

Powerturn	Original operating instructions EN User manual
Valid for variants: Powerturn (1-leaf/2-leaf) Powerturn F (1-leaf) Powerturn F-IS (2-leaf) Powerturn F/R (1-leaf/2-leaf)	

156539-01



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## Symbols and illustrations

#### Warning notices

Warning notices are used in these instructions to warn you of property damage and personal injury.

- Always read and observe these warning notices.
- ▶ Follow all measures that are labelled with the warning symbol and warning word.

Warning	Warning word	Meaning
symbol		

CAUTION Danger to persons. Non-observance can result in minor injuries.

#### More symbols and illustrations

In order to illustrate proper operation, important information and technical information is highlighted.

Symbol	Meaning
0	means "Important Information"; information to prevent property damage, to understand or optimise the operation sequences
1	means "Additional Information"
	Symbol for an action: There is something you must do here. ▶ Observe the order of multiple operational steps.

## Product liability

According to a manufacturer's liability for his products, as defined under product liability law, the information contained in this brochure (product information and proper usage, misuse, product performance, product maintenance, information and instructional obligations) must be observed. Non-observance releases the manufacturer from his liability.

## Special cases

- In certain cases, such as with
- Special wiring
- special function settings (parameters)
- Special software

deviations from the information given in this user manual may occur.

▶ If this is the case, please ask the service technician responsible.

# 1 General safety precautions

- Carefully read and abide by this user manual before commissioning the door. In addition, always observe the following safety precautions:
- <sup>o</sup> Operating, maintenance and repair conditions specified by GEZE must be observed.
- The commissioning, prescribed installation, maintenance and repair work must be performed by properly trained personnel authorised by GEZE.
- <sup>a</sup> GEZE shall assume no liability for damage caused by unauthorised changes to the system.
- The owner is responsible for safe operation of the system. If safety equipment is misaligned, thus preventing it from fulfilling its intended purpose, further operation is not permissible. The service technician must be informed without delay.
- GEZE makes no guarantee for combinations with third-party products. Furthermore, only original GEZE parts may be used for repair and maintenance work.
- <sup>a</sup> The connection to the power supply must be made by a professional electrician.
- The main connection and protective conductor test must be performed according to DIN VDE 0100-610.
- Use a customer-accessible 16-A overload cut-out that disconnects the system from the power supply as the line-side disconnecting device.
- Attach safety stickers to glass door leaves.
- Protect the programme switch against unauthorised access.
- In compliance with Machinery Directive 2006/42/EC, a risk analysis must be performed and the door system identified in accordance with CE Marking Directive 93/68/EEC before the door system is commissioned.
- Observe the current status of directives, standards and country-specific regulations, especially:
  - ASR A1.7 "Directives for doors and gates"
  - DIN 18650 "Building hardware Powered pedestrian doors"
  - DIN VDE 0100-610 "Erection of low-voltage installations"
  - DIN EN 60335-2-103 "Safety of electrical devices for home use and similar purposes; special requirements for drives, for gates, doors and windows"
  - Accident-prevention regulations, especially BGV A1 "General regulations" and BGV A2 "Electrical systems and equipment"

### 1.1 Terms

Term	Statement
Hinge side	The side of the door where the hinges from which the door leaf is suspended are located. Usually that side of the door located in the opening direction.
Opposite hinge side	The side of the door that lies opposite the hinge side. Usually that side of the door located in the closing direction.
Active leaf	The main leaf of a double-leaf door. The active leaf must open as the first door leaf and close as the last door leaf when the door is used.
Fixed leaf	The secondary leaf of a double-leaf door. When the door is used, the fixed leaf may not open until the active leaf has left the closing position and must close again as the first door leaf.
Inside contactor (KI)	Button, switch or movement detector for controlling the door drive. The contactor is located within the room enclosed by the door. Control function in the AUTOMATIC and SHOP CLOSING-TIME operating modes. The contactor does not have any function in the NIGHT/OFF operating mode.
Outside contactor (KA)	Button, switch or movement detector for controlling the door drive. The contactor is located outside the room enclosed by the door. Control function in the AUTOMATIC operating mode. The contactor does not have any function in the SHOP CLOSING-TIME and NIGHT/OFF operating modes.
Contactor authorised (KB)	Access control function (for example key-operated switch or card reader) used by authorised persons to control the door drive. The control function is active in the AUTOMATIC, SHOP CLOSING-TIME and NIGHT/OFF operating modes.
Contactor with current impulse function	Button for opening and closing the door. Control function only in the AUTOMATIC and SHOP CLOSING-TIME operating modes. The door is opened automatically when the button is first pressed and closed again automatically when the button is pressed the second time. The function can be activated during commissioning by setting parameters using the display programme switch, ST 220 or GEZEconnects. If the contactor is connected to the fixed leaf control system by means of the "current impulse" function, both door leaves open when activated, even when the fixed leaf control system is deactivated.



Term	Statement	
Push&Go	When the door is pressed manually out of the closing position with an activated Push & Go function in the AUTOMATIC operating mode, the door opens automatically as soon as a specific adjustable opening angle is exceeded.	
Open safety sensor (OSS)	Presence detector (e.g. active infrared light sensor) for protecting the swinging range of the door in the opening direction. As a rule the sensor is located on the hinge side of the door on the door leaf.	
Safety sensor close (SIS)	Presence detector (e.g. active infrared light sensor) for protecting the swinging range of the door in the closing direction. As a rule the sensor is located on the opposite hinge side of the door leaf.	
Emergency stop	Self-locking switch with which immediate stopping of the door drive can be triggered in case of danger. The drive remains in its current position until the user releases the emergency stop switch again, thus terminating the emergency stop situation.	
Door closing sequence selec- tor	Electrical door closing sequence selector In normal operation of double-leaf door drives, the closing sequence of the door leaves is controlled by the control units of the door drives, with the fixed leaf being closed first. The active leaf remains in the open position until the fixed leaf has reached the closed position, then the active leaf begins to close. Integrated door closing sequence selector (-IS) The closing sequence is controlled mechanically in the case of a power failure at dou- ble-leaf door systems with Powerturn F-IS. The door leaves are closed by means of the power storage of the drives, with the moveable leaf being kept open by the integrated mechanical close sequence control unit. When the fixed leaf has reached the closed position, it releases the active leaf by means of the mechanical elements of the door closing sequence selector so that it can also close completely.	
Electrical door opener	Open-circuit door opener Available as AC or DC door opener version. When the door drive is actuated, the door opener is activated by the control unit of the door drive provided the door is in the closed position. The door opener remains activated until the door has left the closed position. Static current DC door opener version. The door opener is switched off when the door drive is acti- vated provided the door is in the closed position. The door opener remains switched off until the door has left the closed position.	
Lock feedback	The lock feedback function is a contact integrated in the door catch that is activated when the door is locked mechanically by the tie bolt of the door lock. It signals to the control unit that the door is locked mechanically and can therefore not be opened by the door drive. In this case the control unit ignores the control commands of all the contactors.	
Reset	Button for restarting the drive after the operating voltage has been switched on or after a fire alarm has been terminated. When the button is pressed, the self-retention integrated in the drive is activated, causing the drive to be activated.	
Latching function	When the door is closed in a de-energised state, the door leaf is impeded by the lock latch of the door opener. To make sure the door can pass the lock latch safely during closing, an integrated limit switch is actuated in the drive once a specific opening angle has been reached, reducing the braking strength. The door accelerates and closes into the lock at increased speed. In an energised state, this function is regulated by the drive control unit.	

Powerturn

## 2.1 Types of installation and versions

- The door drive unit can be mounted in transom mounting at the lintel or in door panel mounting on the door panel.
- The door drive is available as 1-leaf or 2-leaf version.

### 2.2 Composition

The door system shown is only a schematic diagram. For technical reasons, we cannot show all of the possibilities here. The operating elements can be arranged individually.

#### Example: Door drive Powerturn, 1-leaf, transom installation



- 1 Door drive unit
- 2 Link arm or lever
- 3 Smoke switch control unit <sup>2)</sup>
- 4 Outside contactor (KA) (optional)
- 5 Contactor authorised (KB) (optional)
- 6 Smoke switch <sup>2)</sup>
- 7 Contact sensor inside (KI) (optional)
- 8 Display programme switch (optional)
  9 Key-operated switch for enabling the display programme switch (optional)
- 10 Emergency stop switch (optional)

- 11 Circuit breaker "CLOSE DOOR" <sup>2)</sup>
- 12 Electrical door opener (optional)
- 13 Inside
- 14 outside
- 15 Door handle with door lock (optional)
- 16 Safety sensor close (SIS) (optional)
- 17 Open safety sensor (OSS) (optional)
- 18 Door adapter cable (optional)
- 19 Reset push button
- 20 Bushing for service adapter ST 220
- 21 Operating modes key and display
- <sup>2)</sup> optional, in conjunction with Powerturn

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## 3 Operation

# 3.1 Functions

The set parameters of the drive functions may only be modified by properly trained persons.

The commissioning and setting or changing of door parameters and some special drive functions can be done using the display programme switch, ST 220 or GEZEconnects. Querying and modifying of the set drive parameters are described in the circuit diagram.

## 3.2 Normal operation

In certain cases, e.g. with special wiring, special function settings (parameters), special software, deviations from the information given in this manual can occur. If this is the case, please ask the service technician responsible.

In normal door operation, the door is automatically opened and closed.

What happens?	What does the door do?
A contactor (button, switch or movement detector) is triggered.	Door opens, waits the hold-open time and then closes.
Safety sensor close (SIS) is triggered when the door is open (e.g. light switch).	Door remains open.
Safety sensor close (SIS) is triggered while the door is clos- ing.	The door immediately opens again depending on the parameter adjustment.
Safety sensor open (SIO) is triggered while door is opening.	The door stops and remains in the position until the end of actuation (door opens) or until the end of the hold-open time (door closes).
Safety sensor open (SIO) is triggered when the door is closed.	Door remains closed.
A person moves toward the opened door and a movement detector is activated.	Door remains open.
A person moves toward the closing door and a movement detector is activated.	Door reopens immediately.
Door contacts an obstruction when opening.	Door stops, waits and attempts again to move to the open position at a reduced speed. Then the door closes again.
Door contacts an obstruction when closing.	Door reopens immediately, waits the hold-open time and then closes at a reduced speed.

#### Additional door functions

Which switch/button?	What does the switch/button do?
Emergency stop switch	The door stops immediately (in every operating mode) and holds the position until the emergency stop switch is unlocked.
Key-operated switch of the display programme switch	If a key-operated switch is connected to the display pro- gramme switch, the operation of the display programme switch can be locked or released with it.
Contactor authorised (KB) (e.g. outside key-operated switch)	Door opens once and closes after the hold-open time. The set operating mode is retained.

# 3.3 Operating modes key and display

#### Changing the operating mode (with single-leaf doors or active leaves)

Press the operating modes key (21) 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:

...  $\rightarrow$  OFF  $\rightarrow$  Night  $\rightarrow$  Shop closing  $\rightarrow$  Automatic  $\rightarrow$  Permanently open  $\rightarrow$  OFF  $\rightarrow$  Night  $\rightarrow$  ...

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

- In normal mode, the operating modes display lights up in the colour of the current mode of operation.
- If the control has not been taught at this point, the operating modes display lights up yellow (light on permanently).
- If the control has not been initialised yet, the operating modes display 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 pending, the operating modes display 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.
- If the parameter "switch-off internal operating modes key" AB is set, the integrated operating modes switch (21) is disabled and the integrated operating modes display (21) is switched off.
- If the setting is changed from enabled to disabled or vice versa, the operating modes display flashes yellow for 3 s – the setting has been accepted. Then the operating modes display is off.
- When the operating modes push button (21) is actuated again, the operating modes display (21) flashes for 3 s in red – operation is not accepted.

#### Changing the mode of operation (fixed leaves)

The drive on the fixed leaf is switched on and off using the on/off switch.

When the drive is switched on, the operating modes display (21) lights up in the colour of the mode of operation (see below).

If the drive is switched off, the operating modes display (21) does not light up.

Operating mode	Colour of the operating modes display (21)
OFF (off)	-
NA (night)	red
LS (shop closing)	white
AU (automatic)	green
DO (permanently open)	blue

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# 3.4 Mechanical programme switch (MPS) (optional)

• Additionally, it can be connected to the internal operating modes key.

At the mechanical programme switch, the system operating mode is selected and the corresponding programme is displayed. The mechanical programme switch is accessible for everyone without a key-operated switch.

The mechanical programme switch MPS-ST must be used for disabling.

The desired operating mode is selected by using the rotary switch.

Mechanical programme switch MPS

At the mechanical programme switch MPS-ST, the system operating mode is selected and the corresponding programme is displayed. Operation of the mechanical programme switch MPS-ST is only possible with the supplied key.

Disabling the mechanical programme switch MPS-ST:

Remove the key.

The desired operating mode is selected by using the key-operated rotary switch.



Mechanical programme switch MPS-ST with integrated key-operated switch

Operating condition	MPS MPS-ST	Explanatory notes
Automatic		Door opens and closes again.
		The inside and outside contactors are active.
<ul> <li>Opening of 2 leaves</li> </ul>		At 2-leaf systems:
		Switch to opening of 2 leaves in all operating modes.
		With MPS, MPS-ST
	♥▋♥	Select the opening of 2 leaves at the corresponding position.
<ul> <li>Opening of 1 leaf</li> </ul>		Switch to opening of 1 leaf in all operating modes:
	<b>II</b>	With MPS, MPS-ST
	<b>◆ </b> ◆	<ul> <li>Select the opening of 1 leaf at the corresponding position.</li> </ul>
Shop closing		Door only opens and closes if someone exits.
Deveragently an an		Deservemeine ener
Permanentiy open		Door remains open.
Night		Door opens and closes only when actuated using the key-operated switch
Fixed leaf On / Off	OFF	Door is enabled and can be moved by hand.



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# 3.5 Display programme switch (optional)

• Additionally, it can be connected to the internal operating modes key.

If a dot appears in the bottom right-hand part of the display, maintenance is due.

Notify a service technician.

If a dot appears in the middle of the display, the door has not yet been fully

initialised after the mains voltage has been switched on. Initialisation is carried out automatically when the drive opens and closes the door.





Display programme switch

Operating mode	Кеу	Display	Explanatory notes
Automatic		85	Door opens and closes again. Inside and outside contactors active.
<ul> <li>Opening of 2 leaves</li> </ul>	<b>▲┃↓ ↓ ↓</b>		<ul> <li>With 2-leaf Appendices</li> <li>Switch to opening of 2 leaves in all operating modes:</li> <li>Select the opening of 2 leaves at the corresponding position.</li> </ul>
<ul> <li>Opening of 1 leaf</li> </ul>	• <b>  </b> • <b> </b> + <b> </b> • <b> </b>		<ul> <li>With 1-leaf Appendices</li> <li>Switch to opening of 1 leaf in all operating modes:</li> <li>Select the opening of 1 leaf at the corresponding position.</li> </ul>
Shop closing		LS	Door only opens and closes if someone exits. Only inner contactor active.
Permanently open		do	Door remains open.
Night	C	nβ	Door opens and closes only when actuated using the key-operated switch
	OFF		Door is enabled and can be moved by hand.

#### Setting the language

The displayed language can be set in the service menu of the display programme switch.

Available languages: German, English, French and Italian.

#### Fault messages on the display

If a fault occurs in the door system, it is displayed on the display programme switch about every 10 seconds.

Read off the number of the fault message, note it down and notify the service technician.



# 4 Troubleshooting

Problem	Cause	Re	emedy
Door only opens and closes slowly	Obstruction in sliding path	•	Remove obstruction and check door leaf for ease of movement
	Safety sensor close (SIS) soiled		Clean the safety sensor close
	Safety sensor close (SIS) misaligned or defective		Notify a service technician
Door opens and closes	Obstruction in sliding path	►	Clear the obstruction
constantly	Light beams or reflections, e.g. reflective floor, falling rain	•	Check detection field of movement detector
	Misaligned movement detector		Check detection field of movement detector
Door only opens a crack	Obstruction in sliding path	•	Remove obstruction and check door leaf for ease of movement
Door does not open	Obstruction in sliding path		Remove obstruction and check door leaf for ease of movement
	Movement detector misaligned or defective (outside)	•	Check the movement detector. If neces- sary, notify a service technician
	Emergency stop actuated		Unlock emergency stop
	"Night" operating mode		Select a different operating mode
	"Shop closing-time" operating mode		Select "Automatic" operating mode
	Door locked mechanically		Unlock the door
	Door opener does not release		Notify a service technician
	Fire alarm active (only Powerturn F)		Press the Reset button
	Drive defective		Notify a service technician
Door does not close	Safety sensor close (SIS) soiled		Clean the safety sensor close (SIS)
	Safety sensor close (SIS) misaligned or defective		Notify a service technician
	Obstruction in sliding path	•	Remove obstruction and check door leaf for ease of movement
	Movement detector triggers constantly		Check the movement detector. If neces- sary, notify a service technician
	"Permanently open" operating mode	►	Select a different operating mode
	Current impulse button function controls		Terminate controlling by pressing the but- ton again
Display programme switch	Display programme switch is disabled		Actuate key-operated switch for release
cannot be operated	Display programme switch defective		Notify a service technician
Display programme switch displays <b>88</b>	Connection between display programme switch and control unit faulty		Notify a service technician
	Display programme switch or control unit defective		Notify a service technician
Display programme switch	Power failure		Check mains fuse
is dark	Connection between display programme switch and control unit faulty	•	Notify a service technician
	Display programme switch or control unit defective	•	Notify a service technician
Display of fault messages on the display programme switch	Fault in the door system	•	Note fault messages. Up to 10 different fault messages can occur in succession. The display changes about every 10 seconds.
			Notify a service technician.

# 5 Cleaning and maintenance

## ▲ CAUTION!

#### Danger of injury due to impact and crushing!

- ▶ Disconnect the drive from the 230 V mains network before carrying out cleaning work.
- Secure door leaves against accidental movement before carrying out cleaning work.
- Installation, maintenance and repair work must be performed by properly trained personnel authorised by GEZE.

## 5.1 Cleaning

What is to be cleaned?	How is it to be cleaned?
Safety sensor close (SIS) (e.g. light sensors)	Wipe with damp cloth
Glass surfaces	Wipe with a cold vinegar/water mixture; then dry.
Stainless surfaces	Wipe with soft cloth
Painted surfaces	Wipe with water and soap
Anodised surfaces	Wipe with non-alkaline potassium soap (pH value 5.57)
Display programme switch	Wipe with soft cloth. Do not use a cleaning agent

## 5.2 Service

The owner must ensure that the system functions properly. To guarantee perfect operation, the door system must be serviced regularly by a service technician.

Maintenance must be carried out at least once a year or according to the maintenance display on the display programme switch.

If a dot appears in the bottom right-hand part of the display, maintenance is due.

Notify a service technician.



GEZE offers maintenance contracts with the following services:

- Inspection of fastening elements for firm fit
- Performance of miscellaneous adjustment work
- Performance of operational checks
- Checking all the safety and control equipment of the door system
- Lubrication of all the moveable parts

### 5.3 Testing by a competent expert

In accordance with the "Guidelines for windows, doors and gates" (ASR A1.7 and GUV 16.10) Section 6, poweroperated doors must be inspected for safety by a trained professional before initial commissioning and at least once a year.

GEZE offers the following services:

Inspection and operational checks of all safety and control equipment in accordance with the requirements in the test log for power-operated windows, doors and gates; Sliding doors and sliding gates ZH 1/580.2 edition.

# 6 Technical data

3 25 s
5 25 s
230 V AC ±10 %
50 Hz
1
200 W
Fixed connection (installation cable or cable transition)
-
10 A slow-blow, 5×20 mm
33 V AC (46 V DC)
24 V DC ±5 %
1200 mA permanently 1800 mA briefly (2 s, duty ratio 30 %)
2.5 A; reversible
−15 +50 °C
IP30





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