	**00** **no reduced speed** 01 reduced speed before open position and before closed position 02 reduced speed before open position 03 reduced speed before closed position		
FO	Static force open	01 10 **15** 20 25 (multiply value displayed by 10)	× 10 N	
FC	Static force closed	01 10 **15** 20 25 (multiply value displayed by 10)	× 10 N	

⚠ **WARNING!** ~~DIN 18650 EN 16005~~

Forces greater than 150 N can lead to serious physical injuries and are not permitted as per DIN 18650/EN 16005.

- Note that forces exceeding 150 N are only permitted if additional safety measures are taken.

CF	Permanent closing pressure	**00** 01… 10 12…20 25…50 60…90		
CL	Reversing limit	01 02…**06**…10 12…20 25	mm	
nE	Switch to 2nd menu	–		

*) The maximum speed and acceleration depend on the door weight and friction.

2nd Menu

Display	Explanation	Setting values	
			
S1	Safety 1 contact type (terminal SIS1)	00 not used **02 Opener**	00 not used **02 Opener**
F1	Safety 1 function (terminal SIS1)	**01 SIS rev** 02 SIS and KI 03 SIS and KA 04 SIS slow 05 SIO stop 06 SIO slow 07 SIO break-out	**01 SIS rev** 02 SIS and KI 03 SIS and KA 04 SIS slow 06 SIO slow
S2	Safety 2 contact type (terminal SIS2)	**00 not used** 02 Opener	**00 not used** 02 Opener
F2	Safety 2 function (terminal SIS2)	**01 SIS rev** 02 SIS and KI 03 SIS and KA 04 SIS slow 05 SIO stop 06 SIO slow 07 SIO break-out	**01 SIS rev** 02 SIS and KI 03 SIS and KA 04 SIS slow 06 SIO slow
S3	Safety 3 contact type (terminal SIO1)	**00 not used** 02 Opener	**00 not used** 02 Opener
F3	Safety 3 function (terminal SIO1)	01 SIS rev 02 SIS and KI 03 SIS and KA 04 SIS slow **05 SIO stop** 06 SIO slow 07 SIO break-out	01 SIS rev 02 SIS and KI 03 SIS and KA 04 SIS slow **06 SIO slow**
S4	Safety 4 contact type (terminal SIO2)	**00 not used** 02 Opener	**00 not used** 02 Opener
F4	Safety 4 function (terminal SIO2)	01 SIS rev 02 SIS and KI 03 SIS and KA 04 SIS slow **05 SIO stop** 06 SIO slow 07 SIO break-out	01 SIS rev 02 SIS and KI 03 SIS and KA 04 SIS slow **06 SIO slow**
Cn	Stop contact type	**00 not used** 01 Closer 02 Opener 12 Terminating 1.2 kΩ 20 Terminating 2.0 kΩ	**00 not used**
Cb	Contact sensor authorised contact type	00 not used **01 Closer**	00 not used **01 Closer**
Ci	Contact sensor inside contact type	00 not used **01 Closer** 02 Opener 03 Voltage 04 Frequency	 02 Redundant opener 03 Voltage **04 Frequency**
Ai	Contact sensor inside activation delay	**00** 01 … 10 s	**00** s
Co	Contact sensor outside contact type	00 not used **01 Closer** 02 Opener 04 Frequency	00 not used **01 Closer** 02 Opener 04 Frequency
Ao	Contact sensor outside activation delay	**00** 10 s	**00** 10 s

Display	Explanation	Setting values					
							
E1	Configurable input 1	**00**	**not used**		**00**	**not used**	
		02	Operating mode OFF	NO	02	Operating mode OFF	NO
		03	Summer	NO	03	Summer	NO
		04	Winter	NO	04	Winter	NO
		05	Sabotage	NC	05	Sabotage	NC
		06	Pharmacy	NO	06	Pharmacy	NO
		07	Emergency lock	NO			
		08	P-KI activation	NO	08	P-KI activation	NO
		09	P-KA activation	NO	09	P-KA activation	NO
		10	Switch function	NO	10	Switch function	NO
		11	Switch function, close to o5	NO	11	Switch function, close to o5	NO
		13	Reset push button	NO	13	Reset push button	NO
		14	Double push button	NO	14	Double push button	NO
		21	WC control	NO			
E2	Configurable input 2	**00**	**not used**		**00**	**not used**	
		01	MPS		01	MPS	
		02	Operating mode OFF	NO	02	Operating mode OFF	NO
		03	Summer	NO	03	Summer	NO
		04	Winter	NO	04	Winter	NO
		05	Sabotage	NC	05	Sabotage	NC
		06	Pharmacy	NO	06	Pharmacy	NO
		07	Emergency lock	NO			
		08	P-KI activation	NO	08	P-KI activationNO	
		09	P-KA activation	NO	09	P-KA activation	NO
		10	Switch function	NO	10	Switch function	NO
		11	Switch function, close to o5	NO	11	Switch function, close to o5	NO
		13	Reset push button	NO	13	Reset push button	NO
		14	Double push button	NO	14	Double push button	NO
		20	Manual unlocking	NO	20	Manual unlocking	NO
		21	WC control	NO			
E3	Configurable input 3	**00**	**not used**		**00**	**not used**	
					01	Contact sensor inside 2	NO
		02	Operating mode OFF	NO	02	Operating mode OFF	NO
		03	Summer	NO	03	Summer	NO
		04	Winter	NO	04	Winter	NO
		05	Sabotage	NC	05	Sabotage	NC
		06	Pharmacy	NO	06	Pharmacy	NO
		07	Emergency lock	NO			
		08	P-KI activation	NO	08	P-KI activationNO	
		09	P-KA activation	NO	09	P-KA activation	NO
		10	Switch function	NO	10	Switch function	NO
		11	Switch function, close to o5	NO	11	Switch function; close to o5	NO
		13	Reset push button	NO	13	Reset push button	NO
		14	Double push button	NO	14	Double push button	NO
		20	Manual unlocking	NO	20	Manual unlocking	NO
		21	WC control	NO			

Display	Explanation	Setting values	
			
A1	Configurable output 1	**00 not used** 01 Gong 02 Fault closer 03 Fault opener 04 Fault for MPS 05 Warning signal 06 Motor brake 07 Motor fan 08 Closed and locked 09 Closed 10 Not closed 11 Open 12 OFF 13 NA 14 LS 15 AU 16 DO 17 Light control 18 Opens when activated 19 Does not open when activated 20 Maintenance due 21 Manual locking fault 24 WC timeout fault	**00 not used** 01 Gong 02 Fault closer 03 Fault opener 04 Fault for MPS 05 Warning signal 07 Motor fan 08 Closed and locked 09 Closed 10 Not closed 11 Open 12 OFF 13 NA 14 LS 15 AU 16 DO 17 Light control 20 Maintenance due 21 Manual locking fault 24 WC timeout fault
A2	Configurable output 2	**00 not used** 01 Gong 02 Fault closer 03 Fault opener 04 Fault for MPS 05 Warning signal 06 Motor brake 07 Motor fan 08 Closed and locked 09 Closed 10 Not closed 11 Open 12 OFF 13 NA 14 LS 15 AU 16 DO 17 Light control 18 Opens when activated 19 Does not open when activated 20 Maintenance due 21 Manual locking fault 24 WC timeout fault	**00 not used** 01 Gong 02 Fault closer 03 Fault opener 04 Fault for MPS 05 Warning signal 07 Motor fan 08 Closed and locked 09 Closed 10 Not closed 11 Open 12 OFF 13 NA 14 LS 15 AU 16 DO 17 Light control 20 Maintenance due 21 Manual locking fault 24 WC timeout fault
nE	Switch to 3rd menu	–	–

3rd Menu

Display	Explanation	Setting values	
			
Er	Currently pending faults	CE Clear fault memory	Clear fault memory
oE	Old faults (the last 10 faults)	CE Clear fault memory	Clear fault memory
di	Diagnosis	r0 Without lock r1 With lock A0 Without battery A1 With battery xx Leaf weight (x 100 kg) yy + leaf weight (x kg)	r0 Without lock r1 With lock A0 Without battery A1 With battery xx Leaf weight (x 100 kg) yy + leaf weight (x kg)
St	Control type	00 DCU1 01 DCU1-RD * 02 DCU1-T30 * * Special software	20 DCU1-2M 21 DCU1-2M-DUO * 22 DCU1-2M-LL * 23 DCU1-2M-RWS *
SA	Operating duration (6-digit display)	Co Number of cycles / 100 Ho Operating hours / 4 Fo Number of self-tests	Co Number of cycles / 100 Ho Operating hours / 4 Fo Number of self-tests
CS	Switch off Service LED	cS Displayed briefly for acknowledgement	cS Displayed briefly for acknowledgement
CP	Restore factory setting	–	–
Fr / Fo	Enable/activate motor	–	–
SP	Language	00 Deutsch 01 English 02 Français 04 Italiano 05 Espanol	00 Deutsch 01 English 02 Français 04 Italiano 05 Espanol
LE	Start teaching	–	–
EP	Software version	e.g. St 20 for DCU1 V2.0	e.g. Ft 20 for DCU1-2M V2.0
nE	Switch to 4th menu	–	–

4. Menu

Display	Explanation	Setting values	
			
At	Drive type	**00 Unknown** 01 Slimdrive SC 02 Slimdrive SF 03 Slimdrive SL 04 Slimdrive SL NT 05 Slimdrive SL BO 06 Slimdrive SL CO48 07 Slimdrive SLT 08 Slimdrive SLV 09 ECdrive 10 ECdrive CO48 11 Powerdrive 12 Powerdrive BO 13 TSA 360NT BO 14 Powerdrive PL CO48	**00 Unknown** 01 Slimdrive SC 02 Slimdrive SF 03 Slimdrive SL 04 Slimdrive SL NT 07 Slimdrive SLT 08 Slimdrive SLV 09 ECdrive 11 Powerdrive
EF	Number of door leaves	01 Close on one side **02 Close centrally**	01 Close on one side **02 Close centrally**
AC	Power failure in LS, AU or DO	**00 No function** 01 Open 02 Close 03 Battery operation for 30 min., then open 04 Battery operation for 30 min., then close	**01 Open**

Display	Explanation	Setting values					
							
Eo	Open after fault	**00**	**Door remains closed**				
		01	Door opens after fault (see fault list for details)		**01**	**Door opens after fault**	
rt	Bolt type	**00**	**No locking**		**00**	**No locking**	
		01	Bistable electromechanical locking		01	Bistable electromechanical locking	
		02	Motor-driven (rod locking, break axle) Closed-circuit current lock		02	Rod locking, break axle Closed-circuit current lock	
		03	Open-circuit current lock		03		
		04	Lock A (hook bolt lock)			Lock A (hook bolt lock)	
		05			05		
SL	Interlocking door system, vestibule	**00**	**Master**		**00**	**Master**	
		01	Slave interlocking door system				
		02	Slave vestibule				
CA	CAN address (GEZE building system)	**00**	01…63	address	**00**	01…63	address

23 Fault messages

23.1 Display programme switch

For troubleshooting and fault descriptions see "Faults and measures for controls DCU1 and DCU1-2M", mat. no. 108104.
Currently pending fault messages are displayed briefly in cycles (10 s) on the display programme switch during operation. In addition, they are also entered in the Er and oE fault memories.

Display	Fault message	Cause
01	24 V	Control defective.
02	12 V DCU100	Control defective.
03	230 V	Power failure
07	Fire alarm	Smoke detector active or power failure.[3]
08	Smoke alarm	Smoke detector active.[4]
10	Rotary transducer	Rotary transducer signal faulty.
11	Short-circuit	DCU100 current through motor 1 too high.
12	Motor	DCU100 motor 1 defective.
13	SIS1	Testing: Safety sensor "close" 1 faulty or activation takes longer than 4 min.
14	MPS	Control cable break – mechanical programme switch
15	Display programme switch	No communication between control – display programme switch
16	Locking	Locking does not lock.
17	Unlock	Locking does not unlock.
18	Bolt signal	Signals locked and unlocked are sent simultaneously.
19	SIS2	Testing: Safety sensor "close" 2 faulty or activation takes longer than 4 min.
25	Open	Obstacle while opening. [2]
26	Initialisation	Taught opening width is not reached.
27	SIO1, SIO2	Safety sensor "open" or break-out sensor[5] is active.[6]
28	Motor relay	DCU100 motor relay of the main PCB is defective.
29	SIO2	SIO2 or break-out sensor[5] is not switching or activation takes longer than 4 min.
32	Sabotage	Sabotage active. [6]
33	Interlocking door system, vestibule	Second drive is not reacting.[1] [6]
34	TPS	No communication between control – keypad programme switch
35	Pharmacy	Activation longer than 4 min.
36	Control	Redundancy: Internal redundancy fault of the control[2]
37	KI1	Movement detector defective or activation longer than 4 min.
38	KI2	Movement detector defective or activation longer than 4 min.[2]
39	KA	Activation longer than 4 min.
40	KB	Activation longer than 4 min.
41	SIO1	SIO1 or break-out sensor[5] is not switching or activation takes longer than 4 min.
42	NOTVER	Emergency lock is activated.[1]
44	STOP	STOP is active.[1]
45	DCU100 drive hot	Motor or control temperature main PCB higher than 110°C.
46	Motor temp. sensor	Motor temperature sensor defective.
47	DCU100 temperature sensor	Temperature sensor main PCB control defective.
48	DCU100 drive overheated	Motor or control temperature main PCB greater than 115 °C.
50	DCU1-T30	Fault while testing DCU1-T30 expansion.[3]
51	DCU1-2M-LL, DCU1-2M-RWS	Fault on brake (outputs PA1/PA2 do not open). Emergency push button pressed (motor brake enabled via emergency button, door opens immediately).
53	Manual unlocking	Lock A has been unlocked by hand.
54	Communication DPS	Interference of communication with DPS
60	DCU100	Fault on the main PCB.
61	Rechargeable battery	Rechargeable battery flat.
63	Software	Software of the main PCB does not match software of additional PCB.[2]
64	Open during testing	Door not open in required opening time.[2]

Display	Fault message	Cause
65	Program sequence	Fault in internal computer monitoring.[2)]
70	DCU101	Fault on the additional PCB.[2)]
71	DCU101 short-circuit	Current through motor 2 too high.[2)]
72	DCU101 motor	Motor 2 defective.[2)]
75	DCU101 control hot	Control temperature additional PCB higher than 110°C.[2)]
77	DCU101 temperature sensor	Temperature sensor control additional PCB defective.[2)]
78	DCU101 control overheated	Motor or control temperature additional PCB higher than 115°C.[2)]
79	DCU101 motor relay	Motor relay additional PCB defective.[2)]
90	Control	Control defective.
91	Rotary transducer, motor	No pulses from rotary transducer.
x.x	Position	Leaf position unknown (dot on left display).
x.x	Maintenance	Maintenance requirement (number of cycles, operating hours, dot on right display).
EL	Teaching	Fault during teaching of the control.
8.8.	Display programme switch	No communication between control – display programme switch.

1 with DCU1
2 with DCU1-2M
3 with DCU1-T30
4 with DCU1-RD
5 with DCU1-BO
6 with DCU1; with these faults on the DCU1 the door does not open if the parameter "Open in case of fault" is switched on.

23.2 Keypad programme switch

Display keypad programme switch					Designation	Display display programme switch
OFF						
–	–	–	–	–	No operating voltage	
–	–	–	x	x	Drive too hot	45, 46, 48, 75, 78
–	–	x	–	x	Position	26, x.x
–	–	x	x	–	SIS	13, 19
–	–	x	x	x	Motor	10, 11, 12, 71, 72
–	x	–	–	x	Activation takes longer than 4 min	35, 36, 37, 38, 39, 40
–	x	–	x	x	Interlocking door system, vestibule	33
–	x	x	–	–	Rechargeable battery	61
–	x	x	x	–	Opening time too long	64
x	–	–	–	x	Alarm	07, 08, 32, 42, 44
x	–	–	x	x	DCU	104 50
x	–	x	–	–	SIO, BO	27, 29, 41
x	x	–	–	–	Power failure	03
x	x	–	–	–	Control	01, 02, 28, 47, 60, 63, 65, 70, 77, 79
x	x	x	–	–	Locking	16, 17, 18, 51

– LED off
x LED on

- In addition, the following states are displayed:
  - Non-taught winter LED flashes continuously (1 sec. on, 3 sec. off).
  - Maintenance winter LED flashes continuously (0.5 sec. on, 0.5 sec. off).
  - Fault operating mode displayed for 5 sec., fault code for 2 sec.
  - Block active. Current mode LED flashes once if a key is pressed.

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