

Powerturn

Valid for variants:

Powerturn (1-leaf/2-leaf)

Powerturn F (1-leaf)

Powerturn F-IS (2-leaf)

Powerturn F/R (1-leaf)

Powerturn F/R-IS (2-leaf)

Powerturn F/R-IS/TS

156568-04

EN Wiring diagram

Contents

Symbols and illustrations.....	5
Validity	5
Product liability	5
1 Notes.....	6
1.1 Safety precautions	6
1.2 Connection information	6
1.3 Reference documents.....	7
1.4 Inspection of installed system.....	7
2 Abbreviations.....	8
3 Electrical data.....	9
4 Supply terminals.....	10
5 Safety sensor close and open.....	13
5.1 Pair of safety sensor strips GC 338.....	13
5.2 Sensor GC 334/GC 335	16
5.3 Safety sensor GC 342.....	16
5.4 Safety sensor GC 342+	18
6 Mechanical contact.....	21
6.1 Key switch.....	21
7 Contact sensor inside.....	22
7.1 Radar movement detector GC 302 R.....	22
7.2 Push button (potential-free normally open contact)	22
7.3 Non-contact activation sensor GC 307+	23
7.4 Radar movement detector GC 308 R.....	23
8 Contact sensor outside.....	24
8.1 Radar movement detector GC 302 R.....	24
8.2 Push button (potential-free normally open contact)	25
8.3 Non-contact activation sensor GC 307+	25
8.4 Radar movement detector GC 308 R.....	25
9 Radio control	26
9.1 Plug the radio reception board WRB-5 into the control circuit board DCU800.....	26
9.2 Radio channels	26
10 Push And Go.....	27
11 Configurable inputs.....	28
11.1 MPS	28
11.2 2-leaf opening and 1-leaf opening	28
11.3 Sabotage.....	28
11.4 Closing position active leaf.....	29
11.5 Emergency lock.....	29
11.6 Additional contact sensors (P-KI, P-KA).....	29
11.7 Switch functions	30
11.8 Control reset	30
11.9 Double push button (1-leaf/2-leaf door opening)	31
11.10 STOP	31
11.11 Closing position detection.....	32
11.12 WC control.....	32
11.13 Servo function with fire alarm	32

11.14	1-leaf Open.....	32
11.15	Suppression of the safety sensors.....	33
12	Configurable outputs.....	34
12.1	Configurable output PA1	34
12.2	Configurable output PA2.....	38
13	Electric strike/motor lock	41
13.1	24 V DC electric strike supplied on drive side.....	42
13.2	On-site-powered 12 V AC electric strike	42
13.3	Bolt message.....	43
13.4	Activation delay for lock switch contact.....	43
14	Free line connections	44
15	WC control.....	45
15.1	Non-contact sensor GC 307+ WC	46
15.2	Illuminated OCCUPIED sign	46
16	Mode of operation	47
16.1	Programme switch	47
16.2	Set the mode of operation using push buttons or switches.....	49
16.3	Change in mode of operation	50
17	2-leaf drives.....	52
17.1	Powerturn IS/TS: Active leaf automated, passive leaf with door closer	52
17.2	Two automated door leaves.....	52
17.3	Connection via system cable RS485.....	53
17.4	Mains connection	54
18	Powerturn F and Powerturn F/R on fire protection doors	55
18.1	F-board DCU 801	55
18.2	Setting latching action switch	56
18.3	Triggering and reset of holding open.....	56
18.4	Hold-open system Powerturn F, Powerturn F-IS with smoke switch control unit.....	57
18.5	Hold-open system Powerturn F/R, Powerturn F/R-IS with integrated lintel-mounted smoke switch.....	58
18.6	Hold-open system Powerturn F-IS/TS, Powerturn F/R-IS/TS - active leaf automated, passive leaf with door closer and holding magnet.....	58
19	Mains connection	61
19.1	Mounting plate with integrated power supply circuit	62
20	Motor gear unit	64
21	Control unit.....	65
22	Commissioning and service.....	66
22.1	Commissioning.....	66
22.2	Teaching run	66
22.3	Teaching a 1-leaf system	68
22.4	Teaching a 2-leaf system	69
22.5	Forces and speeds.....	70
23	De-energised operation.....	71
24	Free swing function	71
25	Resilience to external influences or load due to wind pressure.....	72
26	Door closer operation	72

27	Low-energy mode.....	73
28	Servo mode	74
28.1	Servo support with additional servo torque.....	74
28.2	Servo support with additional servo torque and additional torque servo fire alarm.....	74
29	Service menu	76
29.1	Service terminal ST220.....	76
29.2	Connecting service terminal ST220.....	77
29.3	Service menu ST220	77
29.4	Display programme switch DPS.....	95
29.5	Service buttons S1 and S2	95
29.6	DPS service menu and service buttons S1/S2 with LEDs.....	97
30	Fault messages	107
30.1	Fault messages ST220 and DPS.....	107
30.2	Fault messages on the service button LEDs.....	111
31	Disposal and accessories.....	112
31.1	Disposal of the door system.....	112
31.2	Accessories.....	112

Symbols and illustrations

Warning notices

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

- ▶ Always read and observe these warning notices.
- ▶ Observe all measures 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.

Further symbols and illustrations

Important information and technical notes are highlighted to explain correct operation.

Symbol	Meaning
	means "important information" Information on avoiding material damage, understanding a concept or optimising workflows
	means "additional Information"
	<ul style="list-style-type: none"> ▶ Symbol for an action: This means you have to do something. ▶ If there are several actions to be taken, keep to the given order.
	compliant with EN 16005 Symbol in a table or in information concerning safety sensors.
	not compliant with EN 16005 Symbol in a table or for a piece of information on sensors that do not correspond to EN 16005.
	Fire protection door Symbol for fire protection door
	Not permitted for fire protection door Symbol "Not permitted for fire protection door"

Validity

- Valid for software version DCU8 V2.1 or higher
- Hardware revision DCU800 from Rev F

Product liability

In compliance with the liability of the manufacturer for his products as defined in the German "Product Liability Act", compliance with the information contained in this brochure (product information and intended use, misuse, product performance, product maintenance, obligations to provide information and instructions) must be ensured. Failure to comply releases the manufacturer from his statutory liability.

1 Notes

1.1 Safety precautions

- ▶ Keep these instructions.
- ▶ Secure the workplace against unauthorised entry.
- ▶ Before working on the electrical system, interrupt the power supply (mains and rechargeable battery) and check that no voltage is present. When an Uninterruptible Power Supply (UPS) is used, the system will still be under voltage even when disconnected from the mains.
- ▶ Watch the swivelling range of long system parts.
- ▶ Secure the drive/drive cover/coupling elements against falling.
- Only specialists who are authorised by GEZE are permitted to carry out installation, commissioning and maintenance.
- Danger of injury when working at heights.
- Operate the drive only with a connected latching action switch.
- If unauthorised changes are made to the system, GEZE cannot be made liable in any way whatsoever for any resulting damages.
- GEZE does not accept any warranty for combinations with third-party products. In addition, only original GEZE parts may be used for repair and maintenance work.
- Connection to the mains voltage must be carried out by a qualified electrician. Perform the mains connection and protective earth connection test in accordance with VDE 0100 Part 600.
- ▶ Use an on-site automatic circuit-breaker as the line-side disconnecting device. Its dimensioning is matched to the type, cross-section, type of laying and ambient conditions of the on-site power supply circuit. The automatic cut-out must have at least 4 A and may have max. 16 A.
- ▶ In accordance with Machinery Directive 2006/42/EC, a safety analysis is to be performed and the door system marked in compliance with CE Marking Directive 93/68/EEC before the door system is commissioned.
- Observe the latest versions of guidelines, standards and country-specific regulations, in particular:
 - ASR A1.7 "Guidelines for doors and gates"
 - DIN EN 16005 "Power-operated pedestrian doorsets – Safety in use – Requirements and test methods"
 - DIN VDE 100-600 "Installation of low-voltage systems - Part 6 Tests"
 - DIN EN 60335-2-103 "Household and similar electrical appliances - Safety; Particular requirements for drives for gates, doors and windows"
 - Accident-prevention regulations, especially DGUV V1 (BGV A1) "General regulations"
 - DGUV V3 (BGV A3) "Electrical installations and equipment"

Swing door drive as a hold-open device in accordance with DIN 18263-4

- The hold-open function of the side-hung leaf drive must be cancelled in the event of a fire alarm, fault or manual triggering; the latch release (electric strike according to fail-secure principle) must be disabled and all the activators for opening the door leaves must be switched ineffective.
- The side-hung leaf drives may only be used on 1- and 2-leaf doors if the door frame or the passive leaf of a 2-leaf door respectively is equipped with an electric strike that releases the latch and/or a safety catch with a spring-loaded latch.

1.2 Connection information

- The drive is designed exclusively for use in dry rooms.
- ▶ Use only the cables specified on the cable plan provided. Cables must be shielded in compliance with the wiring diagram.
- ▶ Always use insulated wire end ferrules for wire cores.
- ▶ Insulate cores that are not used.
- ▶ Secure loose, internal drive cables with cable ties.
- ▶ Observe the maximum permitted total power consumption required to supply the periphery.



Install the product in such a way that access is easy during repairs/maintenance and causes little effort. The costs for removal must be in economic relation to the value of the product.

1.3 Reference documents

Mat. no.	Document	Product
154918	Powerturn user manual	Door drive
154917	Powerturn installation instructions	Door drive
154872	Installation instructions IS mechanism Powerturn	Door drive
123457	Installation instructions GC 302 R	Radar movement detector
198724	Installation instructions GC 307+	Non-contact activation sensor
203845	Installation instructions GC 308 R	Radar movement detector
126833	GC 334 installation instructions	Safety sensor
128556	GC 335 installation instructions	Safety sensor
152968	GC 338 installation instructions	Pair of safety sensor strips
167390	GC 342 installation instructions	Safety sensor
198708	Installation instructions GC 342+	Safety sensor
141511	Wiring diagram FA CG 150	Hold-open system
132159	Installation and service instructions	GEZE wireless program automatic
186584	Safety analysis	Door drive
030450	Inspection book	Automatic

1.4 Inspection of installed system

- ▶ Check the protective earth connection to all metal parts which can be touched and are connected to the protective earth conductor.
- ▶ Check the function of the presence detectors and movement detectors.
- ▶ Check the measures for protection and prevention of crushing, impact, shearing or drawing-in spots.

2 Abbreviations

Core colours

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

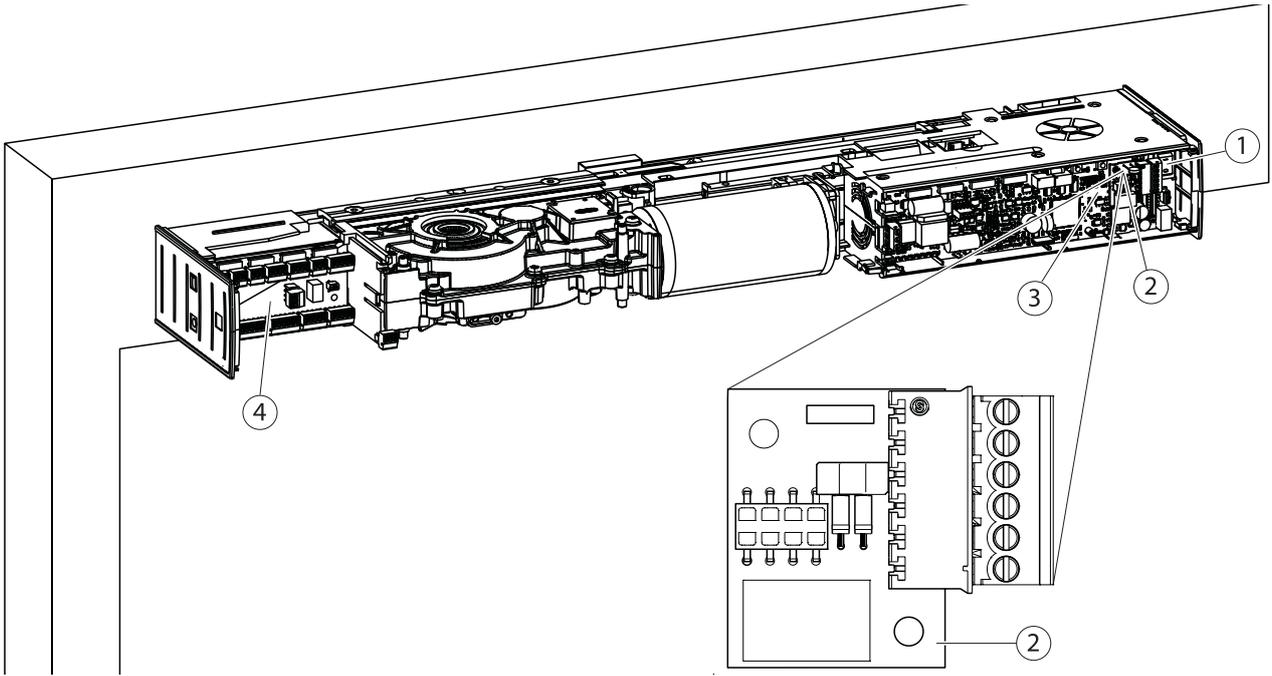
Connections, terminals and plugs

AU	Automatic	PE	Configurable input
HS	Hinge side	RBM	Radar movement detector
OHS	Opposite hinge side	RES	Reset switch
DO	Hold open	RM	Bolt message
DPS	Display programme switch	RSZ	Smoke control unit
LATCH- ING ACTION	Latching action	RS485	Communication signal to DPS and second drive
GF	Active leaf	OFF	Operating mode AUS
FK 1	Radio channel 1 (changeover mode of operation and activation signal KI)	SF	Passive leaf
FK 2	Radio channel 2 (activation signal KB)	STOP	Stop
GND	Ground	SCR	Shield
KA	Contact sensor outside	SIO	Safety sensor opening
KB	Mechanical contact	SIS	Closing safety sensor
KI	Contact sensor inside	STG	Fault
LK	Lustre connector	TK	Door transmission cable
LS	Exit only	TOE	Electric strike
MPS	Mechanical programme switch	TST	Test signal for safety sensors
NA	Night mode	24 V	Supply voltage for external devices
PA	Configurable output	24V SENS	Supply voltage for sensors, switched after ECO mode has been set

3 Electrical data

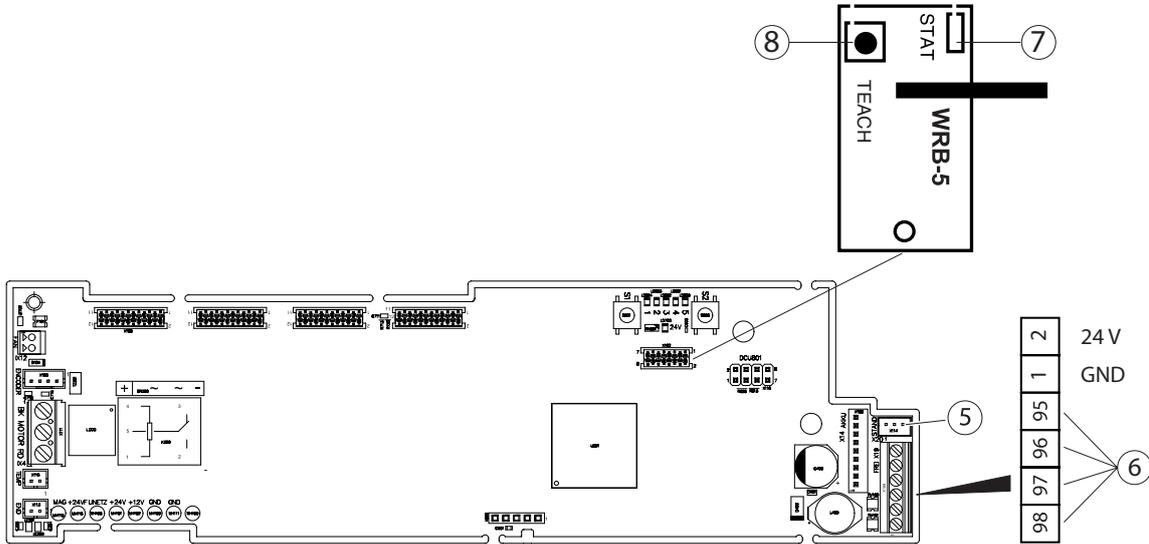
Mains voltage	230 V AC -15%, +10%
Frequency	50/60 Hz
Protection class	I
Capacity rating	200 W
Mains connection	Fixed connection (installation cable or drip loop)
Primary fuse	–
Secondary fuse	10 A slow-blow, 5×20 mm
Secondary voltage (transformer)	33 V AC (46 V DC)
Control voltage for external components	24 VDC ±10%
Output current control voltage 24 V	1200 mA permanently 1800 mA briefly (5 s, duty ratio 30%)
Fuse protection 24 V	2.5 A; reversible
Temperature range	-15 ... +50 °C
IP rating	IP30
Emission sound pressure level	< 70 dB (A)

4 Supply terminals



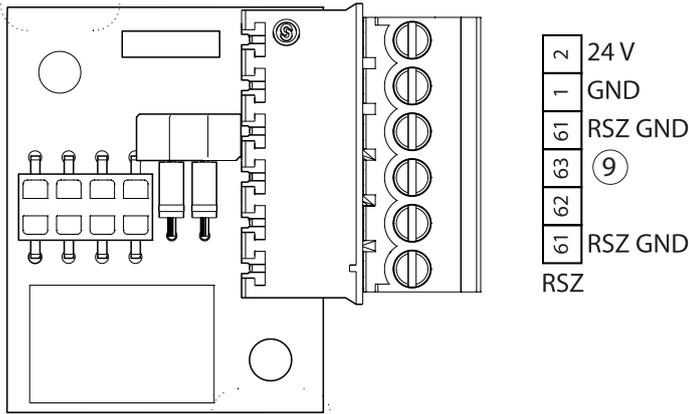
- | | | | |
|---|-------------------|---|--------|
| 1 | Main switch | 3 | DCU800 |
| 2 | DCU801 (optional) | 4 | DCU802 |

DCU800 with WRB-5 (optional)



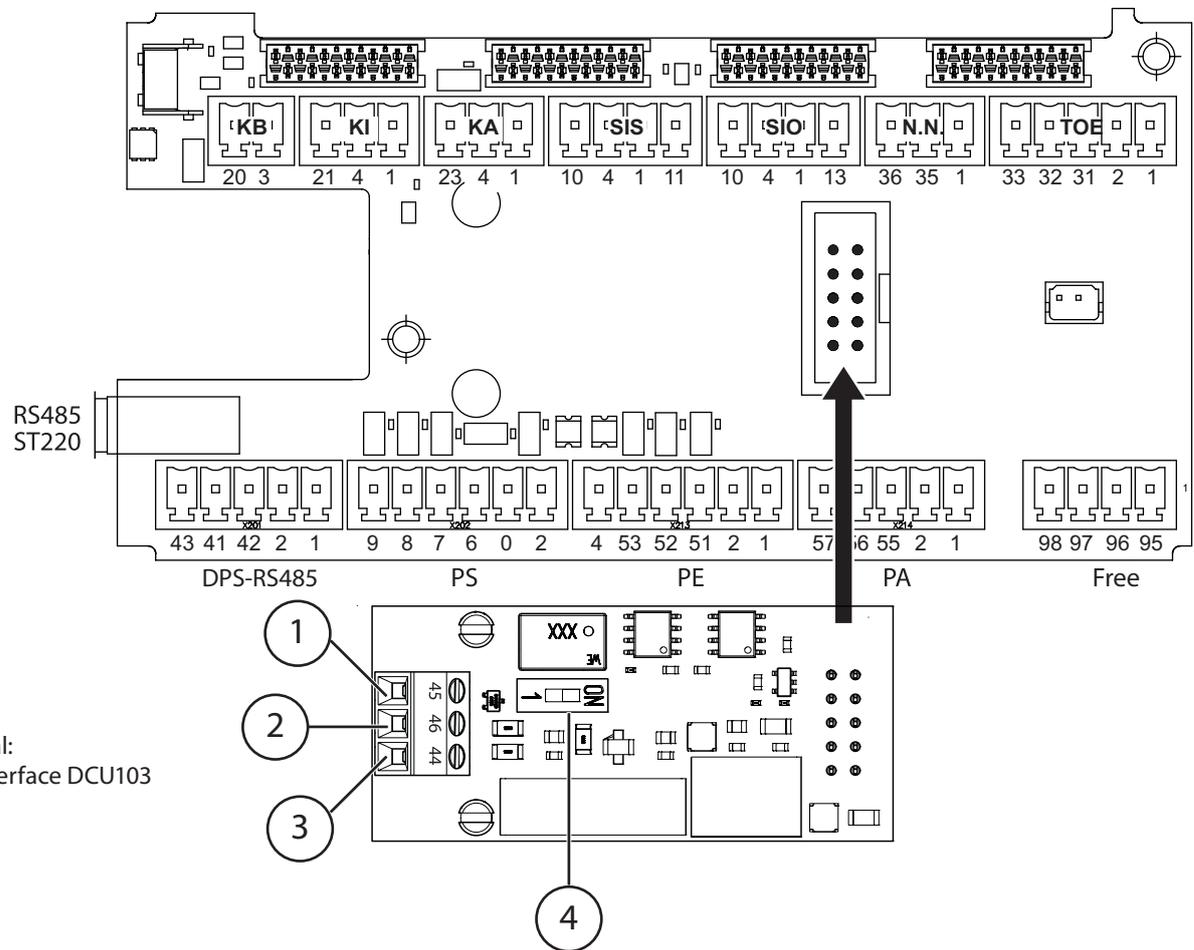
- | | | | |
|---|--------------------|---|-------------------------------|
| 5 | RS485 passive leaf | 7 | Status LED (wireless WRB-5) |
| 6 | FREE | 8 | Teach button (wireless WRB-5) |

DCU801 (optional)



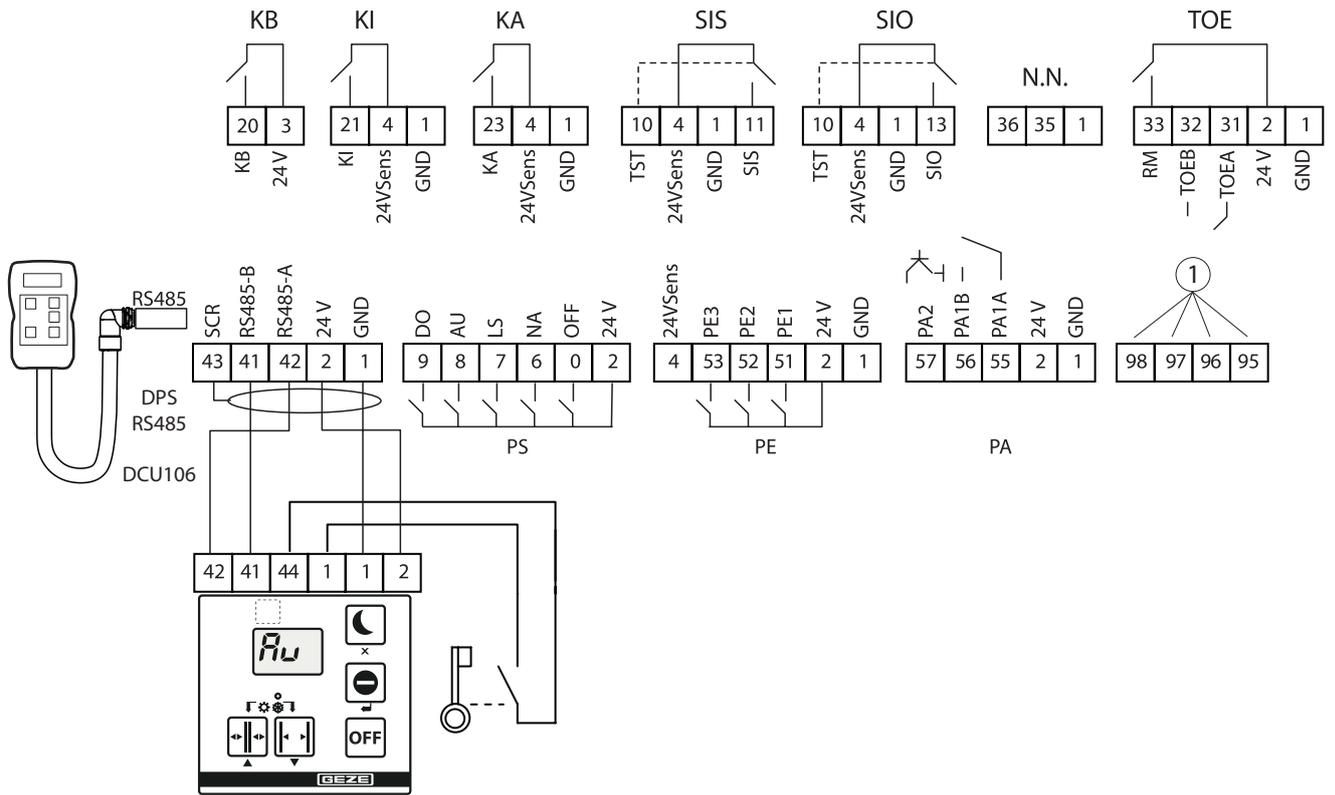
9 Second drive + RSZ 24V

DCU802



Optional:
CAN interface DCU103

- 1 Terminal CANL
- 2 Terminal CANH
- 3 Terminal GND CAN (ISO)
- 4 S1: Terminating resistor ON/OFF



1 FREE

5 Safety sensor close and open

- ▶ With 2-leaf systems, connect the safety sensors of the active leaf with the active leaf control.
- ▶ With 2-leaf systems, connect the safety sensors of the passive leaf with the passive leaf control.
- ▶ Install the sensor for monitoring closing on the door leaf, opposite hinge side.
If the SIS is activated during closing, the door reverses and opens again.
- ▶ Install the sensor for monitoring opening on the door leaf, hinge side.
If the SIO is activated during opening, the door stops.

On detection the sensor output is open (GND applied to SIS or SIO input).

- ▶ Check function and correct setting of the sensors during commissioning and service.
- For operation of the display programme switch DPS, see chapter 29.4 "Display programme switch DPS", p. 95.
- For operation of the service terminal ST220, see chapter 29.1 "Service terminal ST220", p. 76.

The state of the drive to which the ST220 is connected is displayed. With 2-leaf systems, the status of the active leaf is displayed.

- ▶ Press the \leftarrow key.
- ▶ Select "Active leaf para" or "Passive leaf para" using the \blacktriangle or \blacktriangledown key and press the \leftarrow key.
- ▶ In the selection menu, use the \blacktriangle or \blacktriangledown key to select "Signals" and then press the \leftarrow key.

For further settings see the descriptions below.

The wall blanking range of the sensor strip SIO is set automatically during the teaching procedure.

If required it can be changed with DPS or ST220 via the service menu, with

- DPS: Set the parameter Rb to the desired wall blanking range (1°...99°).
- ST220: Set "Input signals", "SI3 – terminal SIO1", "SI3 wall blanking range" to the desired value (1° to 99°).

5.1 Pair of safety sensor strips GC 338

i EN 16005

- i**
- ▶ Note chapter 1.3 "Reference documents", p. 7.
 - ▶ Note chapter 31.2 "Accessories", p. 112.
-

- i**
- The connector plug of the GC 338 interface has 6 poles. Terminal 6 is not occupied.
 - For energy-related reasons, the Powerturn can switch the GC 338 automatically to standby mode as long as it is not required. In order to do so, the Powerturn must be equipped with firmware above V1.8.
 - The "energy-saving mode" must be activated on the Powerturn and on the GC 338.
 - Both operating modes are compliant with DIN EN 16005.
-

Standard operation

- ▶ Set DIP switch 3 (TST/SBY) on the GC 338 interface module to ON (Factory setting).
- ▶ Set the "Testing" parameters:
 - DPS: Set tE to 01 (testing with 24 V).
 - ST220: Set "Output signals", "Testing SI" to "Testing with 24 V".

Energy-saving mode

i SIS and SIO must be set to testing "Energy-saving mode". This setting extends the response time after the mode of operation has been changed.

- ▶ Set DIP switch 3 (TST/SBY) on the GC 338 interface module to OFF.
- ▶ Set the "Testing" parameters:
 - DPS: Set tE to 03 (energy-saving mode).
 - ST220: Set "Output signals", "Testing SI" to "Energy-saving mode".

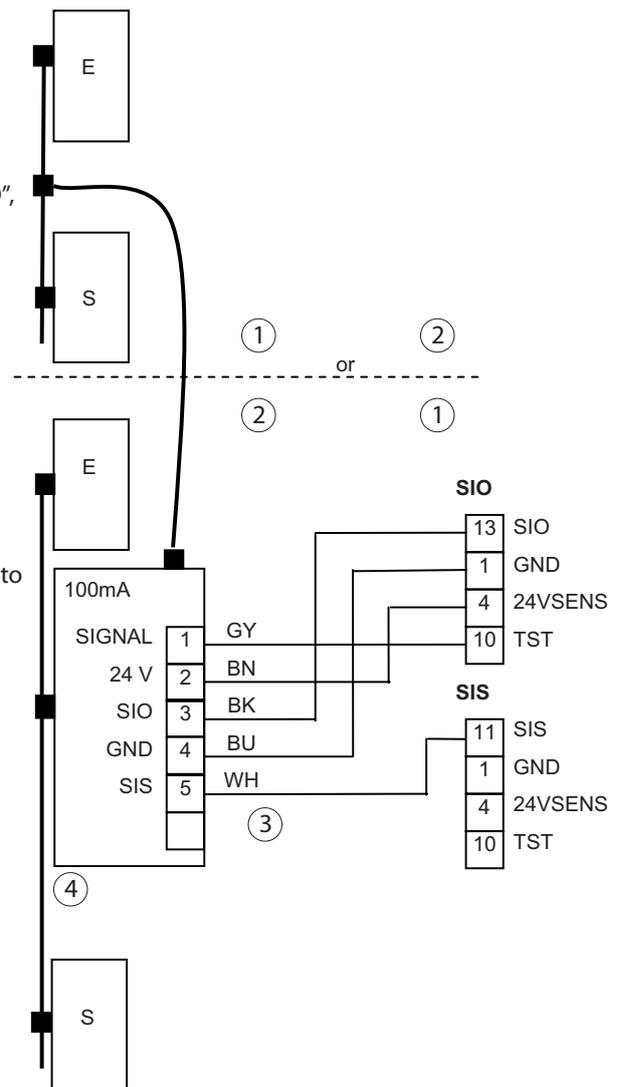
5.1.1 Monitoring closing and opening

Standard operation

- ▶ Set the "Contact type" parameters;
 - DPS: Set *F1* and *F3* to *U2* (normally closed contact) (factory setting).
 - ST220: Set the "Input signals", "SI1 – terminal SIS", "SI1 contact type" to "normally closed contact" and "SI3 – terminal SIO", "SI3 contact type" to "normally closed contact" (factory setting).

Energy-saving mode

- ▶ Set the "Contact type" parameters;
 - DPS: Set *F1* and *F3* to *U3* (frequency).
 - ST220: Set the "Input signals", "SI1 – terminal SIS", "SI1 contact type" to "Frequency" and "SI3 – terminal SIO", "SI3 contact type" to "Frequency".
- ▶ Set the "Function" parameters:
 - DPS: Set *F1* to the desired function and *F3* to *U5* (SIO stop) or *U5* (SIO stop SF GF).
 - ST220: Set the "Input signals", "SI1 – terminal SIS", "SI1 function" to the desired function and "SI3 – terminal SIO", "SI3 function" to "SIO stop" or "SIO stop SF GF".



- 1 Opposite hinge side
- 2 Hinge side
- 3 Door transmission cable
- 4 GC 338 interface module

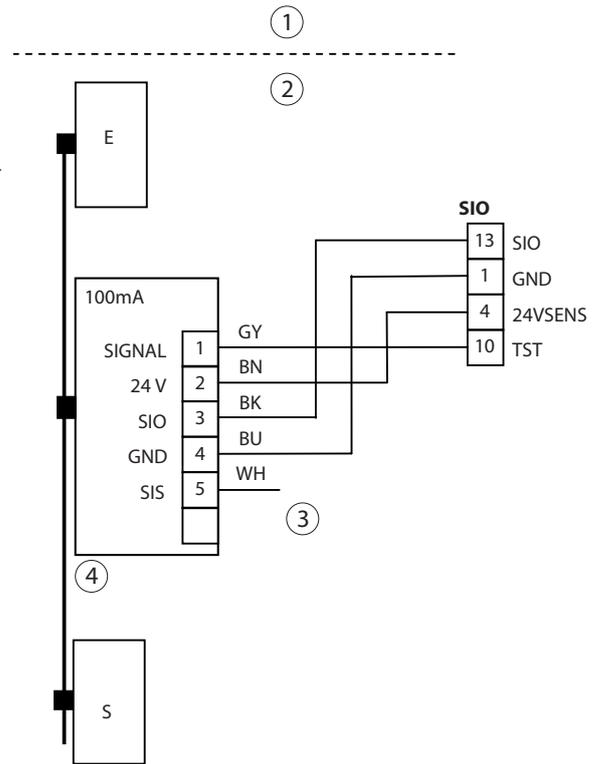
5.1.2 Monitoring opening

Standard operation

- ▶ Set the "Contact type" parameters:
 - DPS: Set **53** to **02** (normally closed contact) (factory setting).
 - ST220: Set the "Input signals", "SI3 – terminal SIO", "SI3 contact type" to "NC" (factory setting).
 - S1, S2: Set parameter 9 to 02 (normally closed contact).

Energy-saving mode

- ▶ Set the "Contact type" parameters;
 - DPS: Set **53** to **03** (frequency).
 - ST220: Set the "Input signals", "SI3 – terminal SIO", "SI3 contact type" to "Frequency".
- ▶ Set the "Function" parameters:
 - DPS: Set **F3** to **05** (SIO stop) or to **06** (SIO stop SF GF).
 - ST220: Set the "Input signals", "SI3 – terminal SIO", "SI3 function" to "SIO stop" or "SIO stop SF GF".
 - S1, S2: Set parameter 10 to 05 (SIO stop) or 06 (SIO stop SF GF).



- 1 Opposite hinge side
- 2 Hinge side
- 3 Door transmission cable
- 4 GC 338 interface module

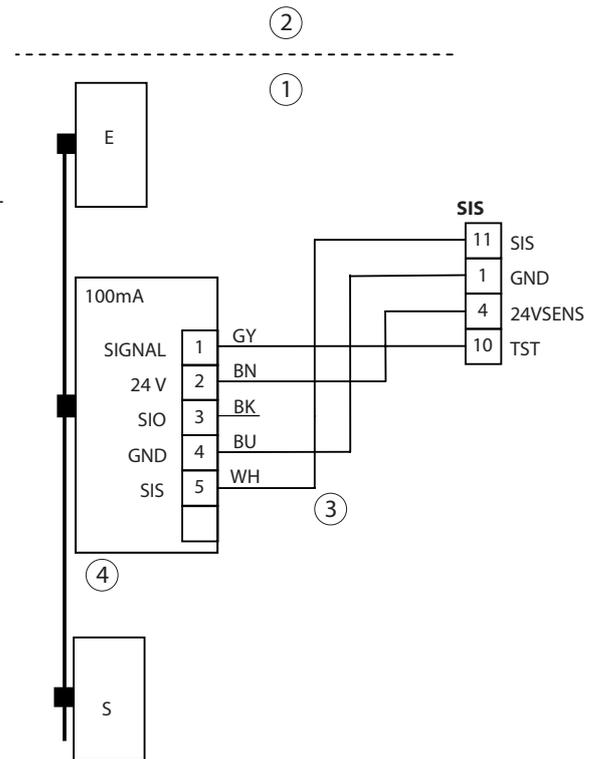
5.1.3 Monitoring closing

Standard operation

- ▶ Set the "Contact type" parameters:
 - DPS: Set 5 I to 02 (normally closed contact) (factory setting).
 - ST220: Set the "Input signals", "SI1 – terminal SIS", "SI1 contact type" to "normally closed contact" (factory setting).
 - S1, S2: Set parameter 7 to 02 (normally closed contact) (factory setting).

Energy-saving mode

- ▶ Set the "Contact type" parameters;
 - DPS: Set 5 I to 03 (frequency).
 - ST220: Set the "Input signals", "SI1 – terminal SIO", "SI1 contact type" to "Frequency".
- ▶ Set the "Function" parameters:
 - DPS: Set F I to the desired function.
 - ST220: Set the "Input signals", "SI1 – terminal SIS", "SI1 function" to the desired function.
 - S1, S2: Set parameter 8 to the desired function.



- 1 Opposite hinge side
- 2 Hinge side
- 3 Door transmission cable
- 4 GC 338 interface module

5.2 Sensor GC 334/GC 335

- i** ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

5.3 Safety sensor GC 342

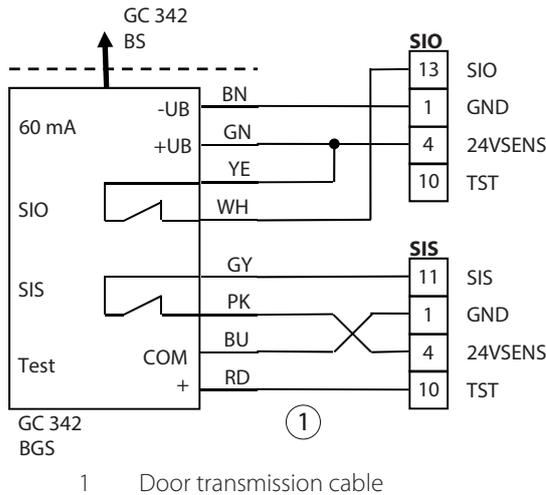
i EN 16005

- i** ▶ Recommendation: Use the optional remote control to change the sensor parameters.
- ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

Sensor position

- ▶ Parameter setting DCU8.
 - DPS: Set 4E to 02 (testing with GND).
 - ST220: Set "Output signals", "Testing SI" to "Testing with GND".

5.3.1 Monitoring closing and opening



Settings GC 342

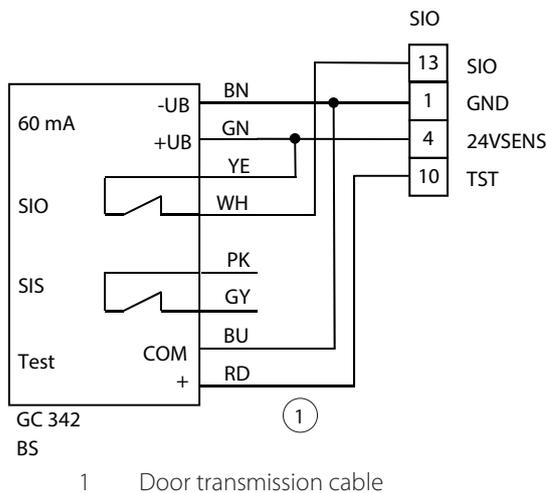


- ▶ Recommendation: Use the optional remote control to change the sensor parameters.
- ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

Settings DCU8

- ▶ Set the "Contact type" parameters:
 - DPS: Set **51** and **53** to **02** (normally closed contact) (factory setting).
 - ST220: Set the "Input signals", "SI1 – terminal SIS", "SI1 contact type" to "normally closed contact" and "SI3 – terminal SIO", "SI3 contact type" to "normally closed contact" (factory setting).
- ▶ Set the "Function" parameters:
 - DPS: Set **F1** to the desired function and **F3** to **05** (SIO stop) or **06** (SIO stop SF GF).
 - ST220: Set the "Input signals", "SI1 – terminal SIS", "SI1 function" to the desired function and "SI3 – terminal SIO", "SI3 function" to "SIO stop" or "SIO stop SF GF".

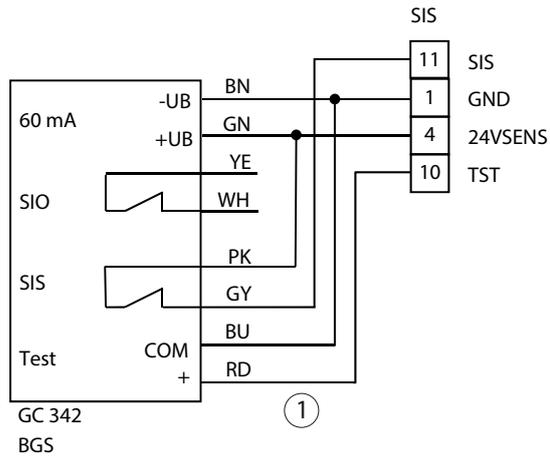
5.3.2 Monitoring opening



Settings DCU8

- ▶ Set the "Contact type" parameters:
 - DPS: Set **53** to **02** (normally closed contact) (factory setting).
 - ST220: Set the "Input signals", "SI3 – terminal SIO", "SI3 contact type" to "normally closed contact" (factory setting).
- ▶ Set the "Function" parameters:
 - DPS: Set **F3** to **05** (SIO stop) or **06** (SIO stop SF GF).
 - ST220: Set the "Input signals", "SI3 – terminal SIO", "SI3 function" to "SIO stop" or "SIO stop SF GF".

5.3.3 Monitoring closing



Settings DCU8

- ▶ Set the "Contact type" parameters:
 - DPS: Set *S1* to *ÜZ* (normally closed contact) (factory setting).
 - ST220: Set the "Input signals", "SI1 – terminal SIS", "SI1 contact type" to "normally closed contact" (factory setting).
- ▶ Set the "Function" parameters:
 - DPS: Set *F1* to the desired function.
 - ST220: Set the "Input signals", "SI1 – terminal SIS", "SI1 function" to the desired function.

5.4 Safety sensor GC 342+



EN 16005

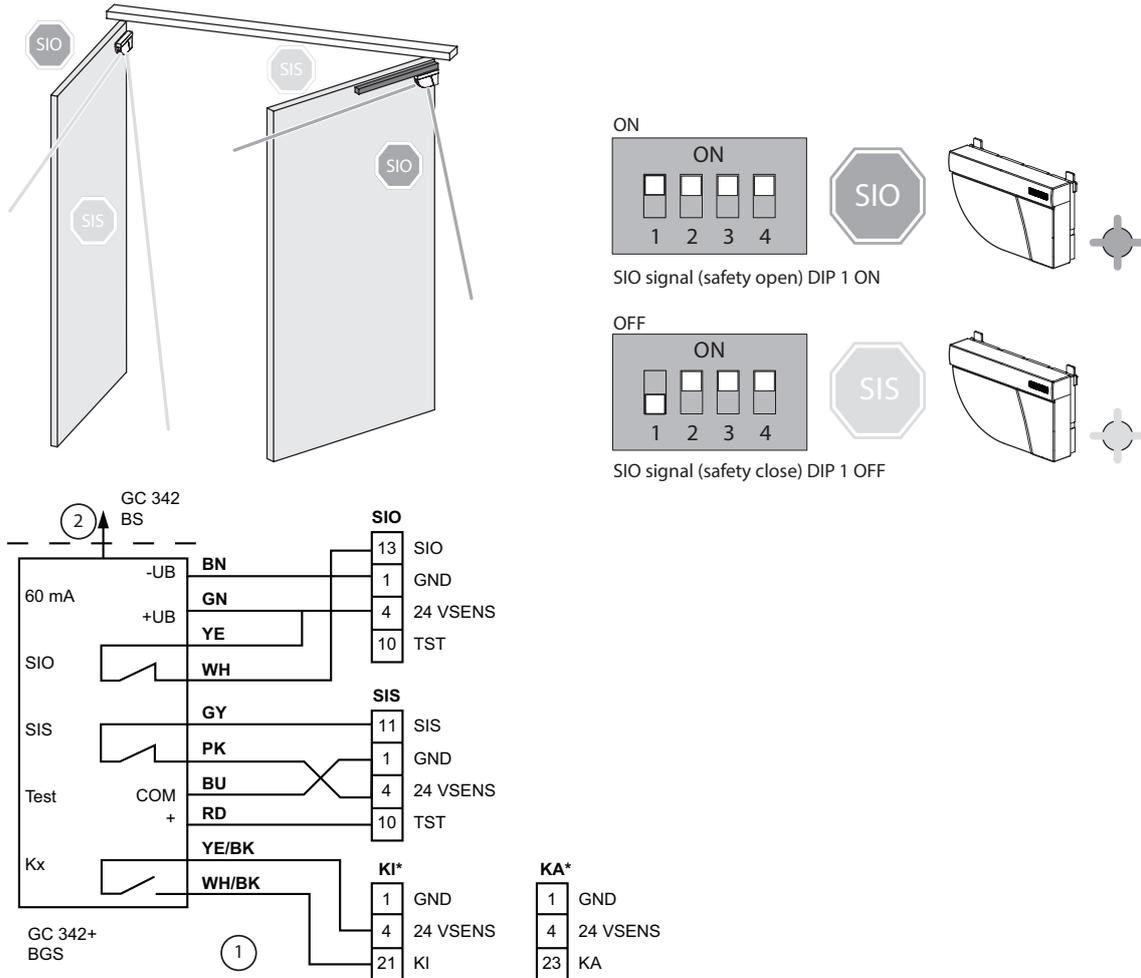


- ▶ Recommendation: Use the optional remote control to change the sensor parameters.
- ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

Sensor position

- ▶ To protect the door leaf and pinch zone, install one module in the top corner on both sides of the door leaf.

5.4.1 Monitoring opening and closing with activation



- 1 Door transmission cable
- 2 Door connection cable HS/OHS

Settings GC 342+



- ▶ Recommendation: Use the optional remote control to change the sensor parameters.
- ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

Settings DCU8

- ▶ Set type of contact KI resp. KA to "normally open contact".
- ▶ Set type of contact for SIS resp. SIO to "normally closed contact".
- ▶ Set testing SI to "Testing with GND".
- ▶ Set the "Contact type" parameters:
 - DPS: Set 51 and 53 to 02 (normally closed contact) (factory setting).
 - ST220: Set the "Input signals", "SI1- terminal SIS", "SI1 contact type" to "normally closed contact" and "SI3- terminal SIO", "SI3 contact type" to "normally closed contact" (factory setting).
- ▶ Set the "Function" parameters:
 - DPS: Set F1 to the desired function and F3 to 05 (SIO stop) or 06 (SIO stop SF GF).
 - ST220: Set the "Input signals", "SI1 – terminal SIS1", "SI1 function" to the desired function and "SI3- terminal SIO", "SI3 function" to "SIO stop" or "SIO stop SF GF".

- ▶ Set the "Contact type KI" parameters
 - DPS: Set L1 to D1 (factory setting).
 - ST220: Set the "Signals", "Input signals", "KI" and "KI contact type" to "NO contact" (factory setting).
- ▶ Set the "Contact type KA" parameters:
 - DPS: Set L0 to D1 (factory setting).
 - ST220: Set "Signals", "Input signals", "Contact sensor outside", "Contact sensor outside, type of contact" to "normally open contact" (factory setting).
- ▶ Set the "Testing" parameter.
 - DPS: Set tE to D2 (testing with GND).
 - ST220: Set "Output signals", "Testing SI" to "Testing with GND".

6 Mechanical contact

- The input KB is active in the modes of operation AU, LS and NA.
- In the case of 2-leaf systems the mechanical contact can be connected to the active leaf control unit or to the passive leaf control unit.
- On activation the active leaf opens and, if switched on, the passive leaf.
- During activation, the output of the mechanical contact is closed, 24 V are applied at the KB input (normally open contact). Parameters set as a normally closed contact must have 0 V applied on activation.

The state of the drive to which the ST220 is connected is displayed. With 2-leaf systems, the status of the active leaf is displayed.

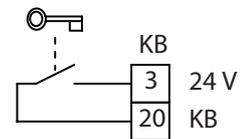
- ▶ Press the \leftarrow key.
- ▶ Select "Active leaf para" or "Passive leaf para" using the \blacktriangle or \blacktriangledown key and press the \leftarrow key.

For further settings see the descriptions below:

- Set the "Contact type" parameters:
 - With DPS: Set $\mathbb{C}6$ to $\mathbb{O}1$ (normally open contact) or to $\mathbb{O}2$ (normally closed contact).
 - With ST220: Set the "Signals", "Input signals", "KB", "KB contact type" to "normally open contact" or "normally closed contact".

6.1 Key switch

- Set the parameter "Contact type" with
 - DPS: Set $\mathbb{C}1$ to $\mathbb{O}1$ (factory setting).
 - ST220: Set the "Signals", "Input signals", "KB", "KB contact type" to "normally open contact" (factory setting).
- SCT key switch, single-pole, flush-mounted, AS500 without Euro profile half cylinder



7 Contact sensor inside

- The input KI is active in the modes of operation AU and LS.
 - In the case of 2-leaf systems the contact sensor inside can be connected to the active leaf control or to the passive leaf control.
 - On activation the active leaf opens and, if switched on, the passive leaf.
- The state of the drive to which the ST220 is connected is displayed. With 2-leaf systems, the status of the active leaf is displayed.

▶ Press the \leftarrow key.

▶ Select "Active leaf para" or "Passive leaf para" using the \blacktriangle or \blacktriangledown key and press the \leftarrow key.

For further settings see the descriptions below:

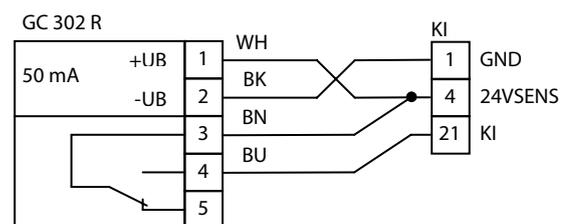
- The sensor for monitoring closing can also be used as a contact sensor inside.
- Set the parameters with:
 - DPS: Set $F1$ to 03 .
 - ST220: Set the "Signals", "Input signals", "SI1 – terminal SIS1", "SI1 function" to "SIS and KI".
- An activation delay time can be set for the input KI. This time is added to the general activation delay time (opening delay).
- Set the parameters with:
 - DPS: Set $I\bar{R}$ to the desired delay time (0 s ... 9 s).
 - ST220: Use the \blacktriangle or \blacktriangledown keys to set "Signals" "Input signals", "KI" or "KI delay" to the desired delay time (0 s ... 9 s) and press the \leftarrow key.

7.1 Radar movement detector GC 302 R



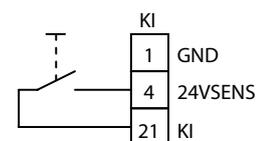
- ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

- On activation, the output of the GC 302 R is closed (24 V applied to the KI input).
- Set the parameter "Contact type" with
 - DPS: Set $E1$ to 01 (factory setting).
 - ST220: Set the "Signals", "Input signals", "KI" and "KI contact type" to "NO contact" (factory setting).
- The GC 302 R is a direction-sensitive radar movement detector.



7.2 Push button (potential-free normally open contact)

- Set the parameter "Contact type" with
 - DPS: Set $E1$ to 01 (normally open contact) (factory setting).
 - ST220: Set the "Signals", "Input signals", "KI" and "KI contact type" to "NO contact" (factory setting).

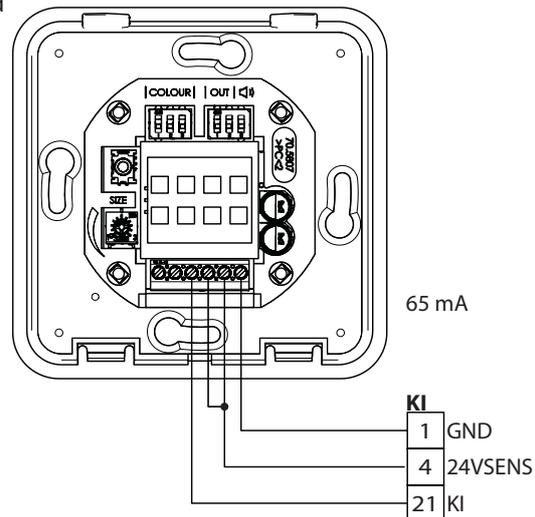


7.3 Non-contact activation sensor GC 307+

- i** ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

The GC 307+ is a non-contact activation sensor with a range of 10...60 cm, for manual activation.

- ▶ Set the parameter "Contact type" with
 - DPS: Set \bar{I} to \bar{I} (normally open contact) (factory setting).
 - ST220: Set the "Signals", "Input signals", "KI" and "KI contact type" to "NO contact" (factory setting).

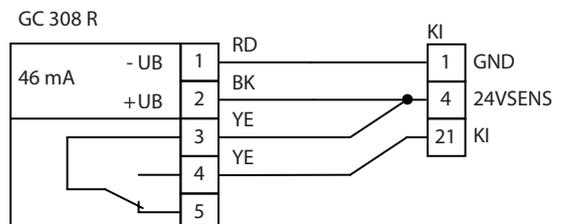


7.4 Radar movement detector GC 308 R

- i** ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

The GC 308 R is a radar sensor that has been designed for use as an opening pulse generator on automatic doors. Due to the Doppler effect, the sensor detects movements, whereby a distinction is made between approach and distance to the detector. The mutual influence of several sensor systems with hazardous effect is not possible.

- ▶ Set the parameter "Contact type" with
 - DPS: Set \bar{I} to \bar{I} (normally open contact) (factory setting).
 - ST220: Set the "Signals", "Input signals", "KI" and "KI contact type" to "NO contact" (factory setting).



- i** ▫ On activation, the output of the GC 308 R is closed (24 V applied to the KI input).

8 Contact sensor outside



- ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

- The input contact sensor outside is only active in the AU operating mode.
 - In the case of 2-leaf systems the contact sensor outside can be connected to the active leaf control or to the passive leaf control.
 - On activation the active leaf opens and, if switched on, the passive leaf.
- The state of the drive to which the ST220 is connected is displayed. With 2-leaf systems, the status of the active leaf is displayed.

▶ Press the \leftarrow key.

▶ Select "Active leaf para" or "Passive leaf para" using the \blacktriangle or \blacktriangledown key and press the \leftarrow key.

For further settings see the descriptions below:

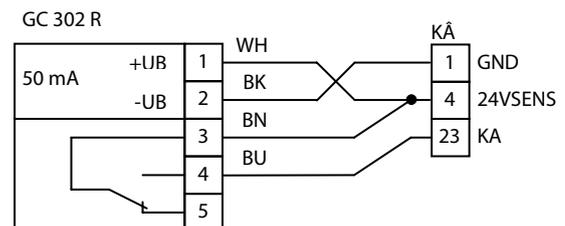
- The sensor for monitoring closing can also be used as a contact sensor outside.
- Set the parameters with:
 - DPS: Set $F1$ to 04 .
 - ST220: Set the "Signals", "Input signals", "SI1 – terminal SIS1", "SI1 function" to "SIS and KA".
- An activation delay time can be set for the input KA. This time is added to the general activation delay time (opening delay).

Set the parameters with:

- DPS: Set RR to the desired delay time (0 s ... 9 s).
- ST220: Use the \blacktriangle or \blacktriangledown key to set "Signals", "Input signals", "KA", "KA delay" to the desired delay time (0 s ... 9 s) and press the \leftarrow key.

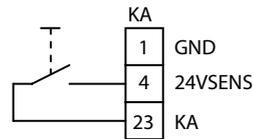
8.1 Radar movement detector GC 302 R

- For information see GC 302 R (KI).
- On activation, the output of the GC 302 R is closed (24 V applied to the KA input).
- Set the "Contact type" parameters with:
 - DPS: Set $L0$ to 01 (factory setting).
 - ST220: Set "Signals", "Input signals", "Contact sensor outside", "Contact sensor outside, type of contact" to "normally open contact" (factory setting).



8.2 Push button (potential-free normally open contact)

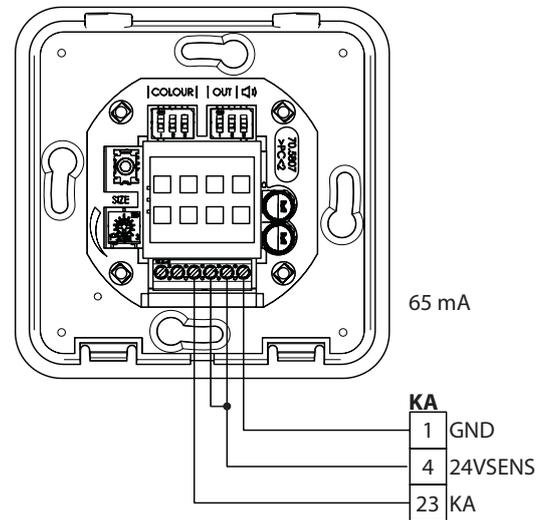
- For information see push button (KI).
- Set the "Contact type" parameters with:
 - DPS: Set $\underline{L0}$ to $\underline{D1}$ (factory setting).
 - ST220: Set the "Signals", "Input signals", "KA" and "KA contact type" to "NO contact" (factory setting).



8.3 Non-contact activation sensor GC 307+

The GC 307+ is a non-contact activation sensor with a range of 10...60 cm, for manual activation.

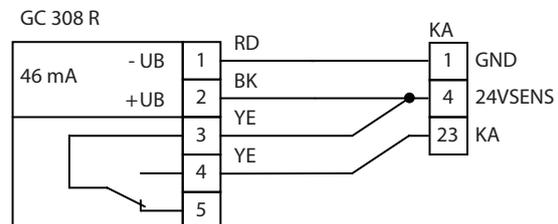
- ▶ Set the parameter "Contact type" with
 - DPS: Set $\underline{L0}$ to $\underline{D1}$ (factory setting).
 - ST220: Set the "Signals", "Input signals", "KA" and "KA contact type" to "NO contact" (factory setting).



8.4 Radar movement detector GC 308 R

The GC 308 R is a radar sensor that has been designed for use as an opening pulse generator on automatic doors. Due to the Doppler effect, the sensor detects movements, whereby a distinction is made between approach and distance to the detector. The mutual influence of several sensor systems with hazardous effect is not possible.

- ▶ Set the parameter "Contact type" with
 - DPS: Set $\underline{L1}$ to $\underline{D1}$ (normally open contact) (factory setting).
 - ST220: Set the "Signals", "Input signals", "KI" and "KI contact type" to "NO contact" (factory setting).



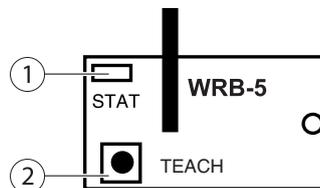
- On activation, the output of the GC 308 R is closed (24 V applied to the KA input).

9 Radio control



- ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

- Radio reception board WRB-5
- 1-channel remote control WTH-1
- 2-channel remote control WTH-2
- 4-channel remote control WTH-4
- Transmitting module WTM



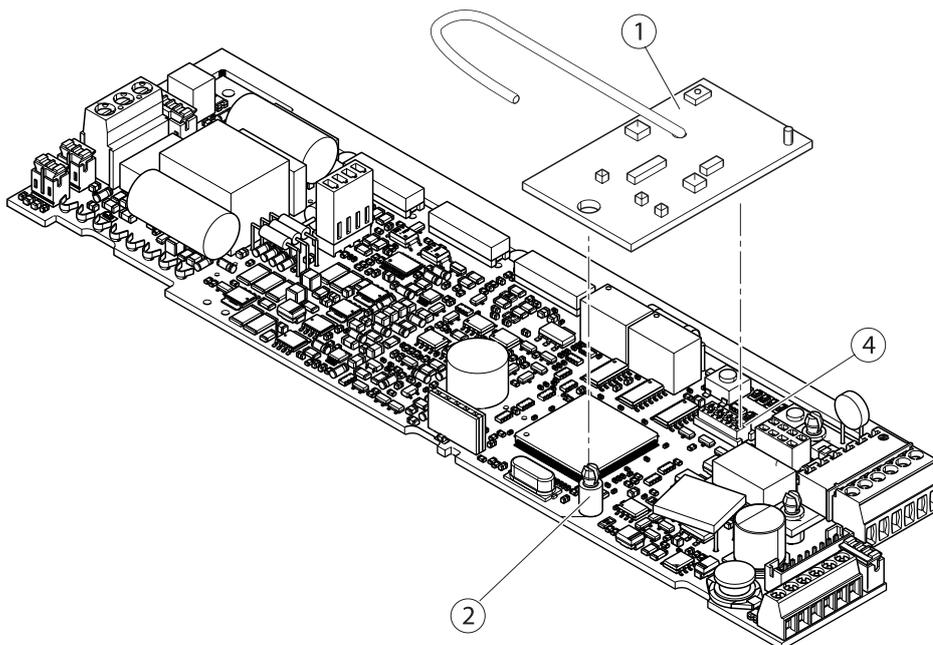
- 1 Status LED
- 2 Teach button

- The radio reception board WRB-5 can optionally be plugged onto the DCU800 control.
- The receiving module has the two channels FK1 and FK2.
- The keys on the remote control can be taught separately using the teach button on the receiving module.
- A maximum of twelve transmitters can be stored per channel in the memory of the receiver.

9.1 Plug the radio reception board WRB-5 into the control circuit board DCU800



Only plug the radio reception board WRB-5 onto the control DCU800 in the de-energised state.



- ▶ Press spacer (2) onto the control circuit board DCU800 (3).
- ▶ Set the radio reception board WRB-5 (1) onto spacer (2) and connector strip (4).
- ▶ Move the aerial to the right position, see illustration.

9.2 Radio channels

Radio channel 1

The function of the radio channel FK 1 depends on how long the assigned key is pressed.

- < 5 seconds: Function as contact sensor input KI
- > 5 seconds in mode of operation AU or LS: Control changes to mode of operation DO. After the button has been pressed briefly again: Control changes back to mode of operation AU.

Radio channel 2

The function of the radio channel FK 2 is identical to that of activation input KB.

10 Push And Go



WARNING

Danger of injury due to crushing and shearing!

▶ During an activated Push & Go function door handles can form crushing and shearing points. Use safety sensors.

- The Push And Go function allows activation of the drive without contact sensors being used.
- When the Push And Go function is set, the drive opens the door automatically as soon as the door leaf is moved manually out of the closing position.
- The opening angle for use of the automatic opening function can be set (1...20%; if the max. opening width is 100%).
- For convenient use, the opening time should not be set to the minimum value.



An opening angle that is set too small can result in undesired automatic opening of the door. According to EN 16005, the door must be marked when this function is used.

- For operation of the display programme switch DPS, see chapter 29.4 "Display programme switch DPS", p. 95.
- For operation of the service terminal ST220, see chapter 29.1 "Service terminal ST220", p. 76. The state of the drive to which the ST220 is connected is displayed. With 2-leaf systems, the status of the active leaf is displayed.

▶ Press the \leftarrow key.

▶ Select "Active leaf para" or "Passive leaf para" using the \blacktriangle or \blacktriangledown key and press the \leftarrow key.

For further settings see the descriptions below:

- Set the parameters with:
 - DPS: Set P_{ω} to the desired opening range (1-20) to start the automatic opening function or set P_{ω} to 00 to disable the function. Set OP to the desired hold-open time with "Push And Go" (0 – 60 s).
 - ST220: Use the \blacktriangle or \blacktriangledown key to set the "Movement parameters", "Push And Go" to the opening range (1-20) to start the automatic opening function or set "Push And Go" to 0 to disable the function. Set the "Movement parameters", "Hold-open times", "Push And Go" to the desired hold-open time (0 – 60 s).

11 Configurable inputs

- Various special functions are assigned to the configurable inputs PE1, PE2 and PE3, see chapter 29 "Service menu", p. 76.. The type of contact required for the desired function can be found in chapter 29.6 "DPS service menu and service buttons S1/S2 with LEDs", p. 97. or chapter 29.3 "Service menu ST220", p. 77.
- The configurable input PE1 is a pure binary input which is only suitable for the connection of normally open or normally closed contacts - not however for the connection of the analogue programme switch MPS.
- The configurable inputs PE2 and PE3 are analogue inputs which are suitable for the connection of normally open or normally closed contacts as well as for the connection of the analogue programme switch MPS, see chapter 16 "Mode of operation", p. 47.
- For operation of the display programme switch DPS, see chapter 29.4 "Display programme switch DPS", p. 95.
- For operation of the service terminal ST220, see chapter 29.1 "Service terminal ST220", p. 76.

The state of the drive to which the ST220 is connected is displayed. With 2-leaf systems, the status of the active leaf is displayed.

- ▶ Press the \leftarrow key.
- ▶ Select "Active leaf para" or "Passive leaf para" using the \blacktriangle or \blacktriangledown key and press the \leftarrow key.
- ▶ Select "Signals" "Input signals" and press the \leftarrow key.

For further settings see the description below:

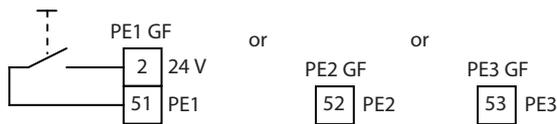
- Set the parameters with:
 - DPS: Set $E1$, $E2$ or $E3$ to the desired function.
 - ST220: Set "PE1", "PE1 function", "PE2", "PE2 function" or "PE3", "PE3 function" to the desired function.

11.1 MPS

See chapter 16.1 "Programme switch", p. 47. An MPS can only be connected to PE2 and PE3.

11.2 2-leaf opening and 1-leaf opening

- The configurable inputs of the active leaf control can be used to change between the operating modes 2-leaf opening or 1-leaf opening as required (depending on the parameter setting). This can, for example, be advisable if the type of opening is switched by a timer via the available programme switching inputs (NA, LS, AU, DO).
- The change in the type of opening is not possible if the analogue programme switch MPS is connected since this specifies "2-leaf opening" or "1-leaf opening" in a fixed way.
- Set the parameters with:
 - DPS: Set $E1$, $E2$ or $E3$ to $D3$ (switchover summer) or $D4$ (switchover winter).
 - ST220: Set "PE1 function", "PE2 function" or "PE3 function" to "2-leaf opening" (switch over summer) or "1-leaf opening" (switch over winter).

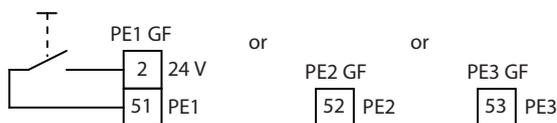


11.3 Sabotage

- The configurable input PE1, PE2 or PE3 can be used for connection of an alarm contact which can serve to monitor a closed (key switch) housing. In the case of the closed housing, the contact is closed and 24 V is applied to the input PE1, PE2 or PE3. When the alarm contact opens, 0 V is applied to the input PE1, PE2 or PE3. In this case, the door remains closed and locked.

If the contact is interrupted, KB is not evaluated in the NA, LS, AU mode of operation. All other functions remain the same. Then acknowledgement must be made (close alarm contact, delete error or by changing mode of operation).

- Set the parameters with:
 - DPS: Set $E1$, $E2$ or $E3$ to $D5$ (sabotage).
 - ST220: Set "PE1 function", "PE2 function" or "PE3 function" to "Sabotage NC".



11.4 Closing position active leaf

Feedback from a door contact attached in the closing position, connected to PE1, PE2, or PE3. The door contact closes as soon as the door leaf has reached the closing position (active leaf).

- Set the parameters with:
 - DPS: Set *E1*, *E2* or *E3* to *D6* (closing position door closer GF).
 - ST220: Set "PE1 function", "PE2 function" or "PE3 function" to "closing position GF".

11.5 Emergency lock



WARNING

Danger of injury due to crushing and shearing!

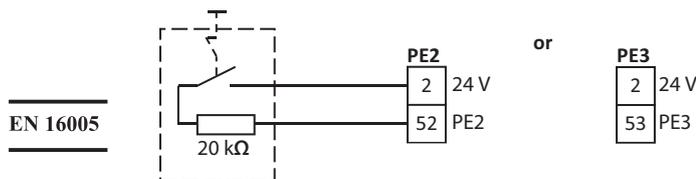
The safety sensors and the obstacle are not evaluated. The door closes with the set force.

- ▶ If the door closes unexpected, move out of the danger zone.



Not permitted in the case of rebated doors and escape routes. Only the use of a configurable input is permitted.

- The configurable inputs PE2 and PE3 can be used to connect an emergency lock switch.
- When the emergency lock switch is activated, the contact is closed and 17.83 V is applied to the input PE2 or PE3. Contact sensors KA, KI and KB, sensor strips SIS and SIO as well as obstacle detection are hidden. Mode of operation hold open is cancelled. The door closes and locks. The function requires a 20 kOhm terminating resistor for proper function.
- The door remains closed as long as the emergency lock signal is applied to the input.
- Set the parameters with:
 - DPS: Set *E2* or *E3* to *D7* (emergency lock.20 KOhm).
 - ST220: Set "PE2 function" or "PE3 function" to "Emergency lock.20kOhm NO".



11.6 Additional contact sensors (P-KI, P-KA)

- The configurable inputs can be used to connect additional normally open contacts as contact sensors inside or contact sensors outside.
- Set the parameters with:
 - DPS: Set *E1*, *E2* or *E3* to *D8* (contact sensor inside) or to *D9* (contact sensor outside).
 - ST220: Set "PE1 function", "PE2 function" or "PE3 function" to "P-KI activation NO" or "P-KA activation NO".
- See chapter 7 "Contact sensor inside", p. 22. or chapter 8 "Contact sensor outside", p. 24. for more information.
- The contact sensors can either be connected to terminal 2 (24 V) or terminal 4 (24 VSens).

11.7 Switch functions

11.7.1 General points

- On activation, the output of the push button is closed (24 V applied to the PE1 or PE2 input).
- In the case of 2-leaf systems the push button can be connected to the active leaf control or to the passive leaf control.
- ▶ Set the hold-open time at the active leaf control.
- If the push button is connected to the passive leaf control, both door leaves open when the switch function is activated, even if the "1-leaf" electric strike of operation is set. The mode of operation "Automatic" must be set on the passive leaf.

11.7.2 Switch function

1st switch contact = open door / 2nd switch contact = close door.

If no second switch contact takes place, the door remains open until the mode of operation is changed.

In the case of a 2-leaf drive, 2-leaf opening takes place if the push button is connected at the SF drive.

DPS

- ▶ Set $E1$ or $E2$ to 10 .

ST220

- ▶ Set "PE1", "PE1 function" or "PE2", "PE2 function" to "Push button NO".

11.7.3 Switch function OHZ



In the case of 2-leaf drives, the settings on the active leaf control determine the hold-open time.

DPS

- ▶ Set $E1$ or $E2$ to 11 for:

1st switch contact = open door / 2nd switch contact = close door

If the SIO is triggered before the hold-open time or the 2nd switch contact is activated, the hold-open time runs out and is not cancelled by the 2nd switch contact.

At the latest after the end of the hold-open time

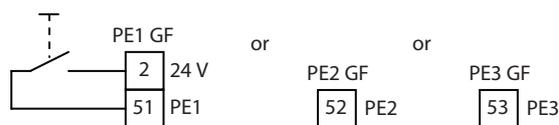
- αH for 2-leaf drive and 2-leaf opening type if the push button is connected at the SF drive.
- αr for 1-leaf drive or with 2-leaf drive and opening type 1-leaf if the push button is connected at the GF drive.

ST220

Set "PE1", "PE1 function" or "PE2", "PE2 function" to "Push button hold-open time NO" for:

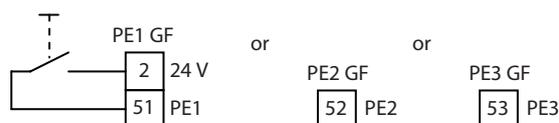
1st switch contact = open door / 2nd switch contact = close door

The door closes at the latest after the hold-open time has expired.



11.8 Control reset

- The control unit can be reinitialized via the configurable inputs. After the push button has been activated, the drive behaves in the same way as after the mains voltage has been switched on.
- Set the parameters with:
 - DPS: Set $E1$, $E2$ or $E3$ to 13 (reset switch).
 - ST220: Set "PE1 function", "PE2 function" or "PE3 function" to "Reset switch NO".

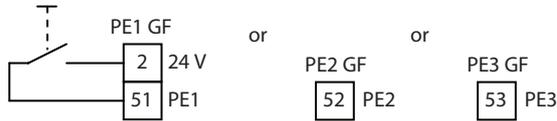


11.9 Double push button (1-leaf/2-leaf door opening)

In the case of 2-leaf drives the door can open via the configurable inputs of the active leaf control in 1-leaf or 2-leaf mode as desired by pressing a button if the "1-leaf opening" operating mode setting is active. If the push button is pressed once, only the active leaf opens and closes after the 1-leaf hold-open time has expired. With two successive push button activations within 1.5 s open active leaf and passive leaf and close after the hold-open time 2-leaf has expired.

Set the parameters with:

- DPS: Set $E1$, $E2$ or $E3$ to 14 (double push button).
- ST220: Set "PE1 function", "PE2 function" or "PE3 function" to "Double push button".



11.10 STOP

Configurable inputs PE1, PE2 and PE3 can be used for connection of a stop push button or safety edge. Inputs PE2 and PE3 can also be evaluated in the same way.

- On activation, the door leaf stops (in case of 2-leaf systems both leaves) and remains in the stopped position as long as the input is active.
- In the case of 2-leaf systems, the stop push button can be connected to the active leaf control unit or to the passive leaf control unit.
- For operation of the display programme switch DPS, see chapter 29.4 "Display programme switch DPS", p. 95.
- For operation of the service terminal ST220, see chapter 29.1 "Service terminal ST220", p. 76.

The state of the drive to which the ST220 is connected is displayed. With 2-leaf systems, the status of the active leaf is displayed.

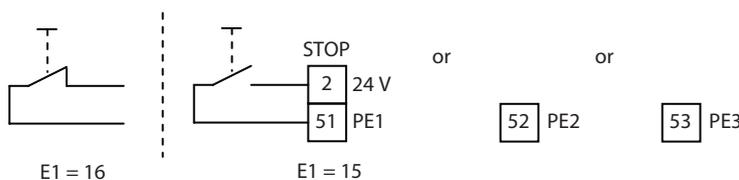
- ▶ Press the \leftarrow key.
- ▶ Select "Active leaf para" or "Passive leaf para" using the \blacktriangle or \blacktriangledown key and press the \leftarrow key.

For further settings see the description below:



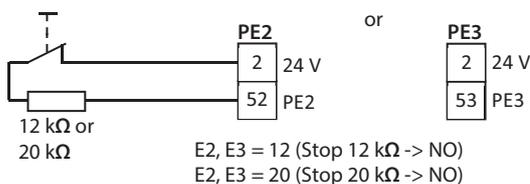
For PE1, PE2, PE3:

- Set the "Contact type" parameters with:
 - DPS: Set $E1$, $E2$ or $E3$ to 15 (normally open contact, not monitored) or to 15 (normally open contact, not monitored).
 - ST220: Set "Signals", "Input signals", "PE1 function", "PE2 function" or "PE3 function" to "Stop normally closed contact" or "Stop normally open contact".



For PE2 or PE3:

- In order to ensure protection of persons as specified in EN 16005, a terminating resistor 12 k or 20 k must be connected to monitor the input. The terminating resistor must be connected directly to the switch contact.
- Set the "Contact type" parameters with:
 - DPS: $E2$ or $E3$ to 12 or 20.
 - ST220: Set "Signals", "Input signals", "PE2" or "PE3", "PE2 function" or "PE3 function" to "Stop 12 kOhm" or "Stop 20 kOhm".



11.11 Closing position detection

11.11.1 Closing position door leaf (active leaf drive, passive leaf drive)

Feedback from a door contact attached in the closing position, connected to PE1, PE2, or PE3 of the control. The door contact closes as soon as the door leaf belonging to the drive has reached the closing position.

Set the parameters with

- DPS: Set $E1$, $E2$ or $E3$ to 05 (closing position GF).
- ST220: Set "PE1 function", "PE2 function" or "PE3 function" to "closing position GF".

11.11.2 Closing position detection passive leaf with 2-leaf doors with manual passive leaf

See chapter 17.1 "Powerturn IS/TS: Active leaf automated, passive leaf with door closer", p. 52. and chapter 18 "Powerturn F and Powerturn F/R on fire protection doors", p. 55.

11.12 WC control

Connection of the internal push button for the WC function, refer also to chapter 15 "WC control", p. 45.

11.13 Servo function with fire alarm

Refer also to chapter 28.2.1 "Servo function with additional torque servo fire alarm", p. 74.

11.14 1-leaf Open

With this function, a 2-leaf system in the setting type of opening "2-leaf opening" can have only 1 leaf opened with the connected activation device.

- The passive leaf must be switched on.
- On activation, the output of the activation device is closed (24 V applied to the PE1 or PE2 input).
- With 2-leaf systems the activation device must be connected to the active leaf control. Set the hold-open time at the active leaf control.

(In the case of 2-leaf drives, the settings on the active leaf control determine the hold-open time)

DPS

Set $E1$ or $E2$

- ▶ to 23 .

In the case of a 2-leaf drive, 1-leaf opening takes place if the activation device is connected to the active leaf control.

- ▶ Set $o r$ on the active leaf controller.

ST220

Set "PE1", "PE1 function" or "PE2", "PE2 function"

- ▶ to "1-leaf opening" for activation device on the active leaf.

The door closes at the latest after the hold-open time has expired.

- ▶ Set hold-open times 1-leaf (winter) on the active leaf control.

11.15 Suppression of the safety sensors

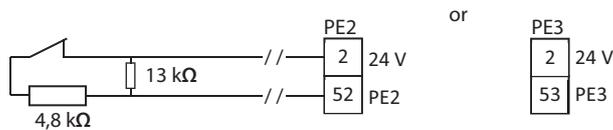
When a signal is applied to PE 2 or PE 3, the connected safety sensors are not evaluated. The signal usually comes from a central fire alarm system. The function can be used for the doors on rescue routes. The door then opens automatically in the event of a fire and is not prevented opening and closing by smoke near the sensors.

- This function is only available for 1-leaf doors.
- Only manually operated activation devices, which do not react to smoke or heat, are permitted (such as push buttons).
- When the function is active, the door drive moves at safe speed and displays the message "09" on the DPS.
- If a smoke switch control unit or lintel-mounted smoke switch are connected, this function is only available up to a smoke alarm.
- ▶ Implement line monitoring so that the function is not triggered by a fault (e.g. line short-circuit). Attach the resistors directly at the signal output of the fire alarm system.



With this function, the door can also move without safety sensors:

- ▶ Carry out a risk analysis on site.
- ▶ Evaluate residual risk through impact.



- Contact closed = normal operation, safety sensors are evaluated.
- Contact opened = function active, safety sensors are not evaluated.
- Line fault (short circuit, line break) = normal operation safety sensors are evaluated.

Set the parameters with:

DPS

Set $E2$ or $E3$

- ▶ Set to 29 .

ST220

"PE2 function" or "PE3 function"

- ▶ Set to "Fire alarm without SI".

12 Configurable outputs

Various switching functions can be assigned to the configurable outputs PA1 and PA2, see chapter 29 "Service menu", p. 76.

- For operation of the display programme switch DPS, see chapter 29.4 "Display programme switch DPS", p. 95.
- For operation of the service terminal ST220, see chapter 29.1 "Service terminal ST220", p. 76.

The state of the drive to which the ST220 is connected is displayed. With 2-leaf systems, the status of the active leaf is displayed.

- ▶ Press the \leftarrow key.
- ▶ Select "Active leaf para" or "Passive leaf para" using the \blacktriangle or \blacktriangledown key and press the \leftarrow key.
- ▶ Select "Signals" and press the \leftarrow key.

For further settings see the description below:

Set the parameters with:

- DPS: Set $R1$ or $R2$ to the desired function.
- ST220: Set "PA1", "PA1 function" or "PA2", "PA2 function" to the desired function.

12.1 Configurable output PA1

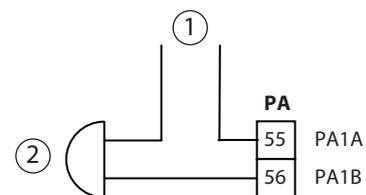
PA1 is a potential-free relay contact, switching voltage max. 24 V AC/DC, current 0.5 A.

12.1.1 Gong

The output is selected if KA or SIS (for a "SIS and KA" setting) is activated in the automatic only AU mode of operation.

- Set the parameters with:
 - DPS: Set $R1$ to $G1$ (Gong).
 - ST220: Set "PA1 function" to "Gong".

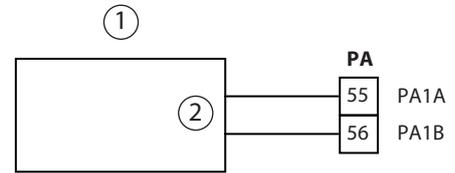
- 1 On-site power supply max. 24 V/0.5 A AC/DC
- 2 On-site activator, e.g. gong or door bell



12.1.2 Fault

- The function is used for fault messages, e.g. to an on-site building control centre. The contact closes or opens if the control unit determines a fault, see chapter 30 "Fault messages", p. 107.
- Set the parameters with:
 - DPS: Set **R1** to **U2** (Fault normally open contact) or to **U3** (Fault normally closed contact).
 - ST220: Set "PA1 function" to "Fault normally open contact" or "Fault normally closed contact".

- 1 Building control centre (on-site)
- 2 Signal input



12.1.3 Fault indication for MPS

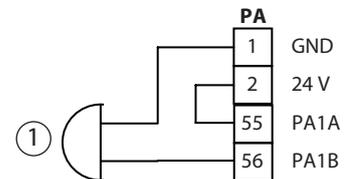
The function is used to switch the fault LED at the MPS. The contact closes if the control unit determines a fault, see chapter 30 "Fault messages", p. 107.. When maintenance is due, the output is switched cyclically, the fault LED on the MPS flashes.

- For connection see chapter 16.1 "Programme switch", p. 47.
- Set the parameters with:
 - DPS: Set **R1** to **U4** (MPS fault).
 - ST220: Set "PA1 function" to "MPS fault".

12.1.4 Warning signal

- The function is used to switch an on-site activator on/off when the door is opened or closed.
- Maximum permitted total power consumption by the control unit.
- Set the parameters with:
 - DPS: Set **R1** to **U5** (warning signal).
 - ST220: Set "PA1 function" to "Warning signal".

- 1 24 V DC activator supplied on the drive side



12.1.5 Electric strike



The electric strike function is not permitted if the drive is used for the fire protection area (Powerturn F, F/R, F-IS).



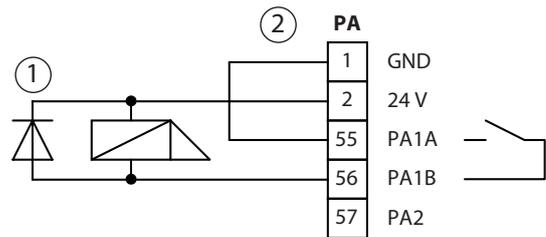
- An additional electric strike can be connected to the configurable output PA1 in addition to the electric strike connection (see chapter 13 "Electric strike/motor lock", p. 41. The electric strike connection must be configured otherwise the function will not work on the PA.
- Maximum permitted total power consumption by the control unit.
- Set the parameters with:
 - DPS: Set **R1** to **U6** (Electric strike).
Set **to** to the electric strike type connected.
 - ST220: Set "PA1 function" to "Electric strike".
Set "Electric strike type" to the electric strike type connected.

Alternative parameter setting with:

- DPS: Set **R1** to **Z5** (fail-secure electric strike) or **Z6** (fail-safe electric strike).
- ST220: Set "PA1 function" to "TOE fail-secure NO" or "TOE fail-safe NC".

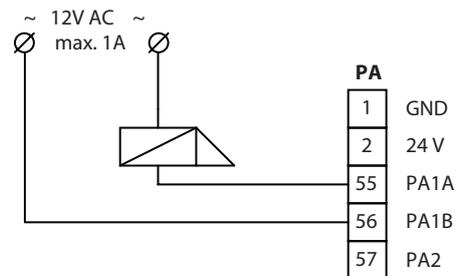
Drive-side supplied electric strike

- 1 Free-wheeling diode 1N4007
- 2 Wire jumper



On-site supplied electric strike

- Contact load output PA1 with 12 V AC: max. 1 A



Bolt message (RM)

See chapter 13 “Electric strike/motor lock”, p. 41. “Electric strike/motor lock”, “Bolt message”.

12.1.6 Door status message

- The function is used to signal the door status, e.g. to an on-site building control centre.

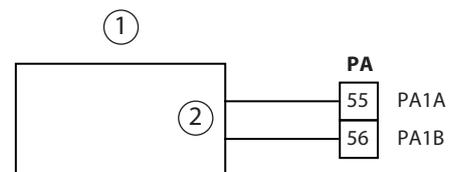
▫ Message function/door status:

- | | | | |
|----|-------------------|----|---|
| 08 | Closed and locked | 14 | Exit only |
| 09 | Closed | 15 | Automatic |
| 10 | Not closed | 16 | Hold open |
| 11 | Open | 18 | Day/night mode changeover |
| 12 | Off | 20 | Maintenance due (see chapter 12.1.9 “Maintenance due”, p. 37) |
| 13 | Night mode | | |

▫ Set the parameters with:

- DPS: Set *FI* to the desired message function.
- ST220: Set “PA1 function” to the desired message function.

- 1 Building control centre (on-site)
- 2 Signal input



12.1.7 Light control



DANGER

Risk of fatal injury due to electric shock!

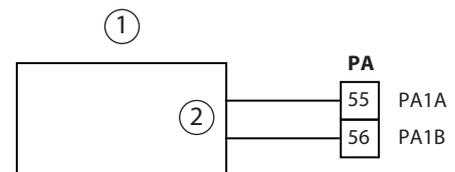
Danger of damage to the electrical control unit!

Output PA1 of the control unit cannot switch the illumination directly.

► Do not connect mains voltage to the PA1 output of the control unit.

- The function is used to activate a light controlling device which, for example, switches on the entry illumination as soon as a contact sensor (KI, KA, KB, SIS+KI, SIS+KA) is activated or the door is opened manually.
- Set the parameters with:
 - DPS: Set *R1* to *I7* (Light control).
 - ST220: Set "PA1 function" to "Light control".

- 1 Light control system (on site)
- 2 Activation input



12.1.8 Day/night mode changeover

- The function is used to mode of operation to an on-site building control centre or for switching a motor lock to day mode operation. The output contact closes if the mode of operation LS, AU 1-leaf, DO, or AU 2-leaf or a motor lock is set.
- Set the parameters with:
 - DPS: Set *R1* to *I8* (mode of operation message "Day/night mode").
 - ST220: Set "PA1 function" to "Day/night mode switchover".
- Connecting a building control centre, see chapter 12.2.2 "Fault", p. 38.

12.1.9 Maintenance due

- The function is used to signal that maintenance is due for the door drive to an on-site building control centre.
- Set the parameters with:
 - DPS: Set *R1* to *Z0* (Maintenance due).
 - ST220: Set "PA1 function" to "Maintenance due".
- Connecting a building control centre, see chapter 12.1.2 "Fault", p. 35.

12.1.10 Holding magnet GF / SF

For more detailed information on using a holding magnet see chapter "18 Powerturn F and Powerturn F/R on fire protection doors" on page 55.

12.1.11 WC timeout

For more detailed information about connecting a lamp or a signal to signal when the 30 min. timer has expired for the WC function, see chapter 15 "WC control", p. 45.

12.2 Configurable output PA2

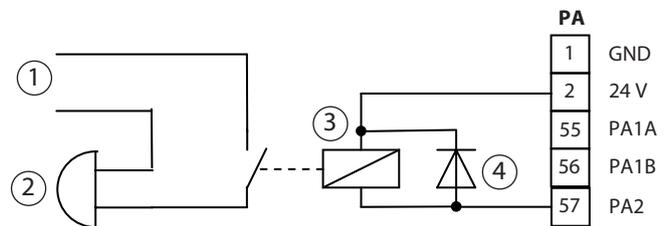
PA2 is a transistor output, switching voltage/current max. 24 V DC / 0.5 A.

12.2.1 Gong

The output is selected, if KA or SIS (for a "SIS and KA" setting) is activated.

- Set the parameters with:
 - DPS: Set **R2** to **01** (Gong).
 - ST220: Set "PA2 function" to "Gong".

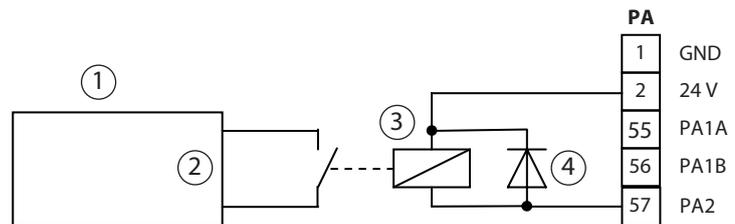
- 1 On-site power supply
- 2 Door gong
- 3 24 V relay
- 4 Free-wheeling diode



12.2.2 Fault

- The fault function is used for fault messages, e.g. to an on-site building control centre.
- Set the parameters with:
 - DPS: Set **R2** to **02** (Fault normally open contact) or to **03** (Fault normally closed contact).
 - ST220: Set "PA2 function" to "Fault normally open contact" or "Fault normally closed contact".
- The output switches to GND or locks as soon as the control detects a system fault. At the same time, the corresponding fault number is displayed on the DPS.
- ▶ A relay for galvanic isolation must be installed for forwarding the fault message (e.g. to a building management system).

- 1 Building control centre (on-site)
- 2 Signal input
- 3 24 V relay
- 4 Free-wheeling diode



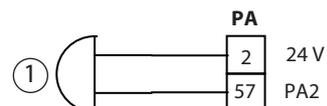
12.2.3 Fault indication for MPS

- The function is used to switch the fault LED at the MPS. The contact closes if the control unit determines a fault, see chapter 30 "Fault messages", p. 107.
- For connection see chapter 16.1 "Programme switch", p. 47.
- Set the parameters with:
 - With DPS: Set **R2** to **04** (MPS fault).
 - With ST220: Set "PA2 function" to "MPS fault".

12.2.4 Warning signal

- The function is used to cyclically switch an on-site activator on/off when the door is opened or closed.
- Set the parameters with:
 - DPS: Set **R2** to **05** (warning signal).
 - ST220: Set "PA2 function" to "Warning signal".

- 1 24 V DC activator supplied on the drive side



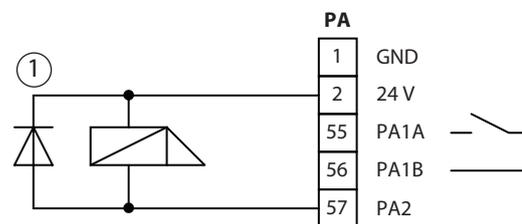
12.2.5 Electric strike

- ⚠ The electric strike function is not permitted if the drive is used for the fire protection area (Powerturn F, F/R, F-IS).
- ⊠ Only inductive DC electric strikes (without integrated electronics) may be connected to PA2. Electric strikes with integrated electronics must be connected to the configurable output PA1, see chapter 12.1.5 "Electric strike", p. 35.

- The function is used to actuate an additional fail-secure or fail-safe electric strike, in addition to the electric strike connection (see chapter 13 "Electric strike/motor lock", p. 41. The electric strike connection must be configured otherwise the function will not work at the PA.
- The contact closes or opens as soon as the door drive is actuated.
- Set the parameters with
 - DPS: Set $\overline{R2}$ to $\overline{D5}$ (Electric strike).
Set $\overline{L0}$ to the electric strike type connected, see chapter 29.6 "DPS service menu and service buttons S1/S2 with LEDs", p. 97.
 - ST220: Set "PA2 function" to "Electric strike".
Set "Electric strike type" to the electric strike type connected, see chapter 29.3 "Service menu ST220", p. 77.

Alternative parameter setting, see chapter 13 "Electric strike/motor lock", p. 41.

1 Free-wheeling diode 1N4007



Bolt message (RM)

See chapter 13 "Electric strike/motor lock", p. 41. "Electric strike/motor lock", "Bolt message".

12.2.6 Door status message

- The function is used to signal the door status, e.g. to an on-site building control centre.
- Door modes:

08 Closed and locked	13 Night mode
09 Closed	14 Exit only
10 Not closed	15 Automatic
11 Open	16 Hold open
12 Off	20 Maintenance due
- Set the parameters with:
 - DPS: Set $\overline{R2}$ to the desired message function.
 - ST220: Set "PA2 function" to the desired message function.
- Connection to a building control centre, see chapter 12.2.2 "Fault", p. 38.

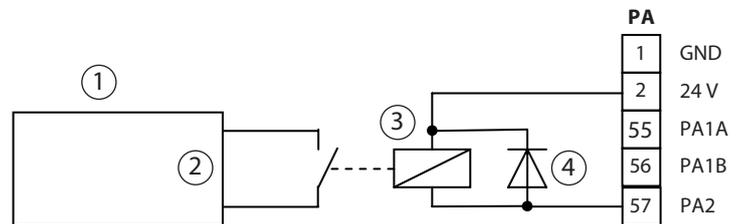
12.2.7 Day/night mode changeover

- The function is used to signal the day mode of operation to an on-site building control centre. The output switches to GND, if the mode of operation LS, AU 1-leaf, DO, or AU 2-leaf is set.
- Connect a 24 V DC relay as electrical isolation.
- Set the parameters with:
 - DPS: Set $\overline{R2}$ to $\overline{I8}$ (mode of operation message "Day/night mode").
 - ST220: Set "PA2 function" to "Day/night mode changeover".
- Connection to a building control centre, see chapter 12.2.2 "Fault", p. 38.

12.2.8 Maintenance due

- The function is used to signal that maintenance is due for the door drive to an on-site building control centre.
- Set the parameters with:
 - DPS: Set $\overline{R2}$ to $\overline{Z0}$ ("Maintenance due" message).
 - ST220: Set "PA2 function" to "Maintenance due".
- Connection to a building control centre, see chapter 12.2.2 "Fault", p. 38.

- 1 Building control centre (on-site)
- 2 Signal input
- 3 24 V relay
- 4 Free-wheeling diode



12.2.9 Holding magnet GF / SF

For more detailed information on using a holding magnet see chapter "18 Powerturn F and Powerturn F/R on fire protection doors" on page 55.

12.2.10 WC timeout

To connect a lamp or a signal to signal when the 30 min. timer has expired for the WC function.

13 Electric strike/motor lock



- ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.



When the door drive is used for the fire protection area (Powerturn F, F/R), an electric strike may only be connected to the terminal TOE. The outputs PA1, PA2 are not permitted for this.

- ▶ Connect the electric strike of the active leaf to the active leaf control and the electric strike of the passive leaf to the passive leaf control.
 - Potential-free relay contact, switching voltage/current max. 24 V AC/DC, 1 A.
 - Use an electric strike with a duty rating of ED 100.
 - For operation of the display programme switch DPS, see chapter 29.4 "Display programme switch DPS", p. 95.
 - For operation of the service terminal ST220, see chapter 29.1 "Service terminal ST220", p. 76.

The state of the drive to which the ST220 is connected is displayed. With 2-leaf systems, the status of the active leaf is displayed.

- ▶ Press the \leftarrow key.
- ▶ Select "Active leaf para" or "Passive leaf para" using the \blacktriangle or \blacktriangledown key and press the \leftarrow key.

For further settings see the descriptions below:

- Set the parameter electric strike type with:
 - DPS: Set $\text{E} \sigma$ to the desired electric strike type, see chapter 29.6 "DPS service menu and service buttons S1/S2 with LEDs", p. 97.
 - ST220: Set the "Door parameters", "Electric strike type" to the desired type, see chapter 29.3 "Service menu ST220", p. 77.

▫ Holding magnet MA 500 with counterplate for the magnetic locking of emergency exits.

▫ Motor lock with panic function GEZE IQ Lock EL for 1-leaf doors.

The GEZE IQ Lock EL is a self-locking anti-panic motor lock with external control. Note the wiring diagram for motor lock IQ Lock EL.

IQ Lock SecuLogic set

(Motor lock PZ-perforated, complete, incl. face plate and strike plate, motor lock control, connection cable for control, reed contact as well as open drip loop)

Designation	Centres [mm]	Backset [mm]
IQ Lock EL 9235	92	35
IQ Lock EL 9240	92	40
IQ Lock EL 9245	92	45
IQ Lock EL 7255	72	55
IQ Lock EL 7265	72	65
IQ Lock EL 7280	72	80
IQ Lock EL 7210	72	100

- When using a motor lock without bolt message, the parameters "Opening delay day" (time in which the motor lock can unlock before the drive opens the door; only applies in the operating modes automatic and exit only) or "Opening delay night" (time in which the motor lock can unlock before the drive opens the door; only applies in night mode) must be set to give the motor lock time to unlock.

- Set parameter dL for opening delay day or dN for opening delay night with:

- DPS: Set dL to the required time (0 s ... 9 s).
- ST220: Set "Door parameters", "Opening delay day" or "Opening delay night" to the required time.

With parameters set for electric strike type "motor lock", the signal is activated up to the complete opening position and over the hold-open time. After the hold-open time has expired and closing movement of approx. 10°, the electric strike signal is deactivated.

With parameters set for electric strike type "fail-secure electric strike", the signal is activated up to approx. 20° opening or 8s plus the optional opening delay.

13.1 24 V DC electric strike supplied on drive side

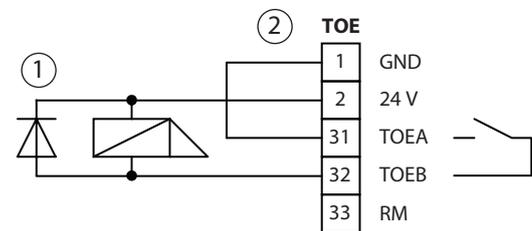
GEZE electric strikes for standard applications, doors with access control

GEZE electric strike type	Mat. No.	Current consumption	Voltage	Functions
A5000--B	144590	200 mA (with 12 V) 100 mA (with 24 V)	Continuous operation: 12 or 24 V DC $\pm 15\%$ Momentary operation: 12–48 V AC/DC	Fail-secure electric strike, standard applications, doors with access control
A5000-FB with lock latch guide	144632	200 mA (with 12 V) 100 mA (with 24 V)	Continuous operation: 12 or 24 V DC $\pm 15\%$ Momentary operation: 12–48 V AC/DC	Fail-secure electric strike, standard applications, doors with access control
A5300--B	144631	200 mA (with 12 V) 100 mA (with 24 V)	Continuous operation: 12 or 24 V DC $\pm 15\%$	Fail-safe electric strike, standard applications
A5000--E	145182	200 mA (with 8–11 V) 50 mA (with 12–24 V)	Continuous operation: 8–28 V DC Momentary operation: 8–28 V AC/DC	Fail-secure electric strike, standard applications, opening under side-load with DC voltage
A5001--B with switch contact	145183	200 mA (with 12 V) 100 mA (with 24 V)	Continuous operation: 12 or 24 V DC $\pm 15\%$ Momentary operation: 12–48 V AC/DC	Fail-secure electric strike, standard applications, doors with access control

GEZE electric strike for fire protection doors

GEZE electric strike type	Mat. No.	Current consumption	Voltage	Functions
FT500--B	144634	200 mA (with 12 V) 100 mA (with 24 V)	Continuous operation: 12 or 24 V DC $\pm 15\%$ Momentary operation: 12–48 V AC/DC	Fail-secure electric strike, fire protection doors
FT501--E with switch contact	144647	200 mA (with 8–11 V) 50 mA (with 12–24 V)	Continuous operation: 8–28 V DC Momentary operation: 8–28 V AC/DC	Fail-secure electric strike, fire protection doors, opening under side-load with DC voltage

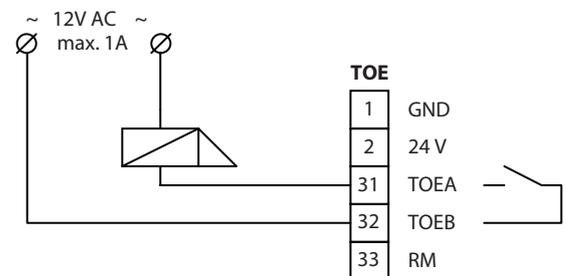
- Max. current consumption of 1000 mA, but pay attention to the total power consumption of all the components, especially for fail-safe electric strikes.
- Fail-secure electric strike for Powerturn:
 - IQ eStrike A5000--E
- Fail-safe electric strike for Powerturn:
 - IQ eStrike A5300--B
- ▶ Attach a free-wheeling diode 1N4007 (1) (a free-wheeling diode is not required with GEZE electric strike).



- 1 Free-wheeling diode
- 2 Wire jumper

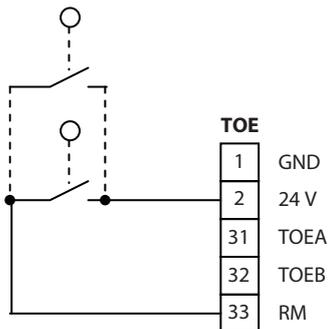
13.2 On-site-powered 12 V AC electric strike

Contact load output PA1 at 12 V AC: max. 1 A

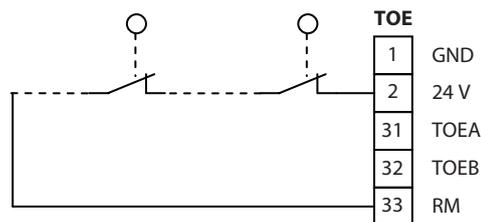


13.3 Bolt message

- Input RM blocks activation of the drive and prevents the drive opening against a manually locked door, for example. If the Input RM becomes active while the door is open, the door reverses and remains open.
- If a further electric strike is connected with
 - Normally open contact: Circuit the contacts in parallel.
 - Normally closed contact: Switch the contacts in series.
- Set the parameters with:
 - DPS: Set *rr* to *01* (normally open contact) or *02* (normally closed contact).
 - ST220: Set the "Signals", "Input signals", "Bolt contact type", "Bolt contact type" to "normally open contact" or "normally closed contact".
- When the bolt feedback signal is pending, the drive remains in the set mode of operation but the DPS switches its own state to "night mode".



Normally open contact



Normally closed contact

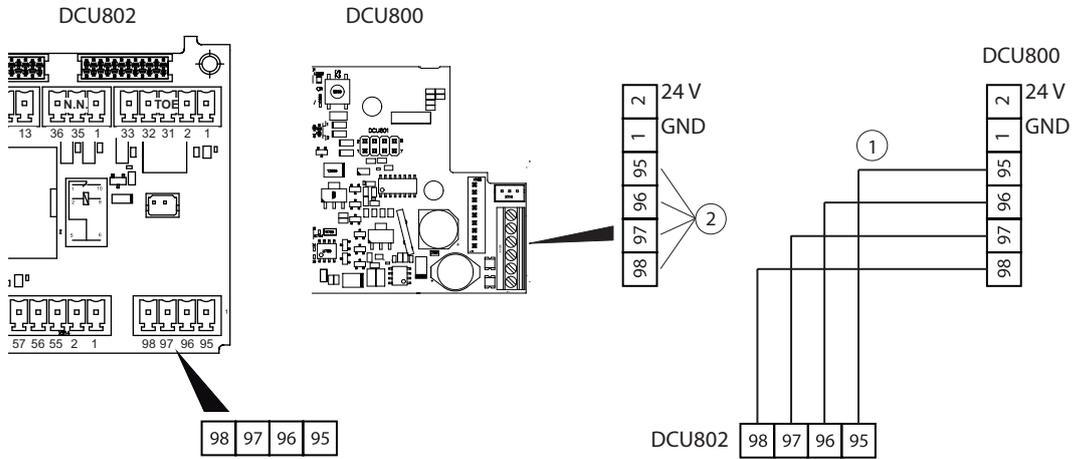
13.4 Activation delay for lock switch contact

If a lock switch contact is used, the drive opens the door after valid activation only after 2.5 s if a change from "locked" to "not locked" has taken place. This applies for all settings of the parameters "electric strike type" apart from the "motor lock" setting.

14 Free line connections

Up to 4 signals can be transmitted via the flat ribbon cable between connection board DCU802 and control circuit board DCU800 using the free line connections. For example, this is prudent, if devices are installed in the attachment or intermediate cover and need to be connected to the connection board.

- max. signal voltage: 30 V AC/DC
- max. signal current: 0.3 A

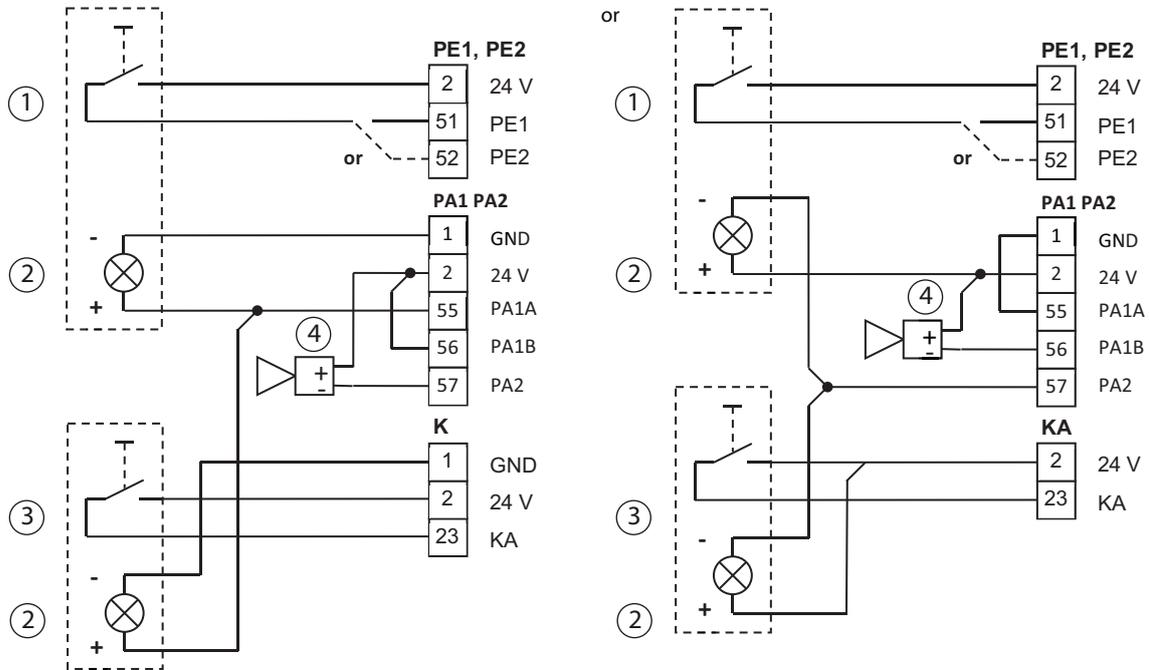


- 1 Internal flat ribbon cable
- 2 FREE

15 WC control

- i** ▶ Note chapter 1.3 “Reference documents”, p. 7.
- ▶ Note chapter 31.2 “Accessories”, p. 112.

- i** Only operates with fail-safe electric strike. For connection and parameter setting, see chapter 13 “Electric strike/ motor lock”, p. 41.
- Only operates with programme switch DPS, not with MPS or MPS-D.



- 1 Inside push button (switching unit with illuminated display)
- 2 Illuminated OCCUPIED sign
- 3 Outside push button (switching unit with illuminated display)
- 4 Signal horn SLH220 (optional)

Function

The control recognises the operating function “WC control” based on the parameter set for the configurable input (PE1, PE2). If the WC is not occupied, the door is in automatic mode and is in the closing position.

The OCCUPIED signs are off.

When the “outside push button” is pressed, the WC door is opened. Once someone has entered the cubicle, the WC door is switched to exit only mode by pressing the “Internal push button” and the external push button is blocked. Alongside locking via the “inside push button”, locking is also possible via the push button “exit only LS” on the display programme switch DPS (from outside). The OCCUPIED signs light up. The WC door is locked by the fail-safe electric strike ^{*)}. Pressing the “inside push button” again switches the mode of operation back to automatic. The OCCUPIED signs go off. The door opens and the “outside push button” is activated again. If the closed and locked door is opened manually from the inside or if a contact sensor KB is triggered, the mode of operation also switches back to automatic. The door can then be reopened by pressing KA.

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

The operating function “WC control” is cancelled in the following cases:

- If the door is closed and locked and manual opening is detected.
- If the door is opened from the outside using the mechanical contact (KB) (e.g. in an emergency).

In both cases the door can then be triggered using the “Push button outside”.

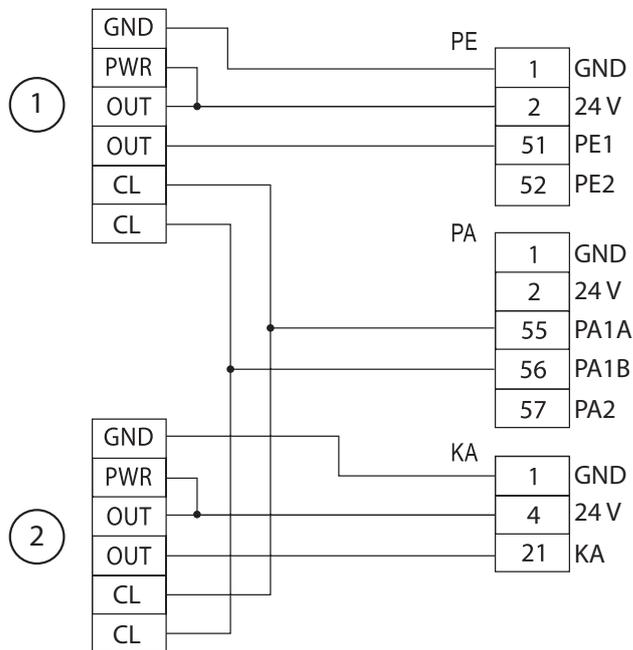
In the event of a power failure, the fail-safe electric strike is released and the door can be opened manually.

^{*)} Locking mechanism also possible with panic motor lock (optional).

15.1 Non-contact sensor GC 307+ WC



- ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.



- 1 Push button inside
- 2 Push button outside



For further information about the alternative cable variant "WC control with adjustable unlocking time" see the installation instructions for GC 307+.

Recommended setting at the GC 307+ WC via remote control

- ▶ Set all DIP switches "colour LED" to OFF.
 - Colour "no detection" → green
 - Colour "detection" → blue
 - Colour "occupied/external control" → red

15.2 Illuminated OCCUPIED sign

The illuminated OCCUPIED sign (PA1 or PA2) is activated when switching to the exit only mode of operation.

Parameter setting:

- DPS:
 - Set $E1$ or $E2$ to $Z1$ (WC control), depending on the input used.
 - Set $R1$ or $R2$ to 14 (illuminated OCCUPIED sign).
 - Set $R1$ or $R2$ to $Z4$ (alarm WC control).
 - Set or to the desired time (0–60 s).
- ST220:
 - Set "PE1" or "PE2" to "WC control".
 - Set "PA1" or "PA2", "Function" to "Exit only".
 - Set "PA1" or "PA2", "Function" to "Alarm WC control".
 - Set "Hold-open times, 1-leaf opening" to the desired time (0–60 s).

Emergency shut-off switch

See chapter 6.1 "Key switch", p. 21.

16 Mode of operation



- ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.



From software version V2.1, the following applies for the mode of operation OFF:

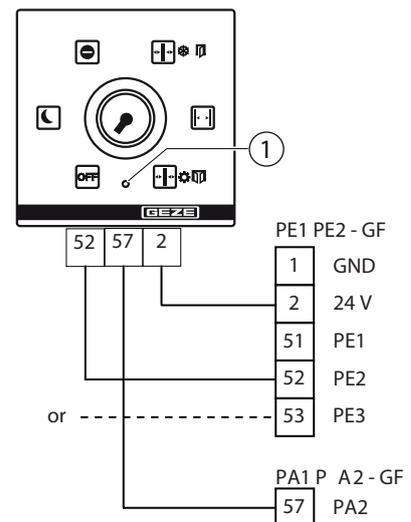
- Powerturn: Door leaf can be moved freely.
- Powerturn F, F/R: Drive in passive operation, spring closes the door.

- For operation of the display programme switch DPS, see chapter 29.4 "Display programme switch DPS", p. 95.
 - For operation of the service terminal ST220, see chapter 29.1 "Service terminal ST220", p. 76.
 - Setting and operation using
 - Service button
 - Mode of operation key
- The state of the drive to which the ST220 is connected is displayed. With 2-leaf systems, the status of the active leaf is displayed.
- ▶ Press the \leftarrow key.
 - ▶ Select "Active leaf para" or "Passive leaf para" using the \blacktriangle or \blacktriangledown key and press the \leftarrow key.
- For further settings see the descriptions below.

16.1 Programme switch

Mechanical programme switch (MPS)

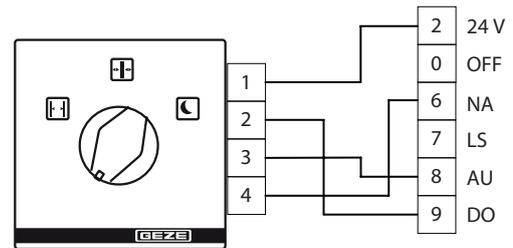
- Connection to PE2 or PE3
- MPS, AS500
MPS-ST, with key, AS500
- Operating modes
OFF, NA, LS, AU 1-leaf, DO, AU 2-leaf
- Follow the installation instructions
- For 2-leaf systems, the MPS is connected to the active leaf.
- If the MPS is used, the mode cannot be changed with DPS or via the NA, LS, AU and DO inputs.
- Set the parameters of the control to which the MPS is connected, with:
 - DPS: Set $E2$ or $E3$ to $D1$ (MPS).
Set $R2$ or $R1$ to $D4$ (fault message for MPS).
 - ST220: Set "Signals", "Input signals", "PE2", "PE2 function" or "PE3", "PE3 function" to "MPS" and "Signals", "Output signals", "PA2", "PA2 function" to "MPS fault" or "PA1", "PA1 function" to "MPS fault".



- 1 The LED at the MPS lights up in case of a fault MPS flashes when maintenance is due

Mechanical programme switch (MPS-D)

- MPS-D, AS500
- MPS-D-ST, with key, AS500
- The MPS-D is connected to the active leaf on 2-leaf systems.
- Set the parameter Contact type (if changed), with:
 - DPS: Setting not possible.
 - ST220: Set the "Signals", "Input signals", "AU", "Contact type" to "normally open contact" and "DO", "Contact type" to "normally open contact" (factory settings). Set "NA", "Contact type" to "NC".

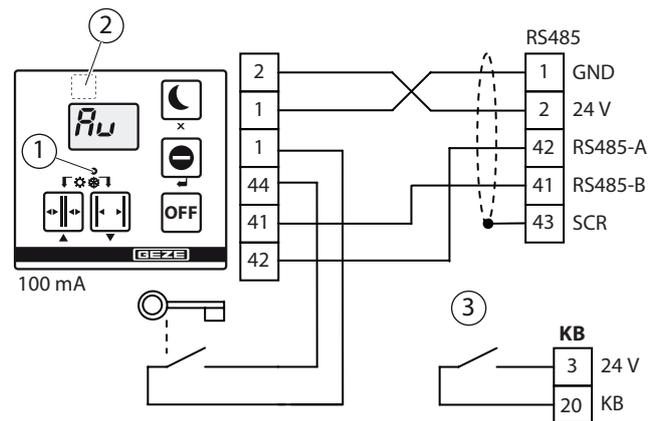


Display programme switch (DPS) with OFF

- AS500, DPS with OFF, flush-mounted, alpine white
- Modes of operation: OFF, NA, LS, AU, DO, 1-leaf/2-leaf opening



▶ Follow the installation instructions.



- DPS cannot be connected if the PE2 or PE3 function is set to "MPS" (only display possible).
- ▶ Connect DPS to the active leaf.
- Changing the operating mode with the DPS is only possible if 24 V is not applied to NA, LS, AU, DO or to PE2 or PE3, if PE2 or PE3 is configured to OFF, 2-leaf opening or 1-leaf opening. After reconnection to the mains, the drive is in the previously set mode of operation.
- It is possible to change the mode of operation if the key switch is active or with jumper 1-44.
- Switching over between 1-leaf and 2-leaf operation:
 - ▶ Press the ▲ ▼ keys simultaneously.

- 1 Display 1-leaf/2-leaf operation (LED lights up with 1-leaf operation)
- 2 Hidden service push button
- 3 Additional contact in the key switch for activation of KB



Operation at the DPS is not possible during the self-test, e.g. after changing the operating mode.

The control can be configured using DPS.

Accessing the service menu:

- ▶ Press the concealed service key and ← simultaneously.

Blocking or releasing DPS operation

- Blocking operation by key operated button

Operation of the DPS can be blocked/released by connecting a key switch to prevent the mode of operation being changed by unauthorised persons.

Operation is possible when the key switch is actuated, or:

- ▶ Actuate the key switch briefly to release operation.
 - Operation is permanently released.
- ▶ To block operation, actuate the key switch briefly again.
- ▶ Operation is blocked.

- With the DPS, the operation block is signalled by the display "- -" when any key is pressed.

- Blocking operation by assigning a password

Operation of the DPS can be protected by a password in the service menu to prevent the mode of operation being changed by unauthorised people.

The password can only be set and changed using the service menu on service terminal ST220.

The password for operating the DPS has 2 digits (0...9).

Factory setting: 00 = released

- Changing the mode of operation with password protection set

! The mode of operation can also be released by activating the key switch rather than by entering a password.

The number of times the key is pressed corresponds to the digit to be entered.

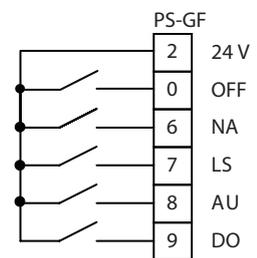
- ▶ Enter the first digit using key ▲.
- ▶ Enter the second digit using key ▼.

Example: The password is 37.

- ▶ Press the ▲ key 3 times.
 - ▶ Press the ▼ key 7 times.
 - ▶ Confirm password with key ↵.
- Permanent release of programme switch operation
 - ▶ For permanent release, attach a jumper between terminals 1-44 of the DPS. – and –
 - ▶ Set the value "00" as the password in the service menu (factory setting).

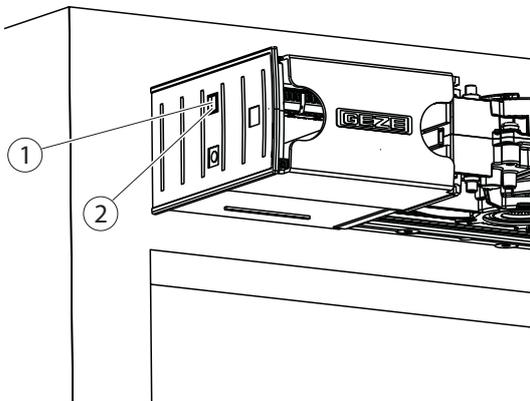
16.2 Set the mode of operation using push buttons or switches

- It is possible to set the mode of operation using push buttons or switches (e.g. timer).
- The push button or switch is connected to the control of the active leaf.
- The control switches to the desired mode if 24 V is applied to the corresponding input and remains in this mode of operation. A pulse signal is sufficient.
- Operation at the DPS is only possible if no signal is queued at the OFF, NA, LS, AU and DO inputs.
- Input NA takes precedence over inputs LS, AU and DO. If 24 V is applied at input NA the drive switches to NA mode, even if 24 V is applied to one of the other PS inputs.
- Set the parameter Contact type (if changed), with
 - DPS: Setting not possible
 - ST220: Set the "Signals", "Input signals", "NA", "Contact type" to "NO". The same applies for the contact type for "LS", "AU", "OFF" and "DO" (factory settings)



16.3 Change in mode of operation

16.3.1 Changing the mode of operation using the operating modes push button/operating modes display



Changing the mode of operation (with 1-leaf-doors or active leaf)

► Press the operating modes push button (1) briefly.

The operating modes display immediately switches one mode of operation further. The drive itself does not change the mode of operation to the new mode of operation until 1 s after the last key has been pressed.

Operating modes sequence:

... → OFF → Night → Exit only → Automatic → Hold open → OFF → Night mode → ...

Thanks to the 1 s delay it is possible to change the mode of operation from AU (automatic) through DO (hold open) to NA (night mode) without the door opening in the DO (hold open) setting.

- When ready to operate, the operating modes display LED (2) lights up in the colour of the current mode of operation.
- The operating modes display LED (2) is also used to indicate faults. For more detailed information see chapter 30 "Fault messages", p. 107.
- In the OFF mode of operation, there is no fault display on the operating modes display LED.
- If you do not wish to switch modes using the operating modes push button (1), this can be blocked with the service terminal using the "Mode of operation key" parameter.
- If the setting is changed from enabled to disabled or vice versa, the operating modes display LED flashes yellow for 3 s – the setting has been applied.
- If a deactivated operating modes push button (1) is actuated again, the operating modes display LED (2) flashes for 3 s in red – operation is not accepted.



A connected external programme switch MPS takes priority.

Changing the mode of operation (with passive leaf)

The drive on the passive leaf is switched on and off using the operating modes push button.

When the drive is switched on, the modes of operation display LED (2) lights up in the colour of the mode of operation (see below).

If the drive is switched off, the operating modes display LED (2) does not light up.

A disabled passive leaf behaves in a similar manner to the NA mode of operation, in the case of manual entry.

Mode of operation display

Mode of operation	Colour of the operating modes display LED (2)
OFF (off)	–
NA (night mode)	red
LS (exit only)	white
AU (automatic)	green
DO (hold open)	blue

16.3.2 Changing the operating mode using the service LEDs

The service LEDs are used

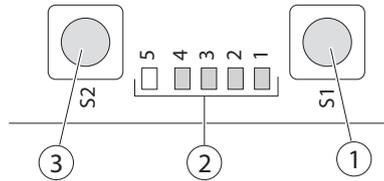
- to indicate system signals,
- to indicate and change drive parameters,
- to start the production test.

During normal operation the LEDs indicate the current mode of operation.

The mode of operation can be changed using keys S1 and S2.

S1 = previous mode of operation S2 = next mode of operation

- 1 Service key S1
- 2 Service LEDs
- 3 Service key S2



Mode of operation	LED				
	5 *	4	3	2	1
OFF	○	○	○	○	●
Night mode	○	○	○	●	○
Exit only	○	○	●	○	○
Automatic	○	●	○	○	○
Hold open	○	○	○	●	●

- LED off
- LED on

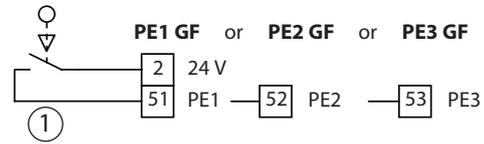
17 2-leaf drives



- ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

17.1 Powerturn IS/TS: Active leaf automated, passive leaf with door closer

- Reed switch
- The closing position of the passive leaf is monitored with a reed switch. The reed switch contact is closed if the passive leaf is closed. The active leaf only closes once the passive leaf is closed.
- ▶ Set active leaf to 1-leaf.
- ▶ Attach the reed switch near the main closing edge of the passive leaf. The reed switch can be connected to PE1, PE2 or PE3. Parameter E1, E2 or E3 must be set to 06 (closing position SF) when connecting to PE1, PE2, PE3.
- ▶ Set parameter EF ("Number of leaves) to 01 ("1-leaf drive").
- If the mode of operation is changed to DO, the holding magnet is powered and the passive leaf can be kept open, see chapter 18.6 "Hold-open system Powerturn F-IS/TS, Powerturn F/R-IS/TS - active leaf automated, passive leaf with door closer and holding magnet", p. 58.

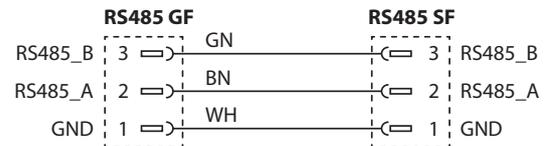


1 Reed switch (normally open contact NO)

Illustration:
Passive leaf not closed, contact open

17.2 Two automated door leaves

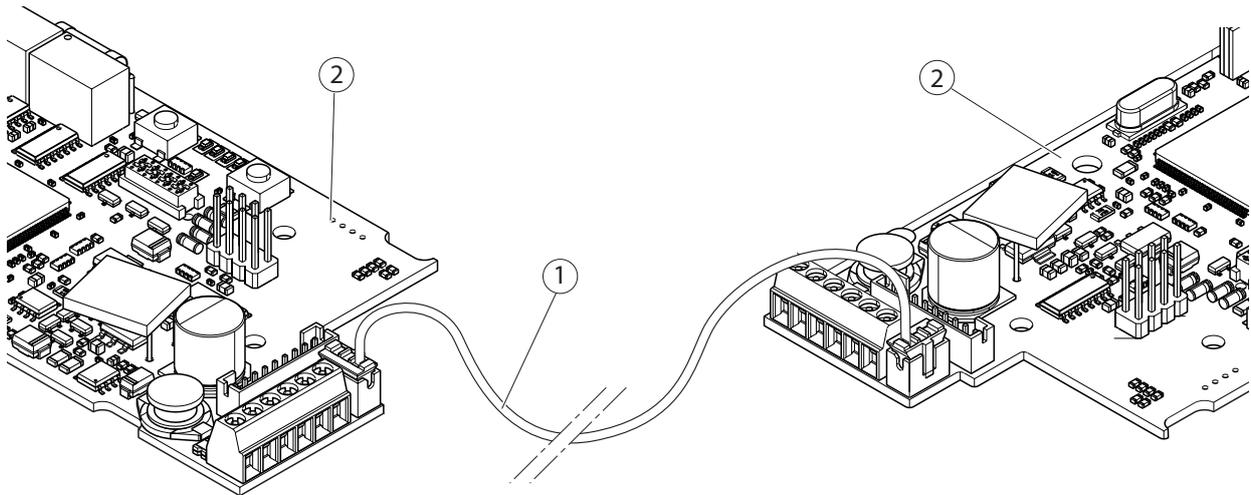
- For parameter settings, see chapter 22 "Commissioning and service", p. 66.
- ▶ Set up RS485 connection between the two drives using system cable, see chapter 17.3 "Connection via system cable RS485", p. 53.
- ▶ Set up connection to the 230 V network, see chapter 17.4 "Mains connection", p. 54.



17.3 Connection via system cable RS485

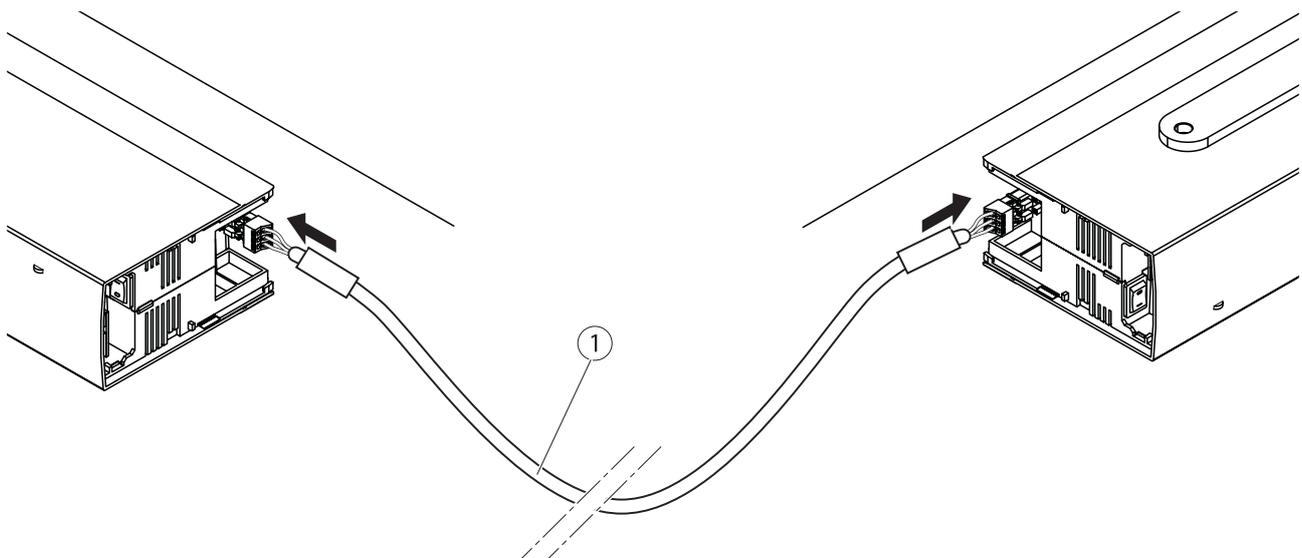
Active leaf

Passive leaf



- 1 System cable RS485, 3-wire
- 2 Control circuit board DCU800

17.4 Mains connection



1 Feeder H03VV 3G 0.75 mm²

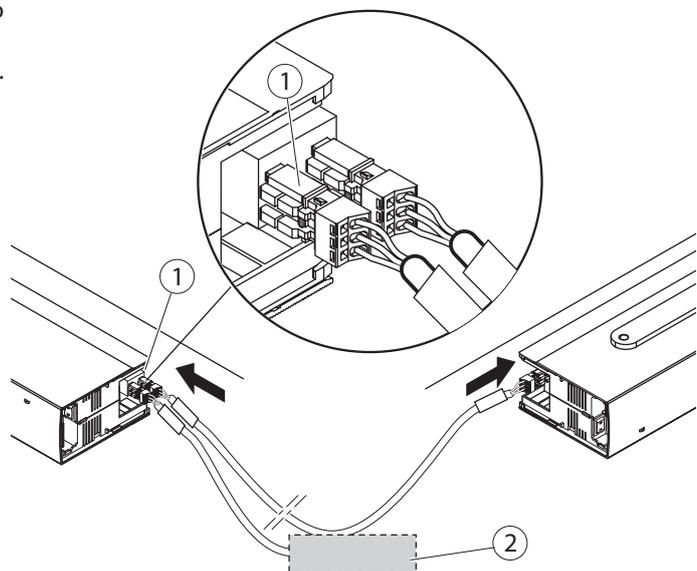


► For mains plugs install the rubber sleeves, see chapter 19.1 "Mounting plate with integrated power supply circuit", p. 62.

The mains plugs have spring-type terminals which means connection without wire end ferrules is permitted.

230 V distributor (optional)

The 230 V T-distributor (1) makes it possible to set up a junction in the 230 V AC connecting cable on 2-leaf doors with 2 Powerturn drives. A further additional device (2) can be connected to this and supplied with 230 V AC. This is useful for additional devices which are installed under the intermediate cover.



18 Powerturn F and Powerturn F/R on fire protection doors



- i** ▶ Note chapter 1.3 "Reference documents", p. 7.
- i** ▶ Note chapter 31.2 "Accessories", p. 112.

! If the door drive is used on fire protection doors, do not connect an on-site central reset switch. A central reset switch is not permitted.

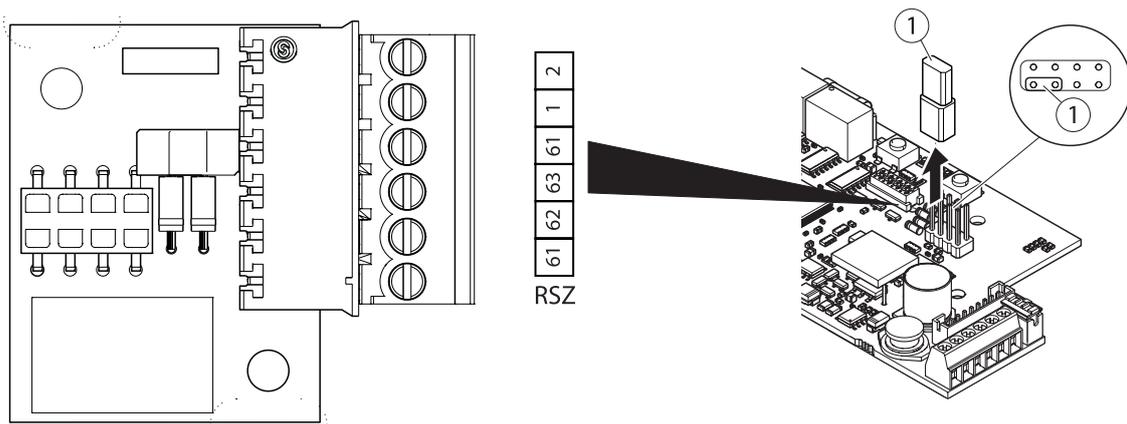
- In case of a fire alarm or a power failure, the electric strike (at terminal 31/32 of the DCU), valve and motor gear unit are disconnected from the control. The door closes through spring load (passive operation).
- In 2-leaf doors both leaves close.
- The control places a load of approx. 10 mA on the smoke switch control unit for a 1-leaf drive and approx. 20 mA for a 2-leaf drive.
- The closing speed in the event of a fire alarm or power failure must be set depending on the leaf weight and spring load. More detailed information about braking force in chapter 23 "De-energised operation", p. 71.
- When a door is closed by spring load, the latching action is triggered by a latching action switch in the gear.

! ▶ Do not start up the drive with unplugged latching action switch.

- ▶ Before commissioning and during service work with the drive de-energised:
 - Check the setting of the latching action switch.
 - Check the function of the brake power circuit by manually opening the door. Set the braking force parameters according to the installation instructions.
 - In the opening direction, only the spring acts as a brake.
 - From the open position, the door must close at slow speed due to the spring load.
- ▶ After a fire alarm or restoration of power, reset the door drive on site, see chapter 18.3 "Triggering and reset of holding open", p. 56.

18.1 F-board DCU 801

For the smoke switch control unit or lintel-mounted smoke switch, the F-board DCU 801 is built into the door drives Powerturn F and Powerturn F/R.



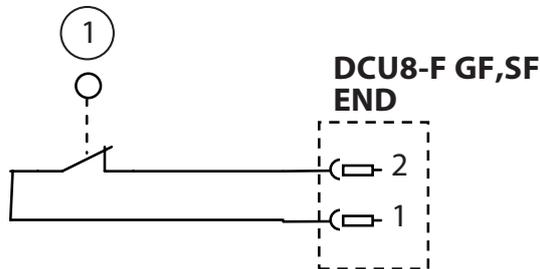
1 Jumper

- !** ▶ A jumper must be inserted for controls without an F-board.
 ▶ Only insert jumper when switched off.

In normal operation, smoke switch control unit or lintel-mounted smoke switch deliver a 24V voltage to the hold-open output. The 24V voltage supplies the F-board DCU801 and the door drive can be operated in normal operation as long as this voltage is applied.
 In the event of a fire alarm or power failure, the smoke switch control unit or lintel-mounted smoke switch switch this 24V voltage at the F-board DCU801 off. The door closes through spring load (passive operation).

18.2 Setting latching action switch

The latching action, for overcoming the lock latch, must not start until 10° before the master key system at the earliest. When a door is closed by spring load, the latching action is triggered by a latching action switch in the gear. The latching action switch is connected to the printed circuit board DCU800. The contact of the mechanically confirmed switch (when door closed) is open. For further information about setting the limit switch, see the installation instructions for Powerturn (“1.3 Reference documents” on page 7).



1 Latching action switch

18.3 Triggering and reset of holding open

Triggering of the hold-open system by a fire alarm, power failure, manual trigger switch or by manual closing of the door from the open position remains saved until the system is switched to normal operation by a “Reset fire alarm”. Always only reset a triggered hold-open system on site, and use one of the following possibilities to do this:

- Switch mode of operation over at the modes of operation switch
- Switch mode of operation over at the DPS (DPS must be installed in the visible area of the door)
- Manual opening of the door by more than 80° or the taught opening width.

“Reset by switching mode of operation” is not possible remotely (terminal 6-9) and not by radio. The system must be switched to one of the modes of operation automatic (AU), exit only (LS) or hold open (DO). The following combinations can be set using the parameter “Trigger/reset man.” (ST220) or FP (DPS).

Parameters ST220/ DPS	Meaning/functionality				
	Manual trigger at the door leaf	Manual trigger switch necessary	Reset by manual opening	Reset by changing mode of operation	Reset via reset switch
Inactive/00	NO	YES	NO	NO	YES
Reset manual/01 (default)	NO	YES	YES	YES	NO
Trigger manual/02	YES	optional	NO	YES	NO
Trigger & reset man./03	YES	optional	YES	YES	NO

With 2-leaf doors the parameters for active and passive leaf must be identical in this function.

Reset by manual opening

The triggered hold-open system can be reset by manual opening of the door leaf.

Set the parameters with:

- DPS: FP to 01 (Reset manual) or 03 (Trigger & reset manual).
 - ST220: “Trigger/reset man.”, “Trigger & reset man.” or “Reset manual”.
- Check the reset function during commissioning and service work.

Reset with reset switch

Parameter setting makes it possible to use a separate reset switch like with older software versions (≤ V2.0).

Set the parameters with:

- DPS: FP to 00 (inactive)
- ST220: “Trigger/reset man.”, “Inactive”

For this, connect the smoke switch or the smoke switch control unit to terminal 62 of the DCU801 and not to terminal 63 as shown on the diagram. There must be a reset switch installed on the door drive.

Triggering with manual trigger switch

There must be a manual trigger switch installed if there are no parameters set for triggering via door leaf movement. Connect the manual trigger switch to the smoke switch control unit or the lintel-mounted smoke switch. For more detailed information see the installation instructions for FA GC 150.

Triggering by movement of the door leaf

The hold-open system can be triggered by manual closing of the opened door leaf. For this, move the door leaf manually with a closing torque of 40...120 Nm in closing direction.

Set parameters for "Manual triggering" of the hold-open system by closing the door with:

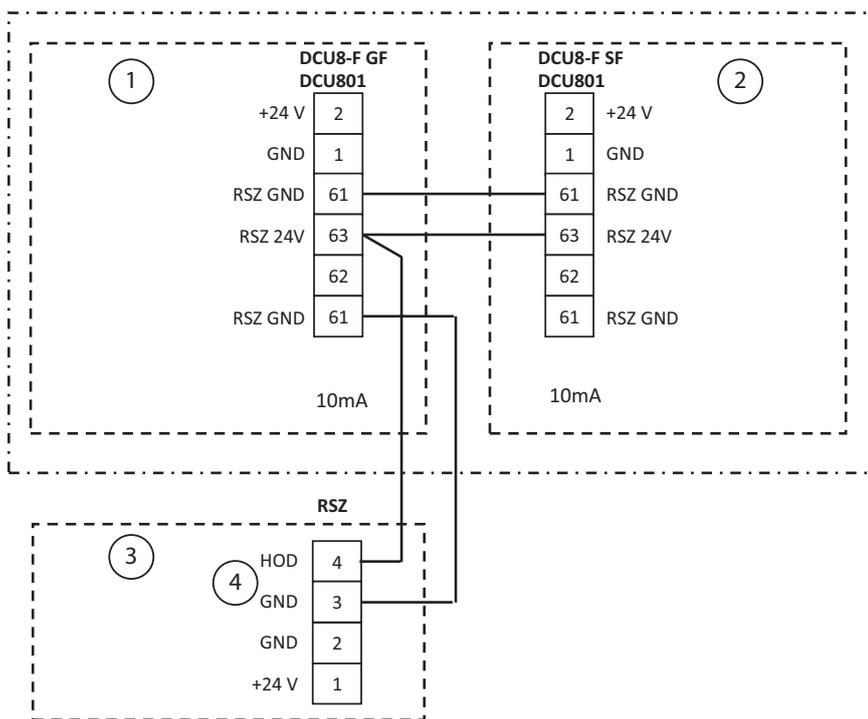
- DPS: FP to 02 (Trigger manual) or FP at 03 (Trigger & reset manual).
- ST220: "Trigger/reset man.", "Trigger manual" or "Trigger & reset man."
- ▶ Check triggering of the hold-open system during commissioning and service work.
- ▶ When the function retention force opening is used (DPS: 0F or ST220 "Retention force opening"), set the force so that the triggering torque is between 40...120 Nm.
- ▶ The "Stop" function via a configurable input (DPS: E1/E2/E3 or ST220 PE1/PE2/PE3 function) must not be used here. If this function is not used, a manual trigger switch is necessary.
- ▶ The manual hold-open time is limited to 10s by triggering through movement of the door leaf (DPS: HO or ST220 hold-open times - manual).

18.4 Hold-open system Powerturn F, Powerturn F-IS with smoke switch control unit



The smoke switch control unit has its own mains supply. If the manual triggering function is configured, both leaves close if one leaf has been triggered (active leaf or passive leaf).

Door drive Powerturn F and F-IS



- 1 Powerturn F active leaf
- 2 Powerturn F passive leaf, optional
- 3 Smoke switch control unit RSZ
- 4 Output for eternal hold-open function

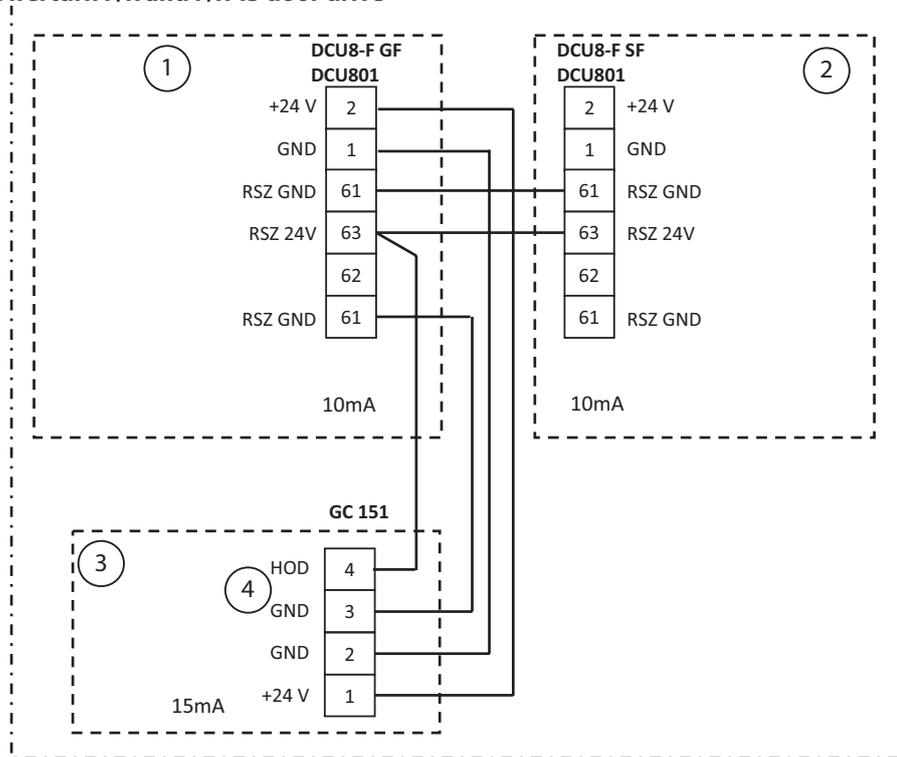
When manual triggering is used, the triggering torques must be measured at the active leaves. The must be between 40...120 Nm; if not, set the IS brake accordingly (see chapter "1.3 Reference documents" on page 7, installation instructions for IS mechanism).

18.5 Hold-open system Powerturn F/R, Powerturn F/R-IS with integrated lintel-mounted smoke switch



The lintel-mounted smoke switch can be integrated in the ad-on set or the intermediate cover kit. The smoke switch is supplied with 24V through the Powerturn control. If the manual triggering function is configured, both leaves close if one leaf has been triggered (active leaf or passive leaf).

Powerturn F/R and F/R-IS door drive



- 1 Powerturn F active leaf
- 2 Powerturn F passive leaf, optional
- 3 Integrated lintel-mounted smoke switch GC 151
- 4 Output for eternal hold-open function

When manual triggering is used, the triggering torques must be measured at the active leaves. The must be between 40...120 Nm; if not, set the IS brake accordingly (see chapter "1.3 Reference documents" on page 7, installation instructions for IS mechanism).

18.6 Hold-open system Powerturn F-IS/TS, Powerturn F/R-IS/TS - active leaf automated, passive leaf with door closer and holding magnet



The Powerturn F-IS/TS and Powerturn F/R-IS/TS hold-open systems are systems where the active leaf is automated with a Powerturn and the passive leaf has a mechanical door closer. In the hold open mode of operation, the passive leaf is held in the open position by a holding magnet. The closing position of the passive leaf is monitored with a reed-contact. For more detailed information about this, see chapter 17.1 "Powerturn IS/TS: Active leaf automated, passive leaf with door closer", p. 52. Safe closing is guaranteed by a mechanical closing sequence control.

Set the parameters with:

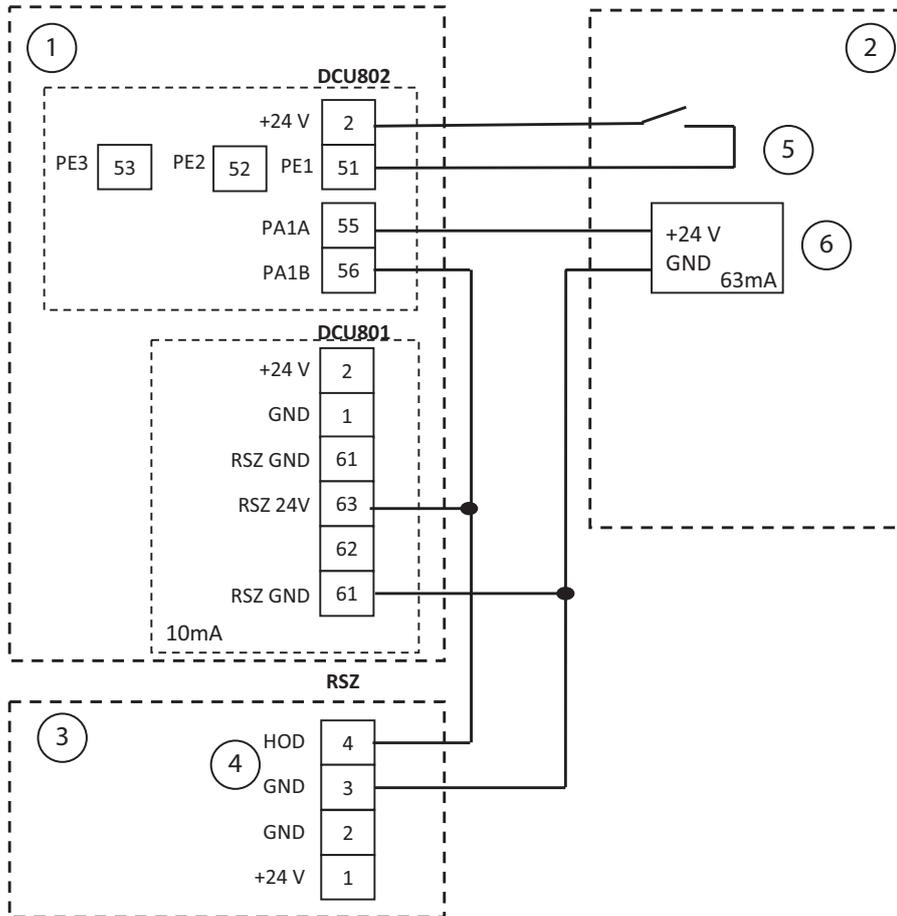
- DPS:
 - Set EF (3rd menu) to 01 (1-leaf drive), E1 or E2 or E3 (3rd menu) to 19 (closing position SF) and H1 (3rd menu) to 22 (holding magnet SF).
- ST220:
 - Set "Door parameters", "No. of leaves" to "1-leaf drive", "Signals", "Input signals", "PE1 function or PE2 function or PE3 function" to "Closing position SF" and "Output signals", "PA1 function" to "Holding magnet SF".

- ! ▶ Only use the potential-free output PA1.
- ▶ When a door closer is used, change the system to 1-leaf.

- i ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

18.6.1 Powerturn F-IS/TS with smoke switch control unit

Door drive Powerturn F



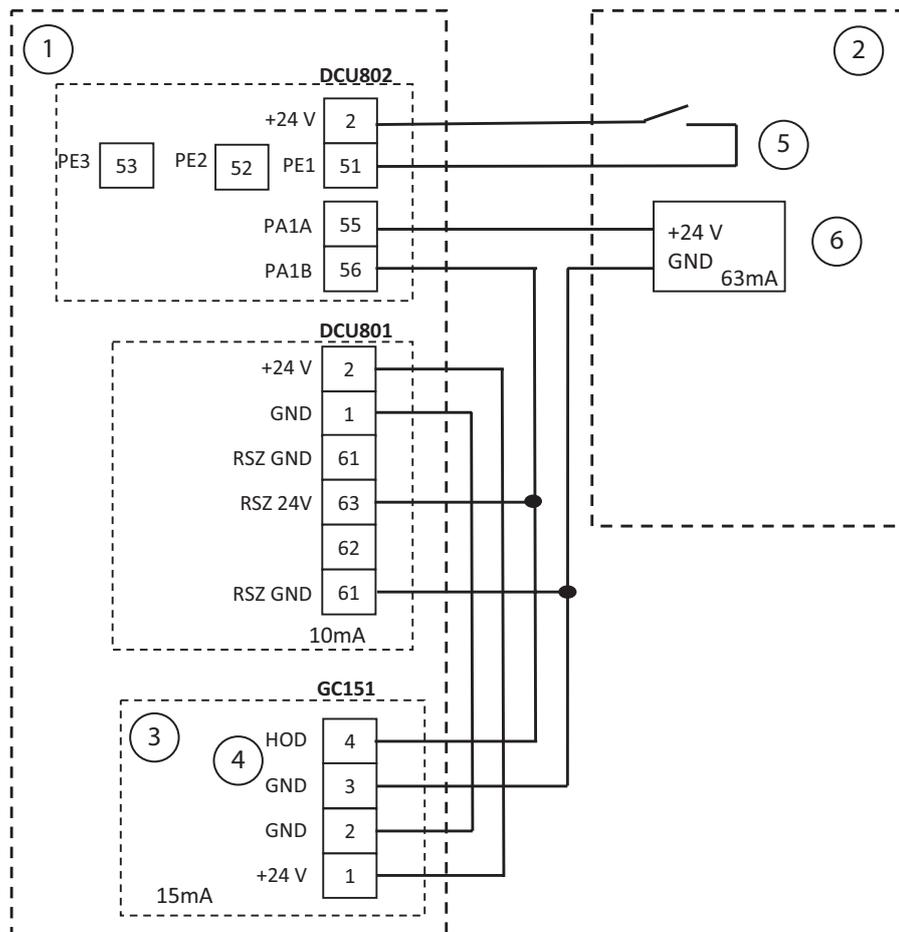
- 1 Powerturn F active leaf
- 2 Passive leaf with door closer
- 3 Smoke switch control unit RSZ
- 4 Output for eternal hold-open function
- 5 Reed switch for the passive leaf closing position
- 6 Holding magnet (accessory, see FA GC 150)

If the passive leaf is fixed using a holding magnet, use a manual trigger switch, since manual triggering of the passive leaf is not possible.

When manual triggering is used, the triggering torques must be measured at the active leaves. The must be between 40...120 Nm; if not, set the IS brake accordingly (see chapter "1.3 Reference documents" on page 7, installation instructions for IS mechanism).

18.6.2 Powerturn F/R-IS/TS with lintel-mounted smoke switch

Door drive Powerturn F/R



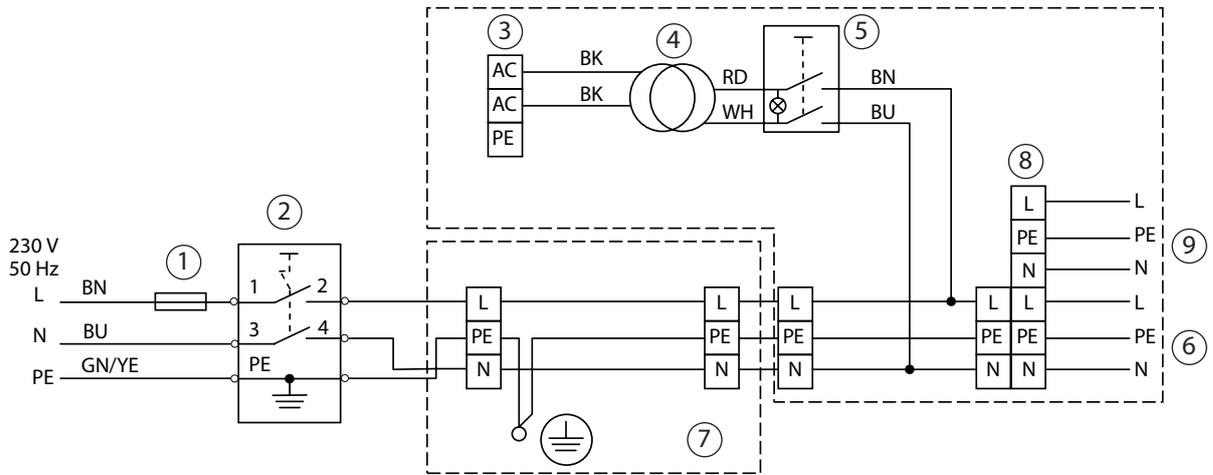
- 1 Powerturn F active leaf
- 2 Passive leaf with door closer
- 3 Integrated lintel-mounted smoke switch GC151
- 4 Output for eternal hold-open function
- 5 Reed switch for the passive leaf closing position
- 6 Holding magnet (accessory, FA GC 150)

If the passive leaf is fixed using a holding magnet, use a manual trigger switch, since manual triggering of the passive leaf is not possible.

When manual triggering is used, the triggering torques must be measured at the active leaves. The must be between 40...120 Nm; if not, set the IS brake accordingly (see chapter "1.3 Reference documents" on page 7, installation instructions for IS mechanism).

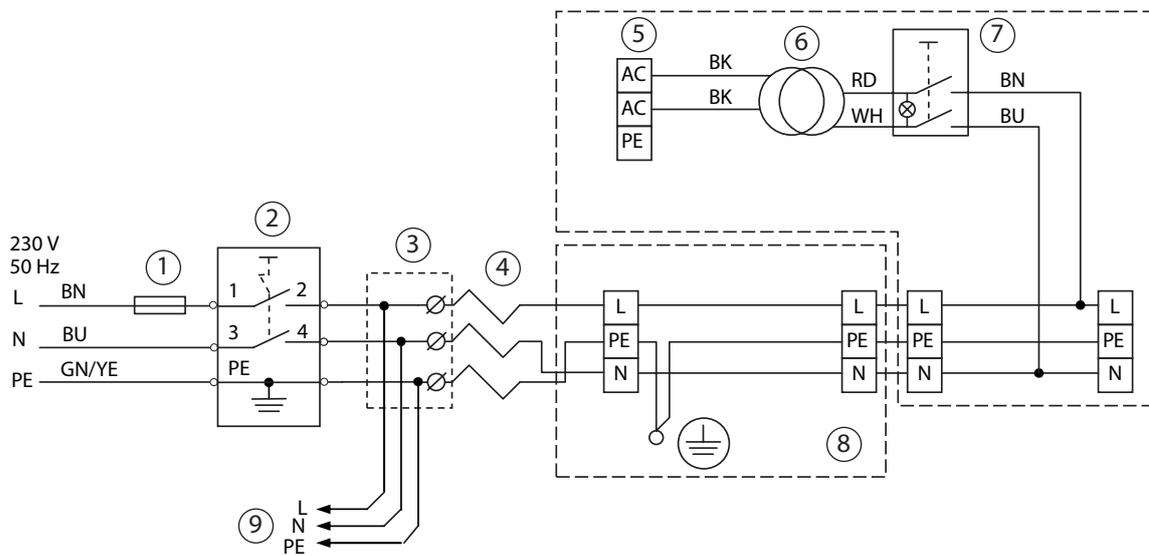
19 Mains connection

Transom installation



- | | | | |
|---|------------------------|---|---|
| 1 | Mains fuse | 6 | To second drive |
| 2 | Main switch (optional) | 7 | Mounting plate |
| 3 | Control AC IN | 8 | 230 V T-distributor |
| 4 | Transformer | 9 | 230 V 50 Hz additional device, max. 700 W |
| 5 | Main switch, internal | | |

Door leaf installation

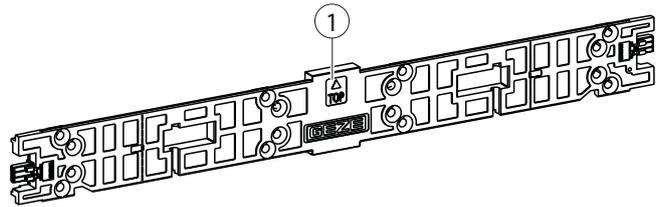


- | | | | |
|---|------------------------|---|-----------------------|
| 1 | Mains fuse | 6 | Transformer |
| 2 | Main switch (optional) | 7 | Main switch, internal |
| 3 | Connection box | 8 | Mounting plate |
| 4 | Drip loop | 9 | To second drive |
| 5 | Control AC IN | | |

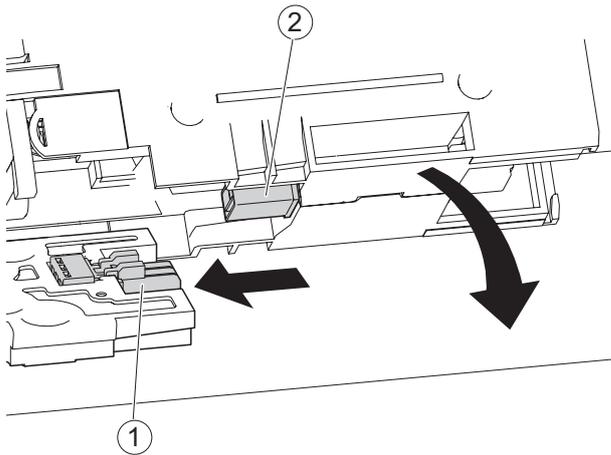
19.1 Mounting plate with integrated power supply circuit

19.1.1 Structure

- ! Make sure the mounting plate is in the correct position, see directional arrow (1).
- Mains connection always on the hinge side (secondary closing edge).
- The connection to the drive is on the facing side.



19.1.2 Connection drive – mounting plate



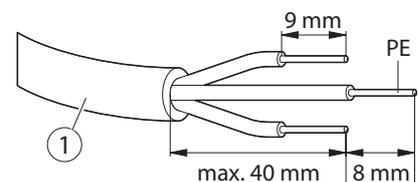
- ▶ Push the drive in place so that the electric connection is established between the connector (1) on the mounting plate and the connector (2) of the drive.

19.1.3 Connecting to the mains

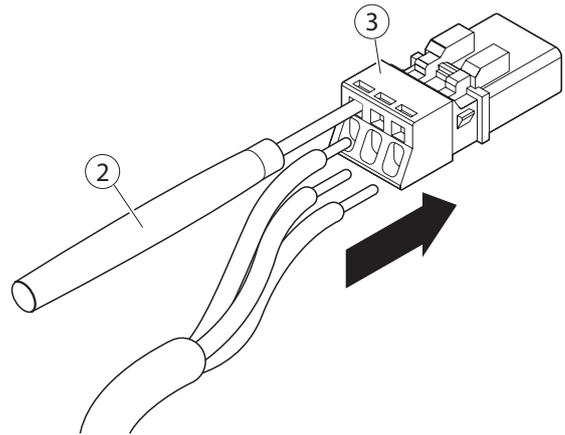
- i ▶ Note chapter 1.3 "Reference documents", p. 7.
- ▶ Note chapter 31.2 "Accessories", p. 112.

- i If the mains supply line is connected to the installed drive, the connection board DCU802 must be removed.

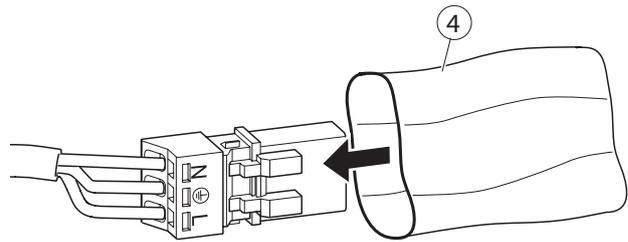
- ▶ Strip the mains cable (1).
- Stripping length = 40 mm
- Stripping length = 9 mm
- PE line lead = 8 mm



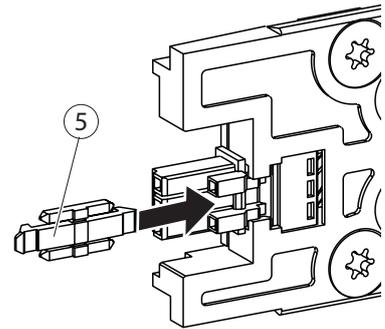
- ▶ Insert screwdriver (2) or similar into the opening of connector (3).
- ▶ Push the cores into connector (3).
- ▶ Remove screwdriver (2) again.



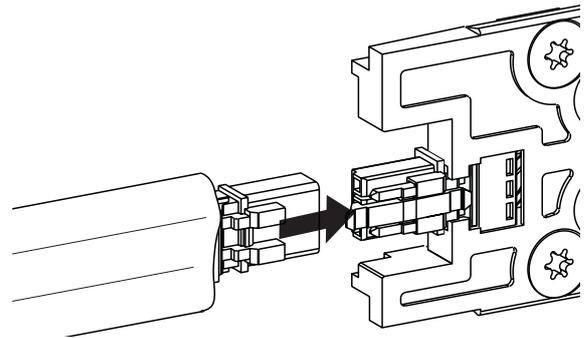
- ▶ Push the rubber sleeve (4) over the connector and cable.



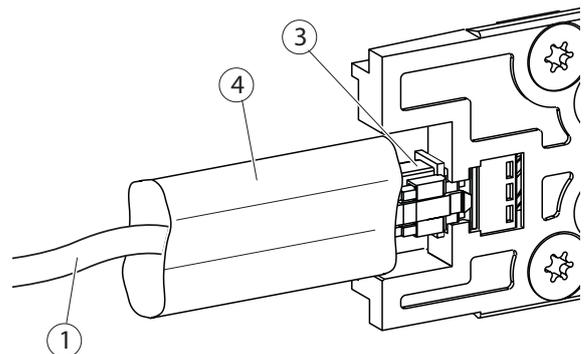
- ▶ Push the locking device (5) onto the connector.



- ▶ Insert the connector with the feeder into the mounting plate.



-
- ! In the connected state, the rubber sleeve (4) must completely enclose the connector (3) and cable (1).
 - No individual wires may be visible.
-



20 Motor gear unit

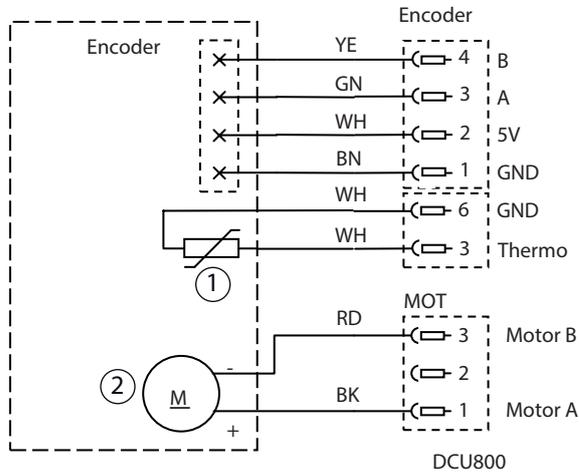


WARNING

Danger of injury through link arm or lever arm snapping back!

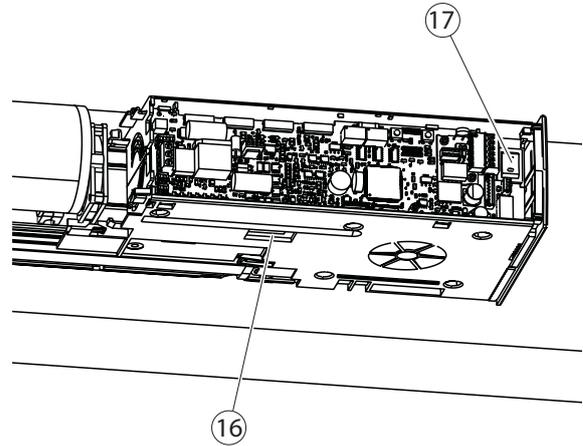
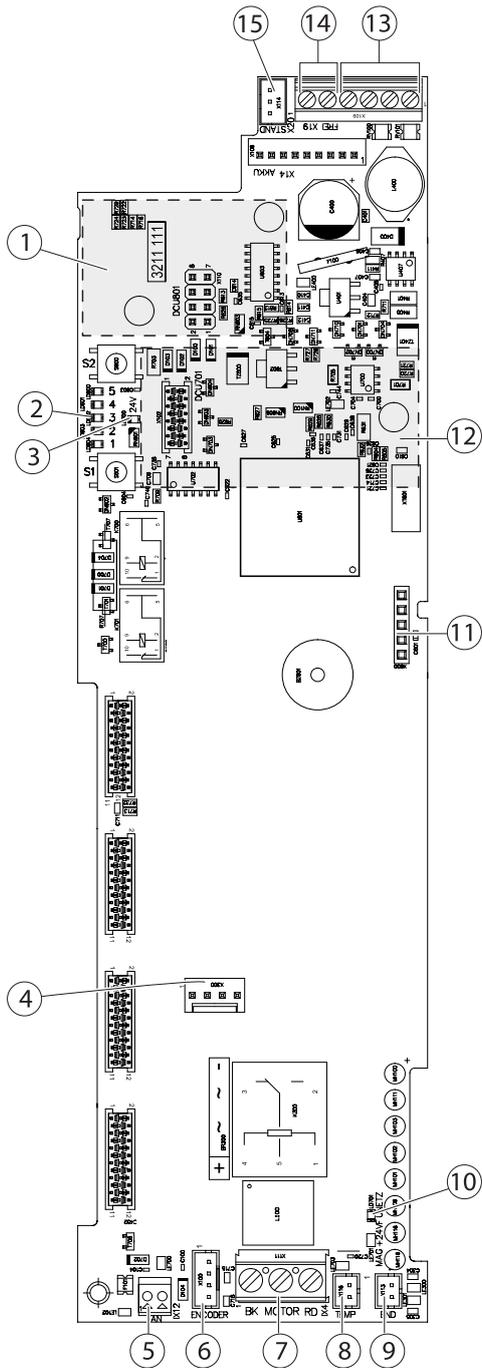
Danger of injury from hot motor gear unit!

► Disconnect motor gear unit from the control only if spring is relaxed.



- 1 Temperature sensor
- 2 Motor gear unit

21 Control unit



- | | | | |
|---|----------------------------------|----|---|
| 1 | Slot for F-board DCU801 | 10 | LED solenoid valve |
| 2 | Service buttons and service LEDs | 11 | PROG |
| 3 | LED 24V ext | 12 | Slot for radio board WRB-5 |
| 4 | Brake | 13 | FREE |
| 5 | Ventilator | 14 | 24 V |
| 6 | Rotary encoder | 15 | RS485 |
| 7 | Motor gear unit | 16 | Safety fuse F1, AC IN (10 A T, 5 × 10 mm) |
| 8 | Temperature sensor | 17 | Main switch |
| 9 | Latching action switch | | |

22 Commissioning and service

Commissioning and service can be performed using the display programme switch DPS, the internal service keys or the service app.

22.1 Commissioning

22.1.1 Pre-conditions

- Drive
 - attached
 - untaught
 - set to factory setting
- Electrical installation is complete.
- During commissioning the DPS displays "LE" and the operating modes LED is yellow.
- During new teach-in of drive: both drives to automatic mode of operation.
- With a 2-leaf system, the parameter "Number of leaves" (EF) must be set on both drives first.

22.1.2 Carrying out commissioning



CAUTION

Danger of injury with opened drive.
With the cover removed,

- do not reach into the area with moving parts.
- wear tight-fitting clothes.
- wear a hair net if necessary.



CAUTION

Risk of injury by trapping, knocking, shearing and hair etc. being pulled in at unsecured points.
With the cover removed, do not reach into the danger area.



CAUTION

Danger of injury due to sharp edges in the drive.
With the cover removed, do not reach into the danger area.



CAUTION

Danger of injury through link arm or lever arm snapping back.
Disconnect motor gear unit from the control only if spring is relaxed.

- ▶ Check whether the drive works mechanically when de-energised (check by hand).
- ▶ Switch the main switch on.
- ▶ Set the peripheral equipment before the teaching run.
- ▶ Perform the teaching run as described in chapter 22.2 "Teaching run", p. 66.
The safety sensor is active due to learning wall blanking.
- ▶ Check the functionality of the safety sensors.
- ▶ Check other functionality.

Optional:

The braking effect in de-energised state can be set for different door weights. See chapter 23 "De-energised operation", p. 71.

22.2 Teaching run

- For the teaching run to be carried out, the drive must be completely installed and supplied with voltage.
- The spring load required (EN4–7) must be set before the teaching run, see Powerturn installation instructions.
- ▶ Mechanically set on drive and calibrate on the door leaf.
- If "Start teaching" is started using the parameter menu (DPS, ST220, service keys), the user has 1 minute to start the teaching process.
 - If the door is not moved within this time, the drive cancels the teaching run and retains the data previously stored.
- As delivered, the safety sensors are configured as active.
- The teaching run starts and ends in the closing position so that the drive learns the direction of opening/closing movement properly.

The following points must be observed:

- Activating the safety sensor within the movement run (part of the teaching process) does not stop the door leaf. For this reason, only carry out a movement run under supervision or with passage safeguard.
- If the door leaf is blocked within the movement run, fault message 25 is issued and the teaching run must be repeated.

If a 2-leaf system has to be taught, the parameter "Number of leaves" (EF) must first be installed on both drives:

- ▶ Select the parameter with service terminal ST220 or the display programme switch DPS and set the value 02 for active leaf and the value 03 for passive leaf.
- ▶ Connect both drives.
- ▶ Set both drives to automatic mode of operation.

The drive differentiates between two conditions:

- The drive is as delivered (factory setting) → untaught
- Drive is already taught and needs to be taught again.

22.3 Teaching a 1-leaf system

Step	Actions	ST220 display	DPS display	Service LED display (5 → 1)
1	<ul style="list-style-type: none"> ▶ Select parameter "Start teaching" and press the ENTER key. ▶ Select 1-leaf system. 	Start teaching		
1	<ul style="list-style-type: none"> ▶ Start the respective teaching in DPS (NT): <ul style="list-style-type: none"> ▫ LE for 1-leaf system. 		LE	
1	<ul style="list-style-type: none"> ▶ Exit display. 			○ ● ● ● ●
2	A beep sounds (1 × 0.5 s).			
3a	The drive is as delivered or has been set to the factory setting. The following system parameters are displayed in succession:			
	<ul style="list-style-type: none"> ▶ Set system parameter for the present project. <ul style="list-style-type: none"> ▶ When teaching using the service interface, the parameters must be set before the teaching begins, see chapter 29.5 "Service buttons S1 and S2", p. 95. ▫ Testing: <ul style="list-style-type: none"> ▫ 24 V or energy-saving mode for GC 338 ▫ GND for GC 334, GC 342, GC 342+ 	Type of installation Leaf width Door weight Closing safety sensor Safety sensor open	OH F8 t6 S1 S3	
		Testing Electric strike type Bolt message contact type	tE to rr	
3b	If the teaching is carried out again, the parameter menu 3a is no longer displayed.			
4a	<ul style="list-style-type: none"> ▶ Wait until the "Open manually" display appears. 			
4b	<ul style="list-style-type: none"> ▶ Open door leaf manually up to the desired opening position. <p>The drive gives out an an acoustic warning signal in order to display max. drive-related open positions. The interruption of the warning signals is always shorter, extending to the max. open position.</p> <ul style="list-style-type: none"> ▶ If the beep continues to sound, the door leaf is in the range of the max. open position (±3°). ▶ In this setting, there is a possibility that the drive does not work properly or is permanently damaged. ▶ Carry out the teaching run again to avoid this. 	Open manually	L1	● ○ ○ ○ ●
5	<ul style="list-style-type: none"> ▶ Move the door leaf by hand to the desired closing position. ▶ Press the input enter key. The display is acknowledged. 	Close manually	L2	● ○ ○ ● ○
6	If GC 338 is installed: <ul style="list-style-type: none"> ▶ Press the "Teach in" key on the sensor and wait for 10 s. Otherwise (if GC 338 is not installed), proceed with point 7.	Press "Teach in"	L3	● ○ ○ ● ●
7	<ul style="list-style-type: none"> ▶ Press the input enter key. The display is acknowledged. 	Press "Teach in"	L3	● ○ ○ ● ●
8	The movement run starts automatically after 2 s. <ul style="list-style-type: none"> ▫ Wall blanking is taught. In this run, sensors are not switched as "active". ▫ An obstruction is not identified. ▫ If a blockage is detected within the movement run, fault 25 is set. The teaching run must then be repeated. 	Movement run	L4	● ○ ● ○ ○
9	When the door leaf arrives in the closing position at the end of the movement run, a beep (2 × 0.5 s) is sounded.			
10	The teaching run is finished and the display depends upon the peripheral device.	The main menu is displayed	The main menu is displayed	The operating mode is displayed

Step	Actions	ST220 display	DPS display	Service LED display (5 → 1)
5	<ul style="list-style-type: none"> ▶ Move the door leaf by hand to the desired closing position. ▶ Press the input enter key. The display is acknowledged. 	Close manually	L2	
6	If GC 338 is installed and a wall is to be taught: <ul style="list-style-type: none"> ▶ Press the "Teach in" key on the sensor interface 2x and wait for 10 s. Otherwise (if GC 338 is not installed), proceed with point 7.	Press "Teach in"	L3	
7	<ul style="list-style-type: none"> ▶ Press the input enter key. The display is acknowledged. 	Press "Teach in"	L3	
8	The movement run starts automatically after 2 s. <ul style="list-style-type: none"> ▫ Wall blanking is taught. In this run, sensors are not switched as "active". ▫ An obstruction is not identified. ▫ If a blockage is detected within the movement run, fault 25 is set. The teaching run must then be repeated. 	Movement run	L4	● ○ ● ○ ○
9	The active leaf opens up to the opening position automatically and remains in this position until the end of the teaching run for the passive leaf.			
10	The passive leaf is now taught in the same way as the 1-leaf system, see chapter 22.3 "Teaching a 1-leaf system", p. 68.			
11	When the passive leaf arrives in the closing position at the end of the movement run, a beep (2 × 0.5 s) is sounded.			
12	After the teaching is finished, the active leaf closes automatically.			
13	The teaching run is finished and the display depends upon the peripheral device.	The main menu is displayed	The main menu is displayed	The operating mode is displayed

 Teaching a 2-leaf system with service keys is not possible.

22.5 Forces and speeds

22.5.1 Forces

The forces set using "Opening force" (FO), "Opening retention force" (OF), "Closing retention force" (CF), "Force closing position" (FS) or "Closing force" (FC) always refer to N at the main closing edge.

- For the ST220, the values correspond directly to the main closing edge.
- For the DPS (with OFF), the values correspond to ×10 N at the main closing edge.

In addition, the "Obstacle" parameter (*bh*) also has an impact on the force ("Opening force" and "Closing force") during the movement. A higher value for the obstacle parameter may be desired, depending on the mass and the desired speed of the door. This has a direct impact on manual opening, see chapter 25 "Resilience to external influences or load due to wind pressure", p. 72.

22.5.2 Speeds

The "Opening time" (*o t*), "Closing time" (*c t*) and "Manual closing time" (*5 t*) speeds are always calculated for a 90° opening angle.

This means:

- If the opening angle is taught at less than 90°, the movement time is faster than the set value.
- If the opening angle is taught at greater than 90°, the movement time for the complete angle of movement is higher than the set value.
 - The drive continues past the 90° to the opening position at this speed.



Exception:

The "Closing latching action" (SC) value is not a real value. It does not correspond to a unit.

23 De-energised operation

The door can be manually opened even when in switched-off or de-energised operation. In the opening direction, the spring load acts as a brake. In the closing direction, the door must close from the open position by means of the spring load with a slower speed. This parameter can be used to set this closing speed in de-energised operation.



If a fire alarm has been triggered (fault 07), the braking force cannot be set.

▫ DPS: $\overline{01}$... 14.

▫ ST220: Set "Movement parameters", "Speeds", "Braking force" to the desired braking force (01 ... 14).

In a connected state after completion of the teaching process the value for the parameters "Braking force" must be set as follows:

▫ for personal protection;

the closing time must be kept in accordance with the table minimum closing time 90° to 0° (chapter 27 Low-energy mode) in the de-energised state.

▫ for a fire protection door;

the closing time is in the range between 6 s and 10 s.

Here, 01 is the lowest braking force (high speed) and 14 is the highest braking force (slow speed).

In an untaught condition (factory setting) or after resetting to the factory setting, the braking force is set and works in both directions of movement. After initial teaching, the value is automatically set to 13 and is only effective in the closing direction.

24 Free swing function

▫ The parameter "free swing function" is used to determine how the drive reacts to external loading.

▫ When the free swing function parameter is set, the drive will allow you to manually push the door to open or close it even in automatic operation.

▫ The door movement brakes automatically before the door is opened completely by the adjusted back check.

▫ DPS: Set $\overline{02}$ (3rd menu) to $\overline{01}$.

▫ ST220: Set "Movement parameters" and "Free swing function" to "Yes".

The free swing function parameter is not set for exposed exterior doors with high load due to wind pressure or doors exposed to overpressure, otherwise the drive cannot optimally respond to the external load, such as wind load.

25 Resilience to external influences or load due to wind pressure

In the event of exposed exterior doors with high load due to wind pressure or doors exposed to overpressure, the drive can be set using the "Opening force, FO", "Closing force, FC" and "Obstacle, bh" parameters to ensure an optimal response to external influences. The drive pushes against the external influences with the set force and for the set time ("Obstacle, bh" parameter).

The higher the set value, the more resilient the drive towards load due to wind pressure, for example, ensuring reliable opening and closing. However, manual passage is then no longer as convenient.

Manual passage of the door is easier with low set values. However, this also reduces the resilience to load due to wind pressure, for example.

26 Door closer operation

i If frail people and/or children use the door and the risk analysis states that appropriate safety measures must be selected, the "Door closer mode" ($\xi 5$) parameter must be set to 0 or 1 and the "Door closer torque" (dF) parameter must be set to 0.

This does **not** apply, if the door closing movement in the door closer mode is safeguarded with safety sensors.

The behaviour of the drive can be set so that its function corresponds to that of a mechanical door closer.

► In the service menu, set the "Door closer mode" ($\xi 5$) parameter to the desired behaviour in the door closer mode.

The speed within the torque-controlled closing is set using the "Manual closing" parameter.



► Note low-energy mode, see chapter 27 "Low-energy mode", p. 73.

► In a 2-leaf swing door system, both drives must always be set to the same door closer mode.

Door closer operation function table ($\xi 5$)

Setting of door closer operation		Explanation
Manually ($\xi 5 = 00$)	Door closing torque (dF) equal to 0 Nm	Speed-controlled closing after automatic and manual opening (SIS and obstacle detection active).
	Door closing torque (dF) 01 ... 70 Nm	Speed-controlled closing after automatic opening (SIS and obstacle detection active). Following activation by KI, KA or KB and parameter setting "Rev. closing auto", "Active", the door reverses in the event of a blockage during closing. In the event of manual opening and parameter setting "Rev. closing manual", "Active" reverses the door in the event of a blockage during closing. Torque-controlled closing following manual opening (SIS active or inactive). Drive closes the door at the set door closing torque. The drive pushes against an obstacle or reverses depending on the SIS parameter setting.
Automatic ($\xi 5 = 01$)	Door closing torque (dF) equal to 0 Nm	Speed-controlled closing after automatic and manual opening (SIS and obstacle detection active).
	Door closing torque (dF) 01 ... 70 Nm	Torque-controlled closing after automatic and manual opening (SIS active or inactive). The drive always closes the door at the set door closing torque. Following activation by KI, KA or KB and parameter setting "Rev. closing auto", "Active", the door reverses in the event of a blockage during closing. In the event of manual opening and parameter setting "Rev. closing manual", "Active" reverses the door in the event of a blockage during closing.

Observing low-energy operation

The table shows compliance with low-energy function depending on door width and max. door closing torque.

Door width [m]	max. door closing torque [Nm]
0.8	48
0.9	54
1.0	60
1.1	66
1.2	70
1.3	70
1.4	70
1.5	70
1.6	70

27 Low-energy mode



- Doors set to low-energy function generally do not require any additional protective devices, if no people in special need of protection are expected to use the door.
- In the case of 2-leaf doors both drives must be set to low-energy operation.

The Powerturn drive can be operated as a low-energy drive if the following conditions are met:

- in a de-energised state:
 - The spring's retention force and opening force must be set to <67 N at the main closing edge.
 - The closing time must be set from 90° to 0° using the table below.
 - ▶ Once the power is connected, set the value for the "Braking force" parameter so that the closing time is complied with in the de-energised state.
- in an electrified state:
 - Static force on the main closing edge is <67 N.
 - ▶ The opening and closing force must be set to 60 using the "Opening force" and "Closing force" or FO and FC parameters.
 - The kinetic energy in the door leaf has to be limited to 1.6 J.
 - ▶ The opening time and the closing time of the door must be set accordingly using the parameters "Opening time" or αt and "Closing time", "Manual closing time" or ϵt and **5** in line with the table below.
 - ▶ The hold-open times (or, oH, OP, HO, oS parameters) must be set to >5 s.

The following table shows the minimum opening time from 0° to 80° and the minimum closing time from 90° to 10°.

Door weight [kg]/ Leaf width [mm]	60	90	120	150	180	210	240	270	300	330	370	400	430	460	490	520	550	580	600
800	4	4	5	5	6	6	7	7	7	8	8	8	9	9	9	10	10	10	10
900	4	5	5	6	7	7	7	8	8	9	9	9	10	10	11	11	11	11	11
1000	4	5	6	7	7	8	8	9	9	10	10	10	11	11	12	12	-	-	-
1100	5	6	6	7	8	8	9	9	10	10	11	11	12	-	-	-	-	-	-
1200	5	6	7	8	8	8	10	10	11	11	12	-	-	-	-	-	-	-	-
1300	6	7	8	8	9	10	11	11	12	-	-	-	-	-	-	-	-	-	-
1400	6	7	8	9	10	11	11	12	-	-	-	-	-	-	-	-	-	-	-
1500	6	8	9	10	11	11	12	-	-	-	-	-	-	-	-	-	-	-	-
1600	7	8	9	10	11	12	-	-	-	-	-	-	-	-	-	-	-	-	-

Example:

Leaf weight: 90 kg, leaf width 1000 mm

The opening time must be set to 5 s and closing time must be set to 5 s.



If the drive does not fulfil these requirements, it is in low-energy function. The leaf movement must then be safeguarded using protective devices.

The set static and dynamic forces must be measured in.

28 Servo mode

The GEZE Powerturn drive can be operated as a servo drive. It supports the user torque-controlled during manual opening.

The servo drive is operated and set within the automatic operating mode.

The servo mode can only be used for 1-leaf doors.

The power support is divided into 2 functional areas:

- Servo support with additional servo torque
- Servo support with additional servo torque and additional torque for fire alarm

28.1 Servo support with additional servo torque

The drive supports the force required to manually open the door so that the door can be opened manually even under adverse environmental conditions such as wind or dynamic pressure in a staircase. The servo support can be adjusted.

The door can be accelerated manually with the aid of the servo drive up to the maximum speed at low-energy. If this speed is reached, the drive slows the door movement.

The following parameters must be set:

- Servo duration (\overline{Rd}): Duration of the servo support from activation
- Additional servo torque (\overline{Ra}): force-supporting torque for easy manual opening

When activation is via KI, KA, PE-KI, PE-KA, PE-switch function, FK1, or KI+SIS, KA+SIS or with Push & Go bracket set, the drive opens the door with the additional servo torque set. The drive closes the door again after the set servo duration (\overline{Rd}) has expired.

In the event of activation via KB, FK2 opens the drive speed-controlled with the set values "Opening force", "Closing force", "Opening time" and "Closing time".



- The additional servo torque (\overline{Ra}) must be set for the low-energy function.
- The safety sensors SIO and SIS are evaluated and react as set. In night mode, the drive does not reverse in the case of a blockage, it presses against the obstacle with the set force or torque.

28.2 Servo support with additional servo torque and additional torque servo fire alarm

28.2.1 Servo function with additional torque servo fire alarm



- Project-related approval is required for use of the function on fire protection doors.
- The drive must be supplied by a on-site safety power supply or an Uninterruptible Power Supply (UPS).
- Only manually operated activation devices (e.g. push buttons, contact mats) are permitted.

- ▶ Connect lintel-mounted smoke switch GC 151 to the drive as described in chapter 18 "Smoke switch control unit".

Function

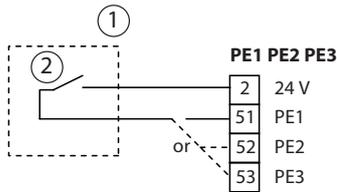
The servo support function with fire alarm and additional torque applies for fire protection doors which are installed in stairwells and which open towards the staircase as escape route exit doors in the event of a fire alarm in the building (not triggered locally at the drive through the smoke switch control unit). The excess air pressure in the staircase to clear smoke from the escape routes makes manual opening of the door more difficult. With the set torque "Servo fire alarm", the drive supports every activation if a 24V signal "Fire alarm" from the building control centre is queued at input PE1, PE2 or PE3.

In the event of a fire in the direct vicinity of the door, the lintel-mounted smoke switch installed in the door area triggers a shut-down of the drive motor and the electric strike.

In this case, the door closes by spring load.

The door can then only be opened manually, without force support by the drive.

The door drive can only be operated again in normal operation after a reset fire alarm has been carried out. For more detailed information on the reset fire alarm see chapter 18 "Powerturn F and Powerturn F/R on fire protection doors", p. 55.



- 1 On-site building control centre
- 2 The potential-free output switches the configurable input "Fire alarm servo".



WARNING

Risk of injury due to high dynamic forces of the servo function with fire alarm!

- ▶ In the event of a fire alarm, no-one may be near the door when it opens.

With activation (KB), the drive opens the door at a set additional servo torque (\bar{R}_D) plus the set opening torque "Servo fire alarm" ($\bar{F}\bar{R}$).

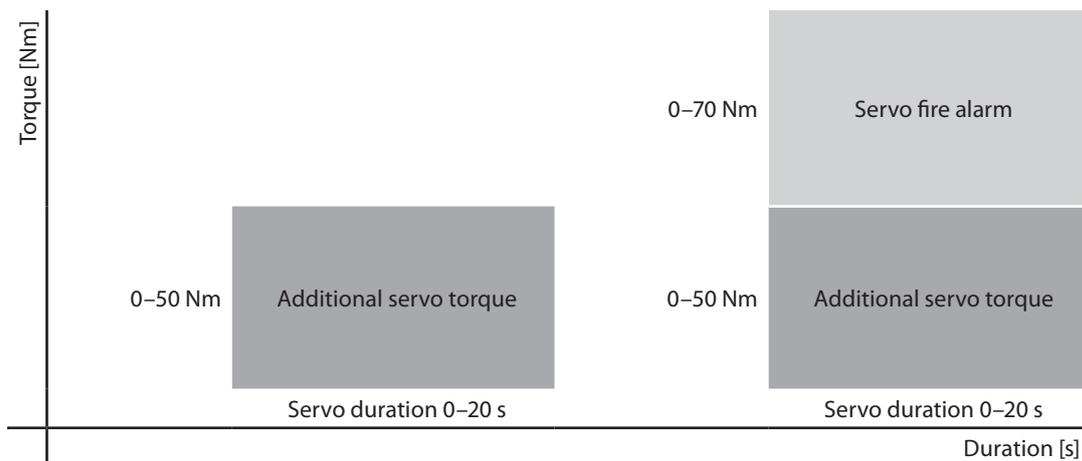
The "Servo fire alarm" opening torque ($\bar{F}\bar{R}$) is only available as long as the fire alarm signal (24V) is queued at the configurable input (PE1 or PE2 or PE3, set function "Servo fire alarm").

Set the following parameters:

- Duration of the servo support (0–20 s):
 - with DPS: Set \bar{R}_D to the desired time.
 - with ST220: Set "Movement parameters", "Servo duration" to the desired time.
- Level of desired additional opening torque (0–50 Nm):
 - with DPS: Set \bar{R}_D to the desired additional torque level.
 - with ST220: Set "Movement parameters", "Additional servo torque" to the desired amount.
- Fire alarm function of the configurable input PE1 or PE2 or PE3:
 - with DPS: Set $E1$ or $E2$ or $E3$ to $z2$ (fire alarm servo).
 - with ST220: Set "Signals", "Input signals", "PE 1 function" or "PE 2 function" or "PE 3 function" to "Fire alarm servo".
- Level of additional "Servo fire alarm" opening torque (0–70 Nm) in case of fire:
 - with DPS: Set $\bar{F}\bar{R}$ to the desired additional opening torque level in case of fire.
 - with ST220: Set "Movement parameters", "Servo fire alarm" to the desired amount.



- The additional servo torque (\bar{R}_D) must be set for the low-energy function.
- Safety sensor open (SIO) is not evaluated in the event of an activated "Fire alarm servo" function. The drive pushes against an obstacle in the opening direction with the set additional servo torque plus the torque servo fire alarm.
- Safety sensor close (SIS) is not evaluated in the event of an activated "Fire alarm servo" function. The drive pushes against an obstacle in the closing direction with the set closing torque.



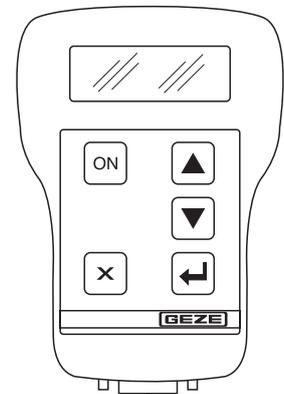
29 Service menu

29.1 Service terminal ST220

- Commissioning of the drive is possible with the service terminal ST220, software version V2.1 or higher.
- Connection either via 5-pin connector RS485 or using 3.5 mm TRS connector (with adapter cable).

29.1.1 ST220 operation

Key	Function
	<ul style="list-style-type: none"> ▫ Cursor upwards ▫ Increase number value ▫ Scroll upward (if key is pressed longer than 2 s)
	<ul style="list-style-type: none"> ▫ Cursor downwards ▫ Decrease number value ▫ Scroll downward (if key is pressed longer than 2 s)
	<ul style="list-style-type: none"> ▫ Cancel input <p>Any input can be cancelled by pressing the x key. The input position then changes to the first menu position or one menu level back.</p>
	<ul style="list-style-type: none"> ▫ Select ▫ Update display ▫ Accept new value



Entering values in service terminal ST220

- ▶ Change value with ▲ and ▼.
- ▶ Confirm using ↵.
- ▶ Abort using x if necessary.

Display directly after connection

```

GEZE
Service terminal
2.1
XXXXXXXXYWWJJZZZZZZV
    
```

Software version ST220 V2.1
Serial number ST220

29.1.2 Service mode ST220

- The change to service mode occurs when the service terminal is connected to DCU8.
- Service is possible in modes of operation LS, AU, OFF and DO.
- In service mode, the door remains in operation in the current mode of operation (not when teaching is activated).
- From software version 1.8 upwards, the hardware version is recognised. If there is no compatibility, the drive changes to safety switch-off and sets the fault "Wrong HW/SW combination".

Display after connection to the door controller

```

Powerturn V2.1 F0
DCU8ST
Automatic
Closed
    
```

Drive type
Basic board DCU200
Mode of operation
Door mode

Software version V2.1, hardware version F0

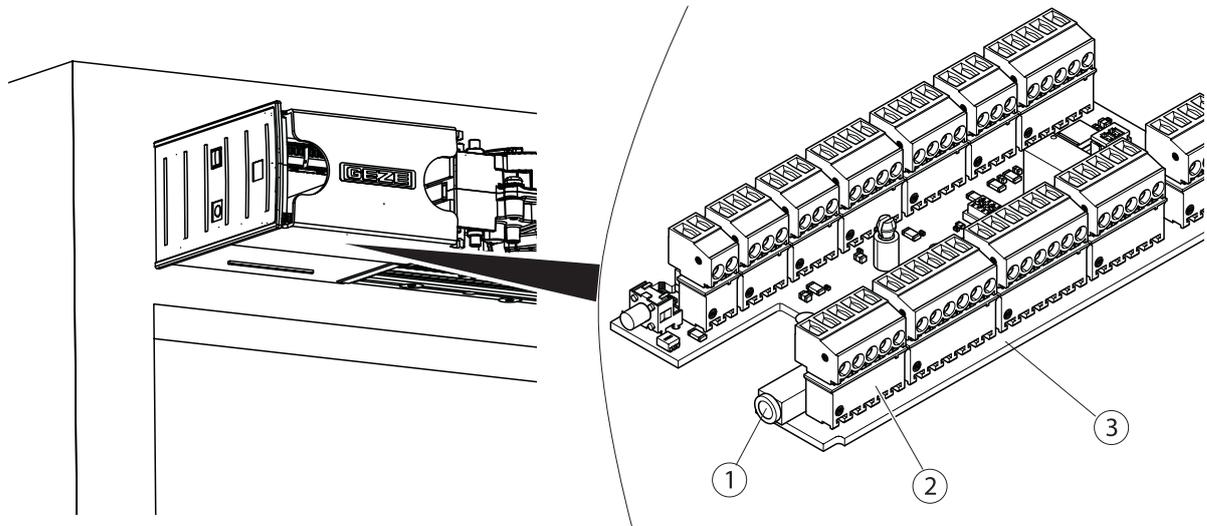
or

```

Powerturn V2.1 F1
DCU8GD
Automatic
Closed
    
```

29.2 Connecting service terminal ST220

Service terminal ST220 is connected to connection board DU802 (3) using the socket for the 3.5 mm TRS connector (1) or alternatively at the connector plug for DPS (2).



29.3 Service menu ST220

i See chapter 29.6 “DPS service menu and service buttons S1/S2 with LEDs”, p. 97. for explanations of the individual parameters.

29.3.1 Parameter setting for a 2-leaf drive

Selection of active leaf/passive leaf parameter setting	
Selection GF SF	Selection of the parameter setting GF or SF
Active leaf Para*	Setting of active leaf parameter setting
Passive leaf Para	Setting of passive leaf parameter setting

29.3.2 Main menu

A 4-digit password must be entered before the main menu can be accessed:

Password ----

i Only possible if the menu is password-protected.

Designation	Reference
Mode of operation	see section 29.3.3 “Mode of operation”, p. 78.
Door parameters	see section 29.3.4 “Door parameters”, p. 78.
Movement parameters	see section 29.3.5 “Movement parameters”, p. 79.
Signals	see section 29.3.6 “Signals”, p. 82.
Diagnosis	see section 29.3.7 “Diagnosis”, p. 91.
Standard values	see section 29.3.8 “Standard values”, p. 92.
Reset DCU8	see section 29.3.9 “Reset DCU8”, p. 93.
Start teaching	see section 29.3.10 “Start teaching”, p. 93.
Factory setting	see section 29.3.11 “Factory setting”, p. 93.
Delete maintenance	see section 29.3.12 “Delete maintenance”, p. 93.
Password	see section 29.3.13 “Password”, p. 94.
Language	see section 29.3.14 “Language”, p. 94.

29.3.3 Mode of operation

Designation	Setting values	Explanation
Operation mode*	Off	Operating mode setting
	Night	
	Shop closing	
	Automatic	
Type Opening	Permanent Open	Only open active leaf. Open active and passive leaves when activated.
	1 leaf Open 2 leaves Open	
Open Door	Open Door	Press the ▲ key Activate the door using ST220.

29.3.4 Door parameters

Designation	1. Sub-menu	2. Sub-menu	Explanation
Number of leaves	1-leaf drive moving leaf fixed leaf		The parameters are used to set the leaf on which the drive is installed.
Leaf width	value: 11 x10cm min 7 x10cm max 16 x10cm		
Leaf weight	value: 100 kg 200 kg 300 kg 600 kg		The door weight influences the safe speed.
Control Unit Type	DCU8 DCU8 F		Display only
Mounting Type	KM BS GLS KM BG GLS KM BG GST TM BS GLS TM BS GST TM BG GLS		KM Transom installation BG Opposite hinge side HS Hinge side GLS Guide rail GST Link arm TM Door leaf installation
Drive type	spring force close		
Operating Mode	Auto operation	Auto operation	
Operator serial no	000000000000		Entry of the Serial Number
Maintenance	operation time number of cycles	operation time value 12 month min 0 month max 99 month	The cycle counter is incremented by one: ▫ every time the opening position is reached after automatic activation ▫ every time the standstill position is reached after manual opening if the drive would like to close afterwards.
		number of cycles value 500.000 min 0 max 3000.000	
Locking Type	no locking fail-secure fail-safe Motor lock f.-secure w. pressure f.-safe w. pressure Motor lock pressure		Electric strike type, drive, has no closing force before opening. Drive has closing force before opening. Set in connection with an opening delay.

Designation	1. Sub-menu	2. Sub-menu	Explanation
Opening delay Day	value:	0 s *0.1	Delayed opening day: Time before the drive opens the door. Only applies in the automatic, exit only operating modes.
	min	0 s *0.1	
	max	90 s *0.1	
Opening delay Night	value:	0 s *0.1	Delayed opening night mode: Time before the drive opens the door. Only applies in the night operating mode.
	min	0 s *0.1	
	max	90 s *0.1	
ECO Mode	not activ activ		The 24 supply voltage (24VSENS) at terminal 4 is switched off after switchover to the modes of operation DO and OFF (after <10s) and NA (after 10min). Note: Activation via access control of KB in the event of NA, as well as closing the door when switching from DO to AU, requires a few seconds, as the system first has to boot up.
GEZE-bus adress	value:	0 value	For DCU103
	min	0 value	
	max	99 value	

29.3.5 Movement parameters

Designation	1. Sub-menu	2. Sub-menu	Explanation	
Speeds	Opening Time	value:	4 s	Opening time*) with automatic opening. Setting pursuant to the table in the Powerturn installation instructions.
		min	3 s	
		max	25 s	
	Close Time	value:	5 s	Closing time*) after automatic opening. Setting pursuant to the table in the Powerturn installation instructions.
		min	5 s	
		max	25 s	
	Manual closing time	value:	5 s	Closing time after manual opening or after automatic opening with set automatic door closing mode. Setting pursuant to the table in the Powerturn installation instructions.
		min	5 s	
		max	25 s	
	latching speed	value:	0	Sets the speed at which the drive moves to the closing position shortly before closing. This is required e.g. for operation with a motor lock. Latching action also applies for manual passage.
		min	0	
		max	50	
Obstacle reaction		Off	In the event of further opening attempts, the drive stops before the obstacle in the opening range.	
		Obstacle Motor On		Drive presses against obstacle in the opening range.
		Obstacle Motor Off		Drive presses against obstacle in the opening range and reduces motor current to 0 A.
Drive release		no yes	For doors without external loads, such as wind or pressure, the "Free swing function" parameter can be activated in order to enable optimum passage of the door.	

*) The values for opening time and closing time refer to an opening angle of 90°.

Designation	1. Sub-menu	2. Sub-menu	Explanation
	Close power fail	value: 13 min 1 max 14	Braking force during closing via spring action following power failure or fire alarm.
Forces	Opening force	value: 150 N min 10 N max 250 N	Open static force at the main closing edge.
	Closing force	value: 150 N min 10 N max 250 N	Close static force at the main closing edge.
	Obstacle	value: 6 0.1 s min 1 0.1 s max 20 0,1 s	Time for which the drive pushes against an obstacle with the set static force.
	Per opening pressure	value: 00 N min 00 N max 70 N	Constant force at the main closing edge in open position.
	Per closing pressure	value: 00 N min 00 N max 70 N	Constant force at the main closing edge in closed position.
	latching force	value: 50 N min 00 N max 150 N	Force acts after the end of the latching action in the closed position. Manual opening is more difficult during the set time. The greater the force set, the longer the duration. Examples: for 10 N=0.5 s, for 150 N = 2 s
	Manual torque	value: 0 Nm min 0 Nm max 70 Nm	Door closing torque time after manual opening. EN 16005 0...40: EN 16005 41...70: EN 16005 or safety sensors necessary.
Hold-open times	Push and Go	value: 1 s min 0 s max 60 s	Hold-open time during passage with Push and Go.
	Manual	value: 1 s min 0 s max 70 s nein	Hold-open time for manual opening. "No" corresponds to an unlimited hold-open time, no automatic closing. If manual triggering is set, the value is limited to max. 10s.
	2 leaves (Summer)	value: 1 s min 0 s max 60 s	With activation KI, KA 2-leaf opening (AU-So) Setting on GF control.
	1.leaf (Winter)	value: 1 s min 0 s max 60 s	With activation KI, KA 1-leaf drive (AU-Wi, AU-So) 2-leaf opening (AU-So) Setting on GF control.
	KB	value: 1 s min 0 s max 60 s	For activation by KB.

Designation	1. Sub-menu	2. Sub-menu	Explanation
	Close delay GF	-> EN16005	EN 16005 0 s: both leaves close simultaneously. 01 ... 15 s: The active leaf closes some time after the passive leaf.
		min	
		max	16 s: EN 16005 16 s: Active leaf does not close until after the passive leaf has closed completely.
	dynamic HO increase	no yes	When actuated, the passage frequency is taken into account in the hold-open time. The door does not close as fast when passage requirements are increased.
Reversing	Rev. manual Close	not activ activ	Reversing in the event of an obstruction within closing following manual opening.
	Rev. autom. Close	not activ activ	Reversing in the event of an obstruction within closing following automatic opening.
Servo Duration		value: min max	0 s 0 s 20 s Adjustable duration of the force support in servo mode.
Servo torque		value: min max	0 Nm 0 Nm 50 Nm Adjustable torque of force support for manual opening (limited in time through "servo duration").
Servo Fire alarm		value: min max	0 Nm 0 Nm 70 Nm Adjustable torque for power-support for fire alarm if 24 V applied to PE1 or PE2. Acts in addition to "additional servo torque". See servo function with fire alarm, chapter 28.2.1 "Servo function with additional torque servo fire alarm", p. 74.
Release/Reset man.		inactive Release/Reset man. Ausloesung manuell Reset manually	Settable functions for manual triggering and reset via the door leaves, see chapter 18.
Backcheck		value: min max	50 % 10 % 80 % Application of the back check, referenced to maximum opening range (manual opening).
Fixed start point		value: min max	10 % 0 % 95 % Start of the passive leaf at opening range of the active leaf, referenced to its maximum opening range. Note EN 16005 with 50 cm gap between the two main closing edges.
Push and Go		Wert: min max	0 % 0 % 20 % 0%: No Push And Go 1-20%: Push And Go Response range referenced to maximum opening range (=100).

Designation	1. Sub-menu	2. Sub-menu	Explanation
Adjust Opening angle		value: 0 Grad min -9 Grad max 9 Grad	The value is only for fine adjustment. The value is taught during the teaching run and then corresponds to point 0. This allows it to be adjusted manually and, again, subsequently corresponds to point 0. The opening value can thus be manually adjusted step-by-step. Is not set in the factory setting.
close pos. tolerance		value: 30 *0,1 degree min 0 *0,1 degree max 90 *0,1 degree	Angle on the drive axle to fine-tune the tolerance in the closing position from which the drive attempts to close again. ► Set the value so that the door gap is as small as possible before the drive closes again.
Door closer mode		Manual Automatic	Manual: The door only closes with the set door closing torque after manual opening, otherwise speed-controlled. Automatic: The door always closes with the set door closing torque regardless of the type of activation.
Manual interference		value: 0 value min 0 value max 10 value	Sets, within the automatic closing, the option to manually intervene in the door movement from the SIO page. When active, the door can then be manually reopened. 0: = off, 1: = easy, 10: = difficult

29.3.6 Signals

Designation	1. Sub-menu	2. Sub-menu	3. Sub-menu	Explanation
Input signals	S11-terminal	SIS Current state	S11-terminal SIS Z->not active K->normally closed F->SIS rev	
		S11 contact	unused normally closed Frequence	Parameter sets the use of the safety sensor close contact type.
		SIS function	SIS rev	If the safety sensor close triggers, the door reverses.
			SIS and KI	If the safety sensor close triggers, the drive reacts as with activation KI.
			SIS and KA	If the safety sensor close triggers, the drive reacts as with activation KA.
			SIS stop	If the safety sensor close triggers during a closing movement, the drive stops.

Designation	1. Sub-menu	2. Sub-menu	3. Sub-menu	Explanation
		SIS Manual	not activ activ	Closing safety sensor active/ inactive when closing after manual opening in door close mode.
	SI3-terminal SIO	Current state	SI3-terminal SIO Z->not activ K->normally closed F->SIO stop	
		SI3 contact	unused normally closed Frequence	Parameter sets the use of the safety sensor open contact type.
		SI3 function	SIO stop	If the safety sensor open trig- gers, only the drive on the detected door leaf stops.
			SIO stop SF GF	If the behaviour should be the same for active leaf and SF, both drives must be set to SIO stop SF GF. If the safety sensor open trig- gers, both active leaf and pas- sive leaf drive stop.
		SI3 wall blank- ing	value: 0 % min 0 % max 99 %	0%: No wall blanking. The range of application for the wall blank- ing of the safety sensor open is taught during commission- ing and can be corrected here. Maximum opening range of the door = 99%.
		SIO Manual	not activ activ	Safety sensor open (SIO) not ac- tive during manual opening.
	Lock monitoring	Current state	Lock monitoring Z->not activ K->normally open F->Bolt switch	
		Lock monitoring	normally open normally closed	Feedback e.g. of a motor lock.
	KB	Current state	KB Z->not activ K->normally open	
		KB contact	unused normally open normally closed	The input KB is active in the operating modes AU, LS and NA. With 2-leaf assemblies the mechanical contact can be con- nected to the active leaf control or to the passive leaf control. On activation the active leaf opens and, if switched on, the passive leaf. Active in every mode of operation when the door is not closed.

Designation	1. Sub-menu	2. Sub-menu	3. Sub-menu	Explanation
KI	Current state	KI Z->not activ K->normally open A->*0.1s		The input KI is active in AU and LS mode. With 2-leaf assemblies the contact sensor inside can be connected to the active leaf control or to the passive leaf control. On activation the active leaf opens and, if switched on, the passive leaf. Active in every mode of operation when the door is not closed.
		KI contact unused normally open normally closed		
		KI delay	value: 0 s *0.1 min 0 s *0.1 max 90 s *0.1	
KA	Current state	KA Z->not activ K->normally open A->*0.1s		The input contact sensor outside is only active in the AU operating mode. With 2-leaf systems, the contact sensor outside can be connected to the active leaf control or to the passive leaf control. On activation, the active leaf opens and, if switched on, the passive leaf. Active in every mode of operation when the door is not closed.
		KA contact unused normally open oeffner		
		KA delay	value: 0 s *0.1 min 0 s *0.1 max 90 s *0.1	
NA	Current state	NA Z->not activ K->normally open		
		NA contact unused normally open normally closed		
LS	Current state	LS Z->not activ K->normally open		
		LS contact unused normally open normally closed		
AU	Current state	AU Z->not activ K->normally open		
		AU contact unused normally open normally closed		
DO	Current state	DO Z->not activ K->normally open		
		DO contact unused normally open normally closed		
OFF	Current state	OFF Z->not activ K->normally open		

Designation	1. Sub-menu	2. Sub-menu	3. Sub-menu	Explanation
		OFF contact	unused normally open normally closed	
	PE1	Current state	PE1 Z->not activ K->unused F->unused	
		PE1 function	unused	
		Switchover summer		For connection of a push button for the summer function.
		Switchover winter		For connection of a push button for the winter function. Only for switching from 1-leaf to 2-leaf opening, not for actually opening the door.
		Sabotage	NC	Permanently switched. If the contact is interrupted KB is not evaluated in the night mode of operation. All other functions remain the same.
	Closed Pos	GF	NO	Closing position contact of the door leaf <ul style="list-style-type: none"> ▫ for 1-leaf door ▫ for 1-leaf door drive with manual passive leaf (door closer): Closing position contact of the active leaf <ul style="list-style-type: none"> ▫ for 2-leaf door: Active leaf contact to GF control, passive leaf contact to SF control
		P-KI activation	NO	Additional contact sensor (P-KI, P-KA).
		P-KA activation	NO	
		open-close button	NO	On activation, the output of the push button is closed. With 2-leaf assemblies the push button can be connected to the active leaf control or to the passive leaf control. If the push button is connected to the passive leaf control, both door leaves open and close on activation of the switch function. When the push button is pressed once, the drive opens the door. When the push button is pressed again, the drive closes the door.

Designation	1. Sub-menu	2. Sub-menu	3. Sub-menu	Explanation
			open-close with HO NO	On activation, the output of the push button is closed. With 2-leaf assemblies the push button can be connected to the active leaf control or to the passive leaf control. If the push button is connected to the passive leaf control, both door leaves open and close on activation of the switch function, even if the type of opening 1-leaf opening is active (bed opening). When the push button is pressed once, the drive opens the door and closes after the hold-open time has expired. When the push button is pressed again (within the hold-open time) the drive closes the door without waiting for the hold-open time to expire. If the push button is connected to the active leaf, the 1-leaf hold-open time is used with 1-leaf use, and the 2-leaf hold-open time with 2-leaf use.
			Pushbutn-Reset	NO For restarting the drive. Function as reset.
			double push	NO 1x press = 1-leaf opening 2x press = 2-leaf opening
			Stop	NO For connection of a stop push button.
			Stop	NC
			Closed Pos SF	Closing position contact of the passive leaf with 2-leaf door with manual passive leaf (door closer).
			WC Control	Connection to the internal push button for the WC function.
			Fire alarm Servo	If active, the function additional servo torque is set with servo fire alarm torque for the duration (servo).
			1 leaf open	In 2-leaf systems, when the signal is active on the active leaf only 1 leaf is opened. Display only for 2-leaf drives.
PE2		Current state	PE2 Z->not activ K->unused F->unused	
		PE2 function	unused	
			MPS	MPS For connection of an MPS.
			Switchover summer	NO For connection of a push button for the summer function.
			Switchover winter	NO For connection of a push button for the winter function.
			Sabotage	NC see PE1

Designation	1. Sub-menu	2. Sub-menu	3. Sub-menu	Explanation
			Closed Pos GF NO	Closing position contact of the door leaf <ul style="list-style-type: none"> ▫ for 1-leaf door ▫ for 1-leaf door drive with manual passive leaf (door closer): Closing position contact of the active leaf <ul style="list-style-type: none"> ▫ for 2-leaf door: Active leaf contact to GF control, passive leaf contact to SF control
			Emerge.lock.20KOhm NO	The input can be used to connect an emergency lock switch. When the emergency lock switch is activated, the contact is closed and 17.83 V is applied to the input. The door closes and locks. The contact sensors KA, KI and KB, safety sensors SIS and SIO as well as obstacle detection are hidden. The door remains closed as long as the emergency lock signal is applied to the input.
			P-KI activation NO P-KA activation NO	Additional contact sensor (P-KI, P-KA). For connection of additional closing contacts.
			open-close button NO	see PE1
			open-close with HO NO	see PE1
			Stop 12 kOhm NO	For the connection of a stop push button with 12 kOhm terminating resistor.
			Pushbutn-Reset NO	For restarting the drive. Function as reset.
			double push NO	1× press = 1-leaf opening. 2× press = 2-leaf opening.
			Stop NO	For connection of a stop push button.
			Stop NC	For connection of a stop push button.
			Closed Pos SF	Closing position contact of the passive leaf with 2-leaf door with manual passive leaf (door closer).
			Stop 20 kOhm	For the connection of a stop push button with 20 kOhm terminating resistor.
			WC Control	Connection to the internal push button for the WC function.
			Fire Alarm Servo	See PE1
			1-leaf opening	In 2-leaf systems, when the signal is active only 1 leaf is opened. Display only for 2-leaf drives
			Fire alarm w/o SI	If active, the safety sensors are hidden and the door opens and closes at a safe speed.

Designation	1. Sub-menu	2. Sub-menu	3. Sub-menu	Explanation		
Output signals	PA1	Current state	PA1			
			Z->not activ			
			F->unused			
				PA1 function	K->normally open	
			unused			
			Gong		If KA is triggered.	
			Error NO		The function is used for fault messages, e.g. to an on-site building control centre. The contact closes or opens respectively if the control determines a fault.	
			Error NC			
			Error MPS		The function is used to switch the fault LED at the MPS. The contact closes if the control determines a fault. When maintenance is due, the output is switched cyclically, the fault LED on the MPS flashes.	
			Warningsignal		The function is used to cyclically switch an activator on/of while the door is opening or closing.	
			add. locking type		For connection of an additional electric strike. Function in accordance with parameters "Electric strike type".	
			closed locked		The function is used to signal the door status, e.g. to a building control centre.	
			closed			
			not closed			
			open			
			Off			
			Night			
	Exit only					
	Automatic					
	Hold open					
	Light activation	The function is used to activate a light controlling device which, for example, switches on the entry illumination as soon as a contact sensor (KI, KA, KB, SIS+KI, SIS+KA) is activated or the door is opened manually.				
	Day/Night status	The function is used to signal the day mode of operation to a customer building control centre. The output switches to GND if the mode of operation LS, AU 1-leaf, DO, or AU 2-leaf is set.				
	Service due	The function is used to signal the door status, e.g. to a building control centre.				
	holding magnet GF	For setting the holding magnet (active leaf).				
	holding magnet SF	For setting the holding magnet (passive leaf).				
	WC Timeout	For connection of a lamp or a signal to indicate when the 30-min. timer has expired for the WC function.				

Designation	1. Sub-menu	2. Sub-menu	3. Sub-menu	Explanation
			TOE f.secure NO	For connection of a fail-secure electric strike. Only works when the TOE function is active.
			TOE f.safe NC	For connection of a fail-safe electric strike. Only works when the TOE function is active.
PA2	Current state	PA2	Z->not activ F->unused K->normally open	
	PA2 function	unused		
		Gong		If KA is triggered.
		Error NO		see PA1
		Error NC		
		Error MPS		see PA1
		Warningsignal		The function is used to cyclically switch an activator on/off while the door is opening or closing.
		add. locking type		For connection of an additional electric strike. See PA1.
		unused		
		closed locked		The function is used to signal the door status, e.g. to a building control centre.
		closed		
		not closed		
		open		
		Off		
		Night		
		Exit only		
		Automatic		
		Hold open		
		Light activation		see PA1
		Day/Night status		see PA1
		unused		
		Service due		see PA1
		holding magnet GF		For setting the holding magnet (active leaf).
		holding magnet SF		For setting the holding magnet (passive leaf).
		WC Timeout		For connection of a lamp or a signal to indicate when the 30-minute timer has expired for the WC function.
		TOE f.secure NO		See PA1.
		TOE f.safe NC		See PA1.
Test SI	Current state	Test SI	Z->not activ K->unused F->No testing	
	Test SI	no testing		Testing the safety sensor.
		Testing with 24V		Depending on the type used, the testing must be set to 24V or GND here.
		Testing with GND		
		Energy-saving mode		
Operating Mode LED	Current state	Operating Mode LED	Z->not activ K->unused F->Operation mode	
	LED function	Operation mode	inactiv	Disables the mode of operation LED on the drive.

29.3.7 Diagnosis

Designation	1. Sub-menu	2. Sub-menu	Explanation	
current Values	inputs	SI1	0 V	
		SI3	0 V	
		RM	0 V	
		KB	0 V	
		KI	0 V	
		KA	0 V	
		NA	0 V	
		LS	0 V	
		AU	0 V	
		DO	0 V	
		OFF	0 V	
		PE1	0 V	
		PE2	0.0 V	
		PE3	0.0 V	
		S1	0 V	
		S2	0 V	
		S3	0 V	
	FK1	0 V		
	FK2	0 V		
	END	0 V		
		outputs	PA1 closed	
			PA2	0 V
			TOE	24 V
			TEST	24 V
			FAN	0 V
			MAG	0 V
		internal data	current position	
				23 %
			act. Motor current	
			Mot DCU800	0.0 A
			Voltages	
			Power	On
			24 V internal	xy.z V
			24 V external	xy.z V
			Temperatures	
			DCU800	41 degree C
			M DCU800	45 degree C
		Statistics		
		Total cycles	0	
		Manual cycles	0	
		hours	1352	
		hours Ser	112	
		Yoke cycle	235	
current conditions	inputs	SI1	off	
		SI3	off	
		RM	off	
		KB	off	
		KI	off	
		KA	off	
		NA	off	
		LS	off	
		AU	off	
		DO	off	
		OFF	off	
		PE1	off	
		PE2	off	
		PE3	off	
		S1	off	
		S2	off	
		S3	off	
		FK1	off	
		FK2	off	
		END	off	

Designation	1. Sub-menu	2. Sub-menu	Explanation	
error memory	outputs	PA1	off	
		PA2	off	
		TOE	off	
		TEST	off	
		FAN	off	
		MAG	off	
	current errors	Error 1		Cause 1
				Cause 2
				Cause 1
				Cause 2
		Error 2		Cause 1
				Cause 2
		Error 3		Cause 1
				Cause 2
		Error 4		Cause 1
				Cause 2
old errors	Error 1		Cause 1	
			Cause 2	
	Error 2		Cause 1	
			Cause 2	
delete curr.errors	no yes			
delete old errors	no yes			
Configuration	drive	Ser Nr 000000000000		
		OEW left ?xyz		
		Mot.Resist: 1770mOhm		
		Curr.M.Res: 0mOhm		
	control unit	Type Powerturn		
		Fer Dat KW xy xzyx		
		SVN 1280:161711 (example)		
	myGEZE Bluetooth Mod	Software	Version	(only available at DCU112)
		Start BT-Pairing	start pairing at DCU112	
	software	Powerturn 2.1 F0		
SVN 2637:2640M				
CRC bfd8a87				
Id.Nr. 158511 (example)				

29.3.8 Standard values

Designation	1. Sub-menu	2. Sub-menu	Explanation
Default Values	no		Values are set to standard settings. Position, SIO wall blanking and opening angle are retained. Fault memory is deleted. A teaching run and initialisation run are not necessary.
	yes		

29.3.9 Reset DCU8

Designation	1. Sub-menu	2. Sub-menu	Explanation
Reset DCU8	no yes		Fault memory is deleted. Position and opening angle are not deleted. The processor restarts. A teaching run is not necessary, an initialisation run is necessary.

29.3.10 Start teaching

Designation	1. Sub-menu	2. Sub-menu	Explanation
Start learning	1 leaf learning 2 leaves learning		Starts the teaching procedure. For the procedure, see chapter 22.2 "Teaching run", p. 66.

29.3.11 Factory setting

Designation	1. Sub-menu	2. Sub-menu	Explanation
Factory setting	no yes		Reset all the values to the factory settings. The state is like after delivery. Values to standard setting, fault memory, position and opening angle are deleted. A teaching run and initialisation run are necessary.

29.3.12 Delete maintenance

Designation	1. Sub-menu	2. Sub-menu	Explanation
Service reset	no yes		Clear the maintenance values.

29.3.13 Password

Designation	1. Sub-menu	2. Sub-menu	Explanation
Password ST220	Password old 0000 Password new ----		for access to the service menu with ST220.
Password DPS	Password old 00 Password new --		Is used to enable the DPS instead of enabling via a key switch. Disabling reoccurs automatically after 1 minute without push button activation. The first digit specifies how often the key ▲ has to be actuated and the second digit how often the key ▼ has to be actuated to release operation of the DPS.
Block parameters	no yes		

Entering the password in control unit ST220

- ▶ Change digit with ▲ or ▼.
- ▶ Confirm digit and change to next position with ↵.
- ▶ Abort with x.

Display of the current position by the asterisk under it.

- ▶ After completing entry, press ↵ to accept the password.

- After 1 minute without a button being pressed or when the service menu is accessed again, the password is required before changes to the operating mode setting or to the parameter settings can be carried out.
- The password has to be set separately for the active leaf and passive leaf drive. The active leaf drive and the passive leaf drive can have different passwords.
- 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.

29.3.14 Language

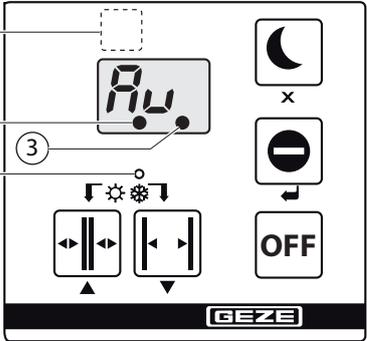
Designation	Setting values	Explanation
Language	german english français svensk	

29.4 Display programme switch DPS

The DPS can be used for commissioning and service:

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

Operating mode		Service mode	
<i>nR</i>	Night mode	×	Cancel and return to first menu level
<i>L5</i>	Exit only	↵	confirm
<i>Ru</i>	Automatic	▲	scroll up increase value
<i>do</i>	Hold open	▼	scroll down Reduce value
<i>oF</i>	OFF	-	-
▲ + ▼ simultaneously	Change 2-leaf operation 1-leaf operation	-	-
Service key (1) + ↵ simultane- ously	Change mode of operation / service mode	-	-



1 Service button

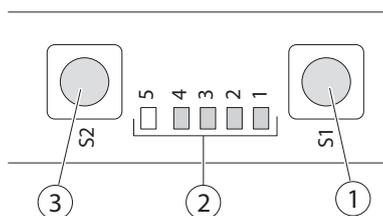
2 Position unknown

3 Illuminated for maintenance

4 Lights up at 1-leaf operation

29.5 Service buttons S1 and S2

- 1 Service key S1
- 2 Service LEDs
- 3 Service key S2



The service buttons S1 and S2 have the following functions:

- For diagnosis
- For indicating and changing drive parameters
- For “teaching” the drive



During normal operation the LEDs indicate the current mode of operation. The mode of operation can be changed using keys S1 and S2.

Function	Input and reaction
Open/leave the parameter menu	▶ Simultaneously press buttons S1 and S2 longer than 2 s. LED5 flashes slowly, corresponding to the selected parameter level: Level 1: 1 pulse + 1 s pause Level 2: 2 pulses + 1 s pause LED1 through LED4 display the parameter.
Parameter selection	▶ Briefly press key S2 (+) or key S1 (-).
Switch to value setting	▶ Keep key S1 pressed longer than 2 s. In the value menu, LED5 is off and LED1 through LED4 display the value in accordance with the value table.
Change value	▶ Briefly press key S2 (+) or key S1 (-).
Confirm value	▶ Press key S1 longer than 2 s.
Value setting without exiting value change	▶ Press key S2 longer than 2 s.
Reset the values to the factory settings	▶ Set parameter 24 (factory settings) to 01.

System signals

- If one or more faults are pending, these are displayed consecutively alternatively with the current mode of operation in encoded form with service LEDs 1 to 4.
- The red LED5 flashes quickly (10 Hz) on the fault display.
- The mode of operation is displayed for 5 s, the respective fault message for 2 s.

Service mode

- Individual parameters can be set for the control in service mode.
- Within the first 3 minutes of the mains voltage being switched on, the device can be changed to service mode using keys S1 and S2.
- There is a time limit to changing to service mode using keys S1 and S2 so that safety-related parameters are not changed unintentionally during operation.
- It is possible to change from any mode of operation to the service mode.
- The control automatically changes back to normal operation if no key is pressed in service mode for 2 minutes.
- In service mode, the door drive does not open and close automatically.
- The door can be opened and closed manually.

Changing to the parameter selection menu

- ▶ Simultaneously press keys S1 and S2 longer than 2 s.

The control changes to the parameter selection menu.

In this menu, the red LED5 flashes once (parameter level 1) or twice (parameter level 2) at 1 Hz.

The parameters are indicated in coded form by the other 4 LEDs.

The desired parameters are selected using keys S1 (-) and S2 (+).

Changing to the value menu

- ▶ Press key S1 for longer than 2 s.

The control changes to the value menu.

- All 5 LEDs are used for coding the values.
- The desired value is selected using keys S1 (-) and S2 (+).
- After key S1 has been kept pressed for more than 2 s the control takes over the value indicated.
- Input can always be aborted by pressing key S2 for more than 2 s; the control then changes back to the value menu or the parameter menu.
- Service mode is quit by pressing keys S1 and S2 simultaneously for more than 2 s.

Display values service LEDs

5	4	3	2	1	Value
○	○	○	○	○	0
○	○	○	○	●	1
○	○	○	●	○	2
○	○	○	●	●	3
○	○	●	○	○	4
○	○	●	○	●	5
○	○	●	●	○	6
○	○	●	●	●	7
○	●	○	○	○	8
○	●	○	○	●	9
○	●	○	●	○	10
○	●	○	●	●	12
○	●	●	○	○	14
○	●	●	○	●	16
○	●	●	●	○	18
○	●	●	●	●	20

5	4	3	2	1	Value
●	○	○	○	○	25
●	○	○	○	●	30
●	○	○	●	○	35
●	○	○	●	●	40
●	○	●	○	○	45
●	○	●	○	●	50
●	○	●	●	○	55
●	○	●	●	●	60
●	●	○	○	○	65
●	●	○	○	●	70
●	●	○	●	○	75
●	●	○	●	●	80
●	●	●	○	○	85
●	●	●	○	●	90
●	●	●	●	○	95
●	●	●	●	●	100

29.6 DPS service menu and service buttons S1/S2 with LEDs

- Changing to the service mode is possible in the NA, LS, AU and DO operating modes.
- If no key is pressed in service mode for a period of 2 minutes, an automatic change to the operating mode takes place.
- In service mode, the door remains in operation in the current mode of operation (not when teaching is activated).
- Service mode via the DPS is blocked if the service app at the drive is active (display nS).

1st menu

DPS	Service LEDs					Parameter	Setting values	Explanation
	5	4	3	2	1			
αt	*	○	○	○	●	Opening time	03... 04 ...06...25	in s; Opening time*) with automatic opening. Setting pursuant to the table in the Powerturn installation instructions.
ct	*	○	○	●	○	Closing time	05 ...06...25	in s;
FB	*	○	●	○	●	Leaf width	07... 11 ...16	in mm × 100; Influences the forces at the main closing edge.
tδ						Door weight	01, 02, 03, 06	in kg × 100; Influences the safe speed.
Pu	*	○	●	○	○	Push and Go	00 01	0%: No Push And Go 1–20%: Push And Go Response range referenced to maximum opening range (=100).
SC	*	○	●	●	○	Latching action closing	00 ...10 12...20 25...50	Sets the speed at which the drive moves to the closing position shortly before closing. This is required e.g. for operation with a motor lock. Latching action also applies for manual passage.
or	*	○	●	●	●	Hold-open times, 1-leaf (winter)	00... 01 ...10 12...20 25...50 60	in s; With 2-leaf drive for winter operation With activation KI, KA
FI	*	●	○	○	●	SIS function	01 SIS rev	If the safety sensor close triggers, the door reverses.
							02 SIS and KI	If the safety sensor close triggers, the drive reacts as with activation KI.
							03 SIS and KA	If the safety sensor close triggers, the drive reacts as with activation KA.
							04 SIS and Stop	If the safety sensor close triggers during a closing movement, the drive stops.
F3	*	●	○	●	○	SIS function	05 SIO Stop	If the safety sensor open triggers, only the drive on the detected door leaf stops.
							06 SIO Stop SF-GF	If the behaviour should be the same for active leaf and SF, both drives must be set to SIO stop SF GF. If the safety sensor open triggers, both active leaf and passive leaf drive stop.
tE	*	●	○	●	●	Testing SI	00 No testing	Testing the safety sensor. Depending on the type used, the testing must be set to 24V or GND here.
							01 Testing with 24 V	
							02 Testing with GND	
							03 Energy-saving mode	For energy-related reasons, the Powerturn can switch the GC 338 automatically to standby mode as long as it is not required. See chapter 5.1 "Pair of safety sensor strips GC 338", p. 13.

*) The values for opening time and closing time refer to an opening angle of 90°.

DPS	Service LEDs					Parameter	Setting values		Explanation
	5	4	3	2	1				
t o	*	●	●	○	○	Electric strike type	00	No electric strike	Drive does not have closing force (pressure in the closing position) before opening.
							01 Fail-secure		
							02	Fail-safe	
							03	Motor lock	
							04	Working closing pressure	
							05	Static closing pressure	
							06	Motor closing pressure	
5 t	-	-	-	-	-	Control unit type	80	DCU8	Only display, no setting option.
							81	DCU8-F	
DH	*	●	●	○	●	Type of installation	01 KM HS GLS	Transom installation hinge side - guide rail	
							02	KM BG GLS	Transom installation opposite hinge side - guide rail
							03	KM BG GST	Transom installation opposite hinge side - link arm
							04	TM HS GLS	Door leaf installation hinge side - guide rail
							05	TM HS GST	Door leaf installation hinge side - link arm
							06	TM BG GLS	Door leaf installation opposite hinge side - guide rail
R t	*	●	●	●	○	Drive type	00 Spring load closes		
t S						Door closer mode	00 Manual	Manual: The door only closes with the set door closing torque after manual opening, otherwise speed-controlled. Automatic: The door always closes with the set door closing torque regardless of the type of activation.	
							01		Automatic
HE						Manual interference	00 Not active	Sets, within the automatic closing, the option to manually intervene in the door movement from the SIO page. When active, the door can then be manually reopened.	
							01 ...10		Active
EP	-	-	-	-	-	Software version	e.g. SL, 10, 00 for DCU8 V1.0	or SF, 10, 01 for DCU8-F V1.0.1 for special solutions; Scroll forwards using "arrow downwards", menu has 3 levels Level 1 → SL; Level 2 → 10; Level 3 → 00 (00 -> standard / 01 for tailor-made solutions ...).	
n E								next level	

2. Menu

DPS	Service LEDs					Parameter	Setting values	Explanation
	5	4	3	2	1			
<i>OP</i>	-	-	-	-	-	Push And Go hold-open times	00 01 ... 10 12 ... 20 25 ... 50 60	in s; Hold-open time during passage with Push and Go.
<i>HO</i>	-	-	-	-	-	Hold-open times, manual	00 01 ... 10 12 ... 20 25 ... 50 60 No	in s; Hold-open time for manual opening; Values corresponding to the time. No automatic closing. If manual triggering is set, the value is limited to max. 10s.
<i>oH</i>	-	-	-	-	-	Hold-open time 2-leaf (Summer)	00 01 ... 10 12 ... 20 24 ... 50 60	in s; With 2-leaf drive for summer operation. (AU-So). Setting on GF control. Valid for KI, KA.
<i>dL</i>	-	-	-	-	-	Opening delay Day	00 ... 90	in s x 0,1; Delayed opening day: Time before the drive opens the door. Only applies in the automatic and exit only operating modes.
<i>dN</i>	-	-	-	-	-	Opening delay Night mode	00 ... 90	in s x 0,1; Delayed opening night mode: Time before the drive opens the door. Only applies in the night operating mode.
<i>SU</i>	-	-	-	-	-	Close delay GF	00 01 ... 10 ... 15s 99	EN 16005 Simultaneous closing of both leaves. EN 16005 The active leaf closes some time after the passive leaf. EN 16005 Active leaf does not close until after the passive leaf has closed completely. This value must be set in order to fulfil EN 16005. The value does not correspond to the time.
<i>FL</i>	-	-	-	-	-	Passive leaf start range	00 ... 10 ... 95	in % Start of the passive leaf at opening range of the active leaf, referenced to its maximum opening range.
<i>Rd</i>	-	-	-	-	-	Servo duration	00 ... 20	in s; Adjustable duration of the force support in servo mode.
<i>Ro</i>	-	-	-	-	-	Additional servo torque	00 ... 50	in Nm; Adjustable torque of force support for manual opening (limited in time through "servo duration").
<i>FR</i>	-	-	-	-	-	Servo fire alarm	00 ... 70	in Nm; Adjustable torque for power-support for fire alarm if 24 V applied to PE1 or PE2. Acts in addition to "additional servo torque". See servo function with fire alarm, chapter 28.2.1 "Servo function with additional torque servo fire alarm", p. 74.

DPS	Service LEDs					Parameter	Setting values	Explanation
	5	4	3	2	1			
<i>FP</i>	-	-	-	-	-	Trigger/reset manual	00...01...03	00: Inactive 01: Reset manual 02: Trigger manual 03: Trigger& reset manual
<i>dF</i>	-	-	-	-	-	Door closing torque	00, 16 ... 40 41 ... 70	in Nm; Door closing torque time after manual opening. <u>EN 16005</u> 0 ... 40: 41 ... 70: EN 16005 or sensor strips required.
<i>RB</i>	-	-	-	-	-	Wall blanking	00 ... 01 ... 99	00: No wall blanking. The range of application for the wall blanking of the safety sensor open is taught during commissioning and can be corrected here. Maximum opening range of the door = 99.
<i>LE</i>	*	●	●	●	●	Start teaching ->1 leaf Teach	Start/terminate	Teaching a 1-leaf system. For the procedure, see chapter 22.2 "Teaching run", p. 66.
<i>L2</i>						Start teaching ->2 leaf Teach	Start/terminate	Teaching a 2-leaf system. For the procedure, see chapter 22.2 "Teaching run", p. 66.
<i>Er</i>	-	-	-	-	-	Current errors	EE	Display of the current faults in the fault memory. Delete with EE .
<i>oE</i>	-	-	-	-	-	Delete old faults	EE	Display of old faults in the fault memory. Delete with EE .
<i>CP</i>	**	○	○	○	●	Factory setting	cP	Reset all the values to the factory settings. The state is like after delivery. Values to standard setting, fault memory, position and opening angle are deleted. A teaching run and initialisation run are necessary.
<i>LP</i>	**	○	○	●	○	Standard values	dP	All values are set to the standard setting after acknowledgement. Position and opening angle are retained. Fault memory is deleted. A teaching run and initialisation run are not necessary.
<i>PP</i>	**	○	○	●	●	Reset DCU8		After acknowledgement the display jumps to 88. Position and opening angle are not deleted. The processor restarts. A teaching run is not necessary, an initialisation run is necessary.

* 1 flashing pulse + 0.9 s pause
** 2 flashing pulses + 0.7 s pause

3. Menu

DPS	Service LEDs					Parameter	Setting values	Explanation
	5	4	3	2	1			
05	-	-	-	-	-	Hold-open time KB	00 ... 01 ... 10 12 ... 20 25 ... 50 60	in s; Hold-open time after activation with KB.
0d	-	-	-	-	-	Dyn extension	00 no 01 yes	When actuated, the passage frequency is taken into account in the hold-open time. The door does not close as fast when passage requirements are increased.
56	*	o	o	•	•	Manual closing time	05 ... 06 ... 15 ... 25	in s; Closing time after manual opening or after automatic opening with set automatic door closing mode. Setting pursuant to the table in the Powerturn installation instructions.
dR	-	-	-	-	-	Back check	10 ... 12 ... 20 ... 25 ... 50 ... 60 ... 80	Application of the back check, referenced to maximum opening range (manual opening).
E0	-	-	-	-	-	Setting opening width	-9 ... 00 ... 09	in degrees; The value is only for fine adjustment. The value is taught during the teaching run and then corresponds to point 0. This allows it to be adjusted manually and, again, subsequently corresponds to point 0. The opening value can thus be manually adjusted step-by-step. Is not set in the factory setting.
EL	-	-	-	-	-	Reversing limit	00 ... 30 ... 90	In 0.1 degrees of the drive axle. Angle on the drive axle to fine-tune the tolerance in the closing position from which the drive attempts to close again. ► Set the value so that the door gap is as small as possible before the drive closes again.
02	-	-	-	-	-	Door opening	00 No 01 Yes	For doors without external loads such as wind or pressure, the parameter "free swing function" can be activated in order to enable optimum passage of the door.
0L						Move towards open	00 No 01 Obstruction Motor on 02 Obstruction Motor off	In the event of further opening attempts, the drive stops before the obstacle in the opening range. Drive pushes against the obstacle and turns motor gear unit off. Drive pushes against the obstacle and turns motor gear unit on.
EF	-	-	-	-	-	Number of leaves	01 1-leaf drive 02 2-leaf active 03 2-leaf passive	Parameter sets which of the door leaves the drive is installed on.
51	**	o	•	o	o	S11 contact type	00 Not used 02 Normally closed contact 04 Frequency	Parameter sets the use of the safety sensor close contact type.
53	**	o	•	o	•	S13 Contact type	00 Not used 02 Normally closed contact 04 Frequency	Parameter sets the use of the safety sensor open contact type.

DPS	Service LEDs					Parameter	Setting values		Explanation
	5	4	3	2	1				
E5	-	-	-	-	-	KB contact type	00 Not used 01 Normally open contact 02 normally closed contact		The input KB is active in the operating modes AU, LS and NA. With 2-leaf assemblies the mechanical contact can be connected to the active leaf control or to the passive leaf control. On activation the active leaf opens and, if switched on, the passive leaf. Active in every mode of operation when the door is not closed.
E1	-	-	-	-	-	KI contact type	00 Not used 01 Normally open contact 02 Normally closed contact		The input KI is active in AU and LS mode. With 2-leaf assemblies the contact sensor inside can be connected to the active leaf control or to the passive leaf control. On activation the active leaf opens and, if switched on, the passive leaf. Active in every mode of operation when the door is not closed.
IR	-	-	-	-	-	KI delay	00 ... 90		in s x 0,1; only active when the door is in a closing position. Can be adjusted in steps of 0.1.
E0	-	-	-	-	-	KA contact type	00 Not used 01 Normally open contact 02 Normally closed contact		The input contact sensor outside is only active in the AU operating mode. With 2-leaf systems, the contact sensor outside can be connected to the active leaf control or to the passive leaf control. On activation, the active leaf opens and, if switched on, the passive leaf. Active in every mode of operation when the door is not closed.
RR	-	-	-	-	-	KA delay	00 ... 90		in s x 0,1; only active when the door is in a closing position. Can be adjusted in steps of 0.1.
E1	-	-	-	-	-	PE1 function	00 Not used 03 Selector switch Summer NO 04 Selector switch Winter NO 05 Sabotage NC 06 Closing position GF NO 08 P-KI activation NO 09 P-KA activation NO		For connection of a push button for the summer function. For connection of a push button for the winter function. Only for switching from 1-leaf to 2-leaf opening, not for actually opening the door. Permanently switched. If the contact is interrupted KB is not evaluated in the night mode of operation. All other functions remain the same. Closing position contact of the door leaf □ for 1-leaf door □ for 1-leaf door drive with manual passive leaf (door closer): Closing position contact of the active leaf □ for 2-leaf door: Active leaf contact to GF control, passive leaf contact to SF control Additional contact sensor (P-KI, P-KA). For connection of additional closing contacts.

DPS	Service LEDs					Parameter	Setting values	Explanation
	5	4	3	2	1			
						10	Switch function	NO On activation, the output of the push button is closed. With 2-leaf assemblies the push button can be connected to the active leaf control or to the passive leaf control. If the push button is connected to the passive leaf control, both door leaves open and close on activation of the switch function, even if the passive leaf control is switched off (bed opening). When the push button is pressed once, the drive opens the door. When the push button is pressed again, the drive closes the door.
						11	Switch function OHZ	NO On activation, the output of the push button is closed. With 2-leaf assemblies the push button can be connected to the active leaf control or to the passive leaf control. If the push button is connected to the passive leaf control, both door leaves open and close on activation of the switch function, even if the type of opening 1-leaf opening is active (bed opening). When the push button is pressed once, the drive opens the door and closes after the hold-open time has expired. When the push button is pressed again (within the hold-open time) the drive closes the door without waiting for the hold-open time to expire. If the push button is connected to the active leaf, the 1-leaf hold-open time is used with 1-leaf use, and the 2-leaf hold-open time with 2-leaf use.
						13	Reset push button	NO For restarting the drive. For the function, see chapter 29.3.9 "Reset DCU8", p. 93.
						14	Double push button	NO 1× press = 1-leaf opening 2× press = 2-leaf opening
						15	Stop normally open contact	NO For connection of a stop push button.
						16	Stop normally closed contact	NC
						19	Closing position SF	Closing position contact of the passive leaf with 1-leaf door with manual passive leaf (door closer).
						21	WC control	Connection of the internal button for the WC function.
						22	Fire alarm servo	NO If active, the additional servo torque function is set with the servo fire alarm torque is set for the duration.
						23	1-leaf opening	In 2-leaf systems, when the signal is active on the active leaf only 1 leaf is opened.
<i>E2</i>	-	-	-	-	-	Configurable input 2	00	Not used
<i>E3</i>	-	-	-	-	-	Configurable input 3	01	MPS For connection of a mechanical programme switch
							03	Selector switch Summer NO For connection of a push button for the summer function.
							04	Selector switch Winter NO For connection of a push button for the winter function. Only for switching from 1-leaf to 2-leaf opening, not for actually opening the door.

DPS	Service LEDs					Parameter	Setting values	Explanation
	5	4	3	2	1			
						05 Sabotage	NC	Permanently switched. If the contact is interrupted KB is not evaluated in the night mode of operation. All other functions remain the same.
						06 Closing position GF	NO	Closing position contact of the door leaf <ul style="list-style-type: none"> ▫ for 1-leaf door ▫ for 1-leaf door drive with manual passive leaf (door closer): Closing position contact of the active leaf ▫ for 2-leaf door: Active leaf contact to GF control, passive leaf contact to SF control
						07 Emergency lock. 20 kOhm	NO	The input can be used to connect an emergency lock switch. When the emergency lock switch is activated, the contact is closed and 17.83 V is applied to the input. The door closes and locks. The contact sensors KA, KI and KB, safety sensors SIS and SIO as well as obstacle detection are hidden. The door remains closed as long as the emergency lock signal is applied to the input.
						08 P-KI activation	NO	Additional contact sensor (P-KI, P-KA).
						09 P-KA activation	NO	For connection of additional closing contacts.
						10 Switch function	NO	see PE1
						11 Switch function OHZ	NO	see PE1
						12 Stop 12 kOhm	NO	For the connection of a stop push button with 12 kOhm terminating resistor.
						13 Reset push button	NO	For restarting the drive. Function as reset.
						14 Double push button	NO	1× press = 1-leaf opening 2× press = 2-leaf opening
						15 Stop normally open contact	NO	For connection of a stop push button.
						16 Stop normally closed contact	NC	
						19 Closing position SF		Closing position contact of the passive leaf with 2-leaf door with manual passive leaf (door closer).
						20 Stop 20 kOhm	NC	For the connection of a stop push button with 20 kOhm terminating resistor.
						21 WC control		Connection of the internal button for the WC function.
						22 Fire alarm servo		See PE1.
						23 1-leaf opening		In 2-leaf systems, when the signal is active on the active leaf only 1 leaf is opened.
						29 Fire alarm without SI		If active, the door opens and closes at safe speed, safety sensors are hidden.
<i>R1</i>	-	-	-	-	-	Configurable output 1	00 Not used	
<i>R2</i>	-	-	-	-	-	Configurable output 2	01 Gong	If KA is triggered.
						02 Fault normally open contact		The function is used for fault messages, e.g. to an on-site building control centre. The contact closes or opens respectively if the control determines a fault.
						03 Fault normally closed contact		

DPS	Service LEDs					Parameter	Setting values	Explanation
	5	4	3	2	1			
							04 Fault MPS	The function is used to switch the fault LED at the MPS. The contact closes if the control determines a fault. When maintenance is due, the output is switched cyclically, the fault LED on the MPS flashes.
							05 Warning signal	The function is used to cyclically switch an activator on/off while the door is opening or closing.
							06 Electric strike	For connection of an additional electric strike. Function in accordance with parameters "Electric strike type".
							08 Closed locked	The function is used to signal the door status, e.g. to a building control centre.
							09 Closed	
							10 Not closed	
							11 Open	
							12 Off	
							13 Night mode	
							14 Exit only	
							15 Automatic	
							16 Hold open	
							17 Light control	The function is used to activate a light controlling device which, for example, switches on the entry illumination as soon as a contact sensor (KI, KA, KB, SIS+KI, SIS+KA) is activated or the door is opened manually.
							18 Day/night mode changeover	The function is used to signal the day mode of operation to a customer building control centre. The output switches to GND if the mode of operation LS, AU 1-leaf, DO, or AU 2-leaf is set.
							19 Not used	
							20 Maintenance due	The function is used to signal the door status, e.g. to a building control centre.
							21 Holding magnet GF	To set the active leaf holding magnet.
							22 Holding magnet SF	To set the passive leaf holding magnet.
							24 WC timeout	For connection of a lamp or a signal to indicate when the 30-minute timer has expired for the WC function.
							25 Electric strike	NO For connection of a fail-secure electric strike.
							26 Electric strike	NC For connection of a fail-safe electric strike.
<i>FO</i>	-	-	-	-	-	Opening force	01 ... 15 ... 25	×10 N; Static force at the main closing edge opening.
<i>FC</i>	-	-	-	-	-	Closing force	01 ... 15 ... 25	×10 N; Static force at the main closing edge closing.
<i>bh</i>	-	-	-	-	-	Obstacle	01 ... 06 ... 20	×0.1 s; Time for which the drive pushes against an obstacle with the set static force.
<i>OF</i>	-	-	-	-	-	Opening retention force	00 ... 01 ... 07	×10 N; Constant force at the main closing edge in open position.

DPS	Service LEDs					Parameter	Setting values	Explanation
	5	4	3	2	1			
<i>CF</i>	-	-	-	-	-	Closing retention force	00 ... 01 ... 07	×10 N; Constant force at the main closing edge in closed position.
<i>FS</i>	-	-	-	-	-	Closing position force	00 ... 05 ... 15	×10 N, force acts after the end of the latching action in the closed position. Manual opening is more difficult during the set time. The greater the force set, the longer the duration. Examples: for 10 N=0.5 s, for 150 N = 2 s
<i>BR</i>	-	-	-	-	-	Basic function	01 Yes	The drive is in automatic mode.
<i>rr</i>	-	-	-	-	-	Bolt contact type	01 Normally open contact 02 Normally closed contact	Feedback e.g. of a motor lock.
<i>SH</i>	-	-	-	-	-	SIO manual	00 Not active 01 Active	SIO not active during manual opening. SIO active during manual opening.
<i>SS</i>	-	-	-	-	-	SIS manual	00 Not active 01 Active	SIS not active during closing after manual opening. SIS active during closing after manual opening.
<i>PH</i>	-	-	-	-	-	Manual rev. closing	00 Not active 01 Active	Reversing in the event of an obstacle within closing following manual opening: not active. Reversing in the event of an obstruction within closing following manual opening: active.
<i>PR</i>	-	-	-	-	-	Auto rev. closing	00 Not active 01 Active	Reversing in the event of an obstruction within closing following automatic opening: not active. Reversing in the event of an obstruction within closing following automatic opening: active.
<i>SB</i>	-	-	-	-	-	ECO mode	00 Not active 01 Active	The 24V supply voltage (24SENS) at terminal 4 is switched off after switchover to the modes of operation DO and OFF (after <10s) and NA (after 10 min). Note: Activation via access control of KB in the event of NA, as well as closing the door when switching from DO to AU, requires a few seconds, as the system first has to boot up.
<i>BZ</i>	-	-	-	-	-	Braking force	01 ... 13 ... 14	Braking force in de-energised operation; e.g. to stop the door from slamming shut. Set it so that the door closes in 5 s, see chapter 23 "De-energised operation", p. 71.
<i>SP</i>	-	-	-	-	-	Language	00 german 01 english 02 french 03 swedish	Language of the drive.
<i>CS</i>	-	-	-	-	-	Delete maintenance	cS	Reset maintenance counter, switch off service LED. After acknowledgement the display switches between CS → cS
<i>BS</i>	-	-	-	-	-	Operating Duration	Co Total no. of cycles/100 CH No. of manual cycles/100 Ho Operating hours/4 So Operating hours/4 to next service	Display 6-digits each. Scroll forwards with "downward arrow".
<i>nS</i>	-	-	-	-	-	no Service		If the service app is active, the service mode is blocked via DPS.

* 1 flashing pulse + 0.9 s pause

** 2 flashing pulses + 0.7 s pause

30 Fault messages

30.1 Fault messages ST220 and DPS

30.1.1 Fault display

On the DPS

- Currently queued fault messages are displayed on the display programme switch in cycles. In addition, they are also entered in the E_r and aE fault memories.
- The mode of operation is displayed for 5 s, the fault message for 2 s.
- Individual faults are indicated by the fault ID.
- If the faults are group faults, only the main fault number is indicated e.g. 22.

On the control unit ST220

- Faults are shown using the text form of the fault names.
Fault example: SIS SF

On the operating modes push button

- If the control has not been taught at this point, the operating modes display LED lights up yellow (continuous light).
- If the control has not been initialised yet, the operating modes display LED lights up in the colour of the current mode of operation, periodically interrupted by two short flashing impulses (1 Hz).
- If one or more faults are queued, the operating modes display LED flashes quickly (10 Hz.) in the colour of the current mode of operation.
- In the OFF mode of operation, there is no fault display on the operating modes display LED.

30.1.2 Fault messages

Fault no.	Message on the DPS	Message on the ST220	Fault description
01	01	24 V missing	Control faulty, short circuit at 24 V.
03	03	230 V fault	Power failure, 230 V group fault.
		230 V low voltage	230 V low voltage.
		230 V high voltage	230 V high voltage.
07	07	Fire alarm	Group fault fire alarm.
		Fire alarm F-board	Smoke detector or manual trigger switch has triggered.
		Fire alarm man GF	Manual triggering door leaf GF.
		Fire alarm man SF	Manual triggering door leaf SF.
09	09	Fire alarm PE	Group fault fire alarm at configurable input.
		Fire alarm without SI	Fire alarm without suppression of the safety sensors active.
		Fire alarm servo	Fire alarm with increased servo torque active.
		Line fault PE	Fault in the line monitoring for fire alarm with suppression of the safety sensors.
10	10	Rotary encoder GF	Group fault rotary encoder.
		Rotary encoder model	Rotary encoder displays fault.
		Edge counter	Error in identifying the rotary encoder edges.
		Position check	Rotary encoder position error.
		Fault direction	Direction of rotation of motor gear unit or rotary encoder is incorrect.
11	11	Motor gear unit 1 short	Motor current too large.
12	12	Motor gear unit 1	Motor gear unit defective.
13	13	SIS1 defective	Safety sensor close active leaf, group fault.
		Permanent activation	Safety sensor close GF" activated for more than 4 min.
		Testing	Error in testing safety sensor close GF.

Fault no.	Message on the DPS	Message on the ST220	Fault description
14	<i>14</i>	MPS	Inconsistent state at the PS inputs or line break MPS.
15	<i>15</i>	Comm. DPS	No communication between control - display programme switch.
16	<i>16</i>	Locking mechanism	Electric strike does not block.
17	<i>17</i>	Unlocking	Electric strike does not trigger.
		TOE short-circuit	Faulty electric strike.
		TOE relay	Faulty electric strike relay at DCU800.
19	<i>19</i>	SIS SF fault	Safety sensor close passive leaf, group fault.
		Permanent activation	Safety sensor close SF" activated for more than 4 min.
		Testing	Error in testing safety sensor close SF.
22	<i>22</i>	Mech. fault GF	A mechanical fault has occurred at the active leaf; group fault.
		Rotate angle	A cam skip has been detected.
		Fault solenoid valve	The solenoid valve of the energy storage device is defective.
23	<i>23</i>	Mech. fault SF	A mechanical fault has occurred at the passive leaf; group fault.
		Rotate angle	A cam skip has been detected.
		Fault solenoid valve	The solenoid valve of the energy storage device is defective.
25	<i>25</i>	Teaching run fault GF	Teaching run group fault, teaching run invalid.
		Latching action switch	Teaching run invalid, e.g. incorrectly set latching action switch.
		Teach obstacle	Obstacle of the door leaf during the teaching procedure.
		Teaching time- out	Time-out expired within 60 s of teaching.
26	<i>26</i>	Teaching run fault SF	Passive leaf teaching run group fault, teaching run invalid.
		Latching action switch	Teaching run invalid, e.g. incorrectly set latching action switch.
		Teach obstacle	Obstacle of the door leaf during the teaching procedure.
		Teaching time- out	Time-out expired within 60 s of teaching.
28	<i>28</i>	Relay DCU800	Motor relay defective.
29	<i>29</i>	SIO SF fault	Safety sensor open passive leaf, group fault.
		Permanent activation	Safety sensor open SF activated for more than 4 min.
		Testing	Error in testing safety sensor open SF.
32	<i>32</i>	Sabotage	Sabotage active.
35	<i>35</i>	Permanent activation PE1	Expected configuration as MPS, sabotage, stop, emergency lock.
36	<i>36</i>	Permanent activation PE2	Expected configuration as MPS, sabotage, stop, emergency lock.
37	<i>37</i>	Permanent activation KI	Movement detector defective or activation > 4 min.
38	<i>38</i>	Permanent activation PE3	Expected configuration as MPS, sabotage, stop, emergency lock.
39	<i>39</i>	Permanent activation KA	Activation longer than 4 min.
40	<i>40</i>	Permanent activation KB	Activation longer than 4 min.
41	<i>41</i>	SIO 1	Safety sensor open active leaf, group fault.
		Permanent activation	Safety sensor open GF activated for more than 4 min.
		Testing	Error in testing safety sensor open GF.
42	<i>42</i>	Emergency lock	Group fault emergency lock.
		Activation active	If the function is active via PE.
		Push button defective	If the push button for the function is detected as defective.

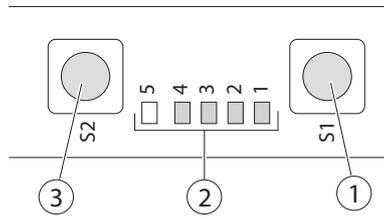
Fault no.	Message on the DPS	Message on the ST220	Fault description
44	44	Input stop	Stop is active.
45	45	Motor gear unit hot	Motor gear unit or control temperature higher than 95 °C.
46	46	T-sensor motor gear unit	Motor temperature sensor defective.
47	47	T-sensor ctrl.	Control temperature sensor is defective.
48	48	Overtemp	Motor gear unit or control temperature higher than 105 °C.
51	51	24 V missing SF	Control defective passive leaf.
53	53	230 V error SF	230 V passive leaf group fault.
54	54	Comm. DPS NT	Communication error DPS NT.
57	57	Fire alarm SF	Smoke detector active passive leaf.
60	60	Ctrl. DCU800	Internal control fault, group fault for active leaf.
		EEPROM value	–
		EEPROM comparison	–
		Fault current measurement	Error in motor current measurement.
		EEPROM time-out	–
		Quartz tolerance	–
		RAM test	–
		ROM CRC test	–
		VCC test	–
		Quartz failure	–
		Motor gear unit resistance	–
		Comm. M1-M2	–
		Wrong HW/SW combination	–
63	63	SW version	Active leaf and passive leaf have different software versions.
65	65	Comm. SF-GF	No communication active leaf/passive leaf control.
66	66	Locking mechanism SF	Electric strike not blocking (passive leaf).
67	67	Unlocking SF	Electric strike not triggering (passive leaf).
70	70	Ctrl. DCU800 SF	Internal control fault, group fault such as fault 60. For detail, log into SF.
71	71	Motor gear unit SF short	Motor current too large.
72	72	Motor gear unit SF	Motor gear unit defective.
74	74	Rotary encoder SF	Rotary encoder signals faulty.
75	75	DCU800 hot	Passive leaf drive, motor gear unit or control temperature higher than 95 °C.
76	76	Sensor motor gear unit SF	Motor temperature sensor defective.
77	77	T-sensor SF	Control temperature sensor is defective.
78	78	Overtemp SF	Motor gear unit or control temperature higher than 105 °C.
79	79	Relay SF	Motor relay defective, passive leaf.
	X.X	Position	Leaf position unknown (dot on left display).
	X X.	Maintenance	Maintenance requirement (number of cycles, operating hours, dot on right display).
	B . B .	DPS	No communication with control - display programme switch.
	--	DPS	Operation at programme switch.

Fault no.	Message on the DPS	Message on the ST220	Fault description
00		DPS	Release operation at programme switch.
00		DPS	Change in mode of operation: not possible using programme switch (internal PS not set to 0, or MPS is parameterised).
r5		Reset	On starting the teaching procedure: Reset switch not pressed or 24 V RSZ missing.
r5		DPS	No service possible if another service tool is active.

30.2 Fault messages on the service button LEDs

- Fault messages of fault groups are displayed on the service button LEDs. The exact fault can be determined using the fault number in chapter 30.1.2 "Fault messages", p. 107.
- For the service button LEDs, LED 5 flashes at 10 Hz.

- 1 Service key S1
- 2 Service LEDs
- 3 Service key S2



Display service button LEDs					Designation of the fault group	Fault no. in chapter 30.1.2 "Fault messages", p. 107.
5	4	3	2	1		
*	○	○	○	●	Alarm	07, 57
*	○	○	●	○	Power failure	03, 53
*	○	○	●	●	Drive too hot	45, 46, 48, 75, 76, 78
*	○	●	○	○	SIO	29, 41
*	○	●	○	●	Mechanical faults	22, 23
*	○	●	●	○	SIS	13, 19
*	○	●	●	●	Locking mechanism	16, 17, 66, 67
*	●	○	○	○	Motor gear unit	10, 11, 12, 71, 72, 74
*	●	○	○	●	Control unit	01, 28, 47, 51, 60, 63, 70, 77, 79
*	●	○	●	○	Communication	15, 54
*	●	○	●	●	Activation	14, 35, 36, 37, 38, 39, 40, 44, 73
-	-	-	-	-	No operating voltage	-

- LED off
- LED on
- * LED flashes at 10 Hz

31 Disposal and accessories

31.1 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, cover, deflection pulleys, slide nuts, ...)
 - Iron (drivers, screws, ...)
 - Plastic
 - Electronic components (bolt, motor gear unit, control unit, transformer, sensors, ...)
 - Cables

The parts can be disposed of at the local recycling depot or by a scrap recycling company.

- Rechargeable batteries contain pollutants and heavy metals. Do not dispose of these with household waste.
Hand in rechargeable batteries to your local recycler, too.

31.2 Accessories

Mat. no.	Designation	relevant chapter
024467	Additional contact	16.1 "Programme switch", p. 47.
024740	Retention magnet MA 500 with counterplate	13 "Electric strike/motor lock", p. 41.
081476	Safety sticker	1.1 "Safety precautions", p. 6.
087261	Service terminal ST220	29.1 "Service terminal ST220", p. 76.
092777	Reed switch	17.1 "Powerturn IS/TS: Active leaf automated, passive leaf with door closer", p. 52.
099575	Remote control	7.1 "Radar movement detector GC 302 R", p. 22.
100061	Remote control	5.2 "Sensor GC 334/GC 335", p. 16. 7.3 "Non-contact activation sensor GC 307+", p. 23.
103352	24 V relay	12.2.1 "Gong", p. 38. 12.2.2 "Fault", p. 38. 12.2.7 "Day/night mode changeover", p. 39. 12.2.8 "Maintenance due", p. 40.
103601	IQ Lock EL 9235	13 "Electric strike/motor lock", p. 41.
103699	IQ Lock EL 9245	13 "Electric strike/motor lock", p. 41.
103700	IQ Lock EL 7255	13 "Electric strike/motor lock", p. 41.
103701	IQ Lock EL 7265	13 "Electric strike/motor lock", p. 41.
106571	IQ Lock EL 7280	13 "Electric strike/motor lock", p. 41.
106572	IQ Lock EL 7210	13 "Electric strike/motor lock", p. 41.
112321	Spot finder	5.1 "Pair of safety sensor strips GC 338", p. 13.
113226	MPS, AS500	16.1 "Programme switch", p. 47.
113227	MPS-ST, with key, AS500	16.1 "Programme switch", p. 47.
114077	Plastic elbow switch, stainless steel	15 "WC control", p. 45.
114078	Plastic elbow switch, white	15 "WC control", p. 45.
115013	IQ Lock EL 9240	13 "Electric strike/motor lock", p. 41.
115293	Free-wheeling diode 1N4007	12.1.5 "Electric strike", p. 35. 12.2.5 "Electric strike", p. 39. 13.1 "24 V DC electric strike supplied on drive side", p. 42.
115339	Rain cover	7.1 "Radar movement detector GC 302 R", p. 22.
115384	Ceiling installation kit	7.1 "Radar movement detector GC 302 R", p. 22.
115934	SLE220 indicator lamp, flush-mounted, AS500, AW	15 "WC control", p. 45.
115939	SLH220, signal horn, ASW500, AW, complete	15 "WC control", p. 45.
116266	Manual trigger switch	"18 Powerturn F and Powerturn F/R on fire protection doors" on page 55.

Mat. no.	Designation	relevant chapter
117996	SCT key switch, single-pole, flush-mounted, AS500 without Euro profile half cylinder	16.1 "Programme switch", p. 47.
118417	MPS-D, AS500	16.1 "Programme switch", p. 47.
118418	MPS-D-ST, with key, AS500	16.1 "Programme switch", p. 47.
119898	Stainless steel elbow switch	15 "WC control", p. 45.
119952	CAN interface DCU103	4 "Supply terminals", p. 10.
120048	System cable	17.2 "Two automated door leaves", p. 52.
120061	System cable	17.2 "Two automated door leaves", p. 52.
120503	Surface-mounting cap, single, AS500	16.1 "Programme switch", p. 47.
120880	Manual trigger switch	"18 Powerturn F and Powerturn F/R on fire protection doors" on page 55.
124087	GC 302 R black	7.1 "Radar movement detector GC 302 R", p. 22.
124088	GC 302 R according to RAL	7.1 "Radar movement detector GC 302 R", p. 22.
128582	Stainless steel elbow switch LS 990, surface-mounted	15 "WC control", p. 45.
128583	Stainless steel elbow switch LS 990, flush-mounted	15 "WC control", p. 45.
128609	Surface-mounting cap, double, AS500	16.1 "Programme switch", p. 47.
131209	1-channel remote control WTH-1	9 "Radio control", p. 26.
131210	2-channel remote control WTH-2	9 "Radio control", p. 26.
131211	4-channel remote control WTH-4	9 "Radio control", p. 26.
131212	Transmitting module WTM	9 "Radio control", p. 26.
135170	Radio reception board WRB-5	9 "Radio control", p. 26.
144631	IQ eStrike A5300--B	13.1 "24 V DC electric strike supplied on drive side", p. 42.
145182	IQ eStrike A5000--E	13.1 "24 V DC electric strike supplied on drive side", p. 42.
151524	DPS with OFF, flush-mounted AS500, alpine white	16.1 "Programme switch", p. 47.
155810	DPS with OFF and SCT, without Euro profile half cylinder, flush-mounted, AS500, alpine white	16.1 "Programme switch", p. 47.
157266	Adapter cable	29.1 "Service terminal ST220", p. 76.
166272	230 V T-distributor	19 "Mains connection", p. 61.
180408	Reset switch	"18 Powerturn F and Powerturn F/R on fire protection doors" on page 55.
193226	GC 307+ standard flush-mounted	7.3 "Non-contact activation sensor GC 307+", p. 23. 8.3 "Non-contact activation sensor GC 307+", p. 25. 15.1 "Non-contact sensor GC 307+ WC", p. 46.
195727	GC 307+ standard surface-mounted	7.3 "Non-contact activation sensor GC 307+", p. 23. 8.3 "Non-contact activation sensor GC 307+", p. 25. 15.1 "Non-contact sensor GC 307+ WC", p. 46.
203603	GC 308 R, black	7.4 "Radar movement detector GC 308 R", p. 23. 8.4 "Radar movement detector GC 308 R", p. 25.
203604	GC 308 R, white	7.4 "Radar movement detector GC 308 R", p. 23. 8.4 "Radar movement detector GC 308 R", p. 25.
203605	GC 308 R, stainless steel	7.4 "Radar movement detector GC 308 R", p. 23. 8.4 "Radar movement detector GC 308 R", p. 25.
203606	GC 308 R, according to RAL	7.4 "Radar movement detector GC 308 R", p. 23. 8.4 "Radar movement detector GC 308 R", p. 25.

Germany
GEZE GmbH
Niederlassung Süd-West
Tel. +49 (0) 7152 203 594
E-Mail: leonberg.de@geze.com

GEZE GmbH
Niederlassung Süd-Ost
Tel. +49 (0) 7152 203 6440
E-Mail: muenchen.de@geze.com

GEZE GmbH
Niederlassung Ost
Tel. +49 (0) 7152 203 6840
E-Mail: berlin.de@geze.com

GEZE GmbH
Niederlassung Mitte/Luxemburg
Tel. +49 (0) 7152 203 6888
E-Mail: frankfurt.de@geze.com

GEZE GmbH
Niederlassung West
Tel. +49 (0) 7152 203 6770
E-Mail: duesseldorf.de@geze.com

GEZE GmbH
Niederlassung Nord
Tel. +49 (0) 7152 203 6600
E-Mail: hamburg.de@geze.com

GEZE Service GmbH
Tel. +49 (0) 1802 923392
E-Mail: service-info.de@geze.com

Austria
GEZE Austria
E-Mail: austria.at@geze.com
www.geze.at

Benelux
GEZE Benelux B.V.
E-Mail: benelux.nl@geze.com
www.geze.be
www.geze.nl

Bulgaria
GEZE Bulgaria - Trade
E-Mail: office-bulgaria@geze.com
www.geze.bg

China
GEZE Industries (Tianjin) Co., Ltd.
E-Mail: chinasales@geze.com.cn
www.geze.com.cn

GEZE Industries (Tianjin) Co., Ltd.
Branch Office Shanghai
E-Mail: chinasales@geze.com.cn
www.geze.com.cn

GEZE Industries (Tianjin) Co., Ltd.
Branch Office Guangzhou
E-Mail: chinasales@geze.com.cn
www.geze.com.cn

GEZE Industries (Tianjin) Co., Ltd.
Branch Office Beijing
E-Mail: chinasales@geze.com.cn
www.geze.com.cn

France
GEZE France S.A.R.L.
E-Mail: france.fr@geze.com
www.geze.fr

Hungary
GEZE Hungary Kft.
E-Mail: office-hungary@geze.com
www.geze.hu

Iberia
GEZE Iberia S.R.L.
E-Mail: info.es@geze.com
www.geze.es

India
GEZE India Private Ltd.
E-Mail: office-india@geze.com
www.geze.in

Italy
GEZE Italia S.r.l. Unipersonale
E-Mail: italia.it@geze.com
www.geze.it

GEZE Engineering Roma S.r.l.
E-Mail: italia.it@geze.com
www.geze.it

Korea
GEZE Korea Ltd.
E-Mail: info.kr@geze.com
www.geze.com

Poland
GEZE Polska Sp.z o.o.
E-Mail: geze.pl@geze.com
www.geze.pl

Romania
GEZE Romania S.R.L.
E-Mail: office-romania@geze.com
www.geze.ro

Russia
OOO GEZE RUS
E-Mail: office-russia@geze.com
www.geze.ru

Scandinavia – Estonia
GEZE Scandinavia AB eesti filial
E-Mail: estonia@geze.com
www.geze.ee

Scandinavia – Finland
GEZE Scandinavia AB Filial Finland
E-Mail: finland@geze.com
www.geze.fi

Scandinavia – Latvia
GEZE Scandinavia AB Latvijas filiāle
E-Mail: latvia@geze.com
www.geze.lv

Scandinavia – Lithuania
GEZE Scandinavia AB Filial Lietu.
E-Mail: lithuania@geze.com
www.geze.lt

Scandinavia – Sweden
GEZE Scandinavia AB
E-Mail: sverige.se@geze.com
www.geze.se

Scandinavia – Norway
GEZE Scandinavia AB avd. Norge
E-Mail: norge.se@geze.com
www.geze.no

Scandinavia – Denmark
GEZE Danmark
E-Mail: danmark.se@geze.com
www.geze.dk

Singapore
GEZE (Asia Pacific) Pte, Ltd.
E-Mail: gezesea@geze.com.sg
www.geze.com

South Africa
GEZE South Africa (Pty) Ltd.
E-Mail: info@gezesa.co.za
www.geze.co.za

Switzerland
GEZE Schweiz AG
E-Mail: schweiz.ch@geze.com
www.geze.ch

Türkiye
GEZE Kapı ve Pencere Sistemleri
E-Mail: office-turkey@geze.com
www.geze.com

Ukraine
LLC GEZE Ukraine
E-Mail: office-ukraine@geze.com
www.geze.ua

United Arab Emirates/GCC
GEZE Middle East
E-Mail: gezeme@geze.com
www.geze.ae

United Kingdom
GEZE UK Ltd.
E-Mail: info.uk@geze.com
www.geze.com

GEZE GmbH
Reinhold-Vöster-Straße 21–29
71229 Leonberg
Germany

Tel.: 0049 7152 203 0
Fax.: 0049 7152 203 310
www.geze.com

