

Powerturn

Valid for variants:

Powerturn (1-leaf/2-leaf)

Powerturn F (1-leaf)

Powerturn F-IS (2-leaf)

Powerturn F/R (1-leaf/2-leaf)

Powerturn IS/TS (2-leaf)

Powerturn F-IS/TS (2-leaf)

Powerturn F/R-IS/TS (2-leaf)

Original operating instructions

EN User manual

156539-03

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1 Introduction

1.1 Symbols and illustrations

Warning notices



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

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

Warning symbol	Warning word	Meaning
	CAUTION	Danger for individuals. Non-compliance can result in minor to medium injuries.

Further symbols and means of representation

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

Symbol	Meaning
	means "important note"; information about avoiding property damage
	means "additional Information" The user's attention should be drawn to important addition information. There is no danger to persons or property, but it is particularly useful to read the additional information carefully.
▶	Symbol for an action: This means you have to do something. ▶ If there are several actions to be taken, keep to the given order.

1.2 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.

1.3 Special cases

In certain cases, deviations from the information given in this user manual may occur. Examples:

- special wiring
- special function settings (parameters)
- special software
- ▶ Please contact the service technician responsible for further information.

1.4 More detailed information

Information about commissioning and service can be found in the following documents:

- Powerturn wiring diagram
- Powerturn installation instructions

1.5 Terms

Term	Explanation
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 facing the hinge side. Usually that side of the door located in the direction of closing movement.
Active leaf	The active leaf of a double-leaf door. When someone passes through the door, the active leaf must open as the first door leaf and close as the last door leaf.
Passive leaf	The secondary leaf of a double-leaf door. When the door is used, the passive leaf may not open until the active leaf has left the closing position and must close again as the first door leaf.
Activation device inside (KI)	Push button, switch or movement detector for activating the door drive. The activation device is located within the room enclosed by the door. Activation function in the AUTOMATIC and EXIT ONLY modes of operation. The activation device does not have any function in the NIGHT/OFF mode of operation.
Activation device outside (KA)	Push button, switch or movement detector for activating the door drive. The activation device is located outside the room enclosed by the door. Activation function in the AUTOMATIC mode of operation. The activation device does not have any function in the EXIT ONLY and NIGHT/OFF modes of operation.
Activation device authorised (KB)	Access control function (for example key switch or card reader) used by authorised persons to activate the door drive. The activation function is active in the AUTOMATIC, EXIT ONLY and NIGHT/OFF modes of operation.
Activation device with current impulse function	Push button for opening and closing the door. Activation function only in the AUTOMATIC and EXIT ONLY modes of operation. 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 activation device is connected to the passive leaf control system by means of the "current impulse" function, both door leaves open when activated, even when the passive leaf control system is deactivated.
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.
Opening safety sensor (SIO)	Presence detector (e.g. active infrared light switch) 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.
Closing safety sensor (SIS)	Presence detector (for example active infrared light switch) 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 door drive remains in its current position until the user releases the emergency stop switch again, thus terminating the emergency stop situation.
Low-energy function	The GEZE Powerturn can be used as a low-energy drive. In low-energy function the force needed for opening and closing the door is reduced to 67 N and the opening and closing time is reduced. This lowers the danger of a person bumping into the moving leaf. If people who are particularly vulnerable pass through the door, special measures must be taken to eliminate the contact hazard (e.g. use of open/ closing safety sensor).

Term	Explanation
Closing sequence control	<p>Electrical closing sequence control 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 passive leaf being closed first. The active leaf remains in the open position until the passive leaf has reached the closed position, then the active leaf begins to close.</p> <p>Integrated closing sequence control (-IS) The closing sequence is controlled mechanically in the case of a power failure at double-leaf door systems with Powerturn F-IS and Powerturn F-IS/TS. The door leaves are closed by means of the power storage device of the drives, with the active leaf being kept open by the integrated mechanical closing sequence control. When the passive leaf has reached the closed position, it releases the active leaf by means of the mechanical elements of the closing sequence control so that it can also close completely.</p>
Electric strike	<p>Electric strike fail safe Available as AC or DC electric strike version. When the door drive is activated, the electric strike is switched on by the control unit of the door drive provided the door is in the closed position. The electric strike remains activated until the door has left the closed position.</p> <p>Electric strike fail secure DC electric strike version. The electric strike is switched off when the door drive is activated provided the door is in the closed position. The electric strike remains switched off until the door has left the closed position.</p>
Bar message feedback	<p>The bar message 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 activation devices.</p>
Reset	<p>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.</p>
Latching function	<p>When the door is closed in a de-energised state, the door leaf is impeded by the lock latch of the electric strike. 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.</p>
Door closer mode	<p>In automatic mode (normal mode) the automatic swing door automatic drive can behave like a door closer. This means that closing is torque-controlled. This closing torque can be adjusted and adapted to the respective passage situation.</p>
Servo operation	<p>If servo operation is used, the swing door drive supports manual passage through moment of force (Siehe Review-Datei von November). The support moment of force and the support period can be set for this support.</p>

2 Fundamental safety precautions

For the user

Carefully read and abide by this user manual before commissioning the door. Always observe the following safety instructions:

- 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.
- The connection to the mains voltage must be made by a professional electrician.
- No changes may be made to the system without prior agreement from GEZE.
- GEZE shall assume no liability for damage caused by unauthorised changes to the system.
- The owner is responsible for safe operation of the system.
- Have a service technician check the safe operation of the system at regular intervals.
- Should safety devices be misaligned, thus preventing them from fulfilling their intended purpose, further operation is not permissible. The service technician must be informed without delay.
- Make sure that the safety stickers are attached visibly to any glass leaves and are in a legible state.
- Protect the programme switch against unauthorised access.
- Danger of injury by sharp edges on the drive when removing the cover
- Danger of injury by parts hanging down
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.

For the service technician

- GEZE does not accept any warranty for combinations with third-party products.
- Only combine third-party products with original parts following agreement by GEZE. Furthermore, only original GEZE parts may be used for repair and maintenance work.
- The power connection and safety earth conductor test must be carried out in accordance 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.

3 Description

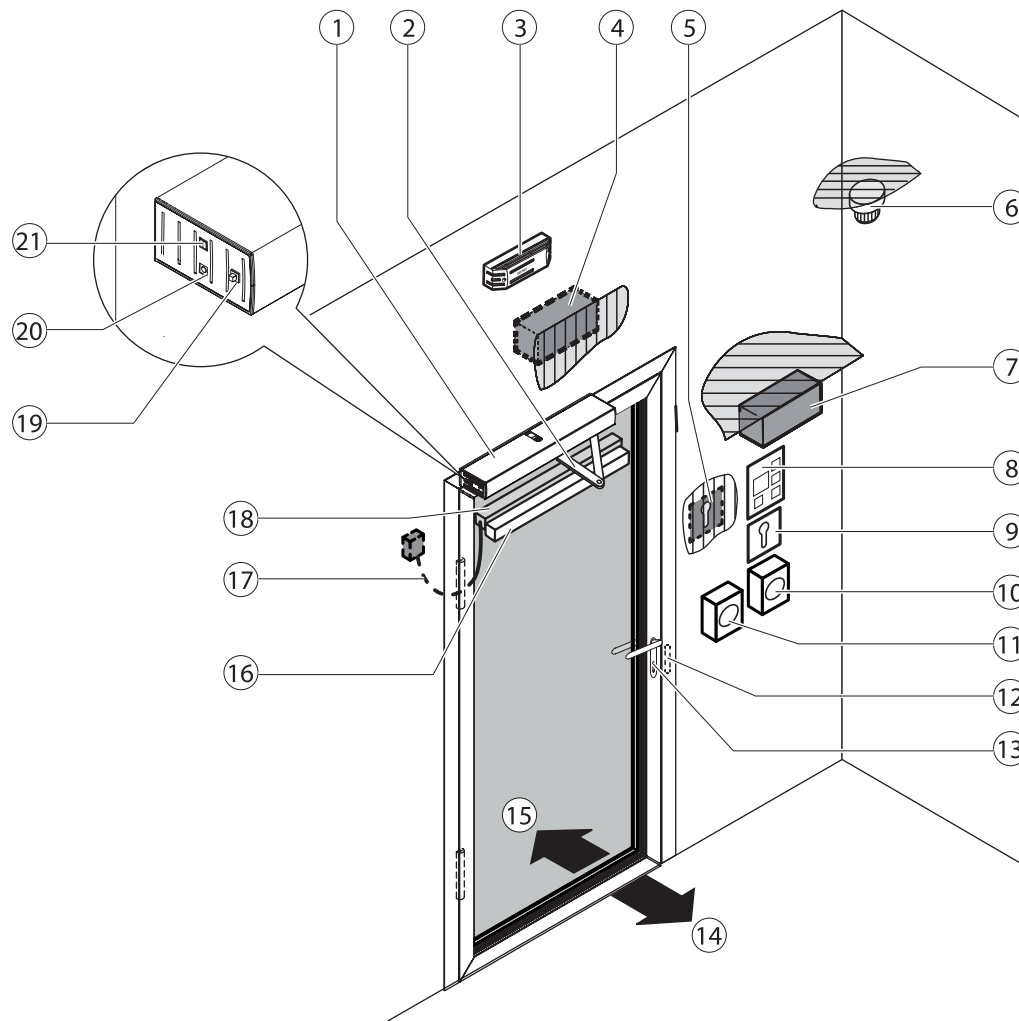
3.1 Types of installation and versions

- The door drive unit can be mounted in transom mounting at the lintel or in door leaf installation on the door leaf.
- The door drive is available as 1-leaf or 2-leaf version.
- The Powerturn F-IS and Powerturn F-IS/TS systems can only be mounted in transom installation.

3.2 Set-up

i 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 | 11 | Circuit breaker "CLOSE DOOR" ²⁾ |
| 2 | Link arm or roller guide rail | 12 | Electric strike (optional) |
| 3 | Smoke switch control unit ²⁾ | 13 | Door handle with door lock (on site) |
| 4 | Activation device outside (KA) (optional) | 14 | Inside building |
| 5 | Activation device authorised (KB) (optional) | 15 | Outside building |
| 6 | Smoke switch ²⁾ | 16 | Closing safety sensor (SIS) (optional) |
| 7 | Activation device inside (KI) (optional) | 17 | Door transmission cable (optional) |
| 8 | Programme switch (optional) | 18 | Opening safety sensor (SIO) (optional) |
| 9 | Key switch for enabling the programme switch (optional) | 19 | Reset switch |
| 10 | Emergency stop button (optional) | 20 | Socket for service adapter ST 220 and Bluetooth adapter |
| | | 21 | Operating modes push button with operating modes display |

²⁾ optional, in conjunction with Powerturn F

3.3 Overview of the modes of operation

The following modes of operation can be set on the Powerturn:

- Automatic mode
- Exit only
- Hold open
- Night mode
- OFF

Mode of operation	MPS/MPS-ST*	DPS**		Explanatory notes
		Key	Display	
Automatic			<i>RU</i>	Door opens and closes again. The inside and outside activation devices are active. Refer also to Chapter 3.5.
▫ Opening of 2 leaves				When the keys are pressed simultaneously, the mode of operation changes between 1-leaf opening and 2-leaf opening.
▫ Opening of 1 leaf				On the DPS the LED is lit in 1-leaf operation.
Exit only			<i>LS</i>	Door only opens and closes if someone exits. Only the inside activation devices are active.
Hold open			<i>do</i>	Door remains open.
Night mode			<i>nR</i>	Door opens and closes only when activated using the key switch The inside and outside activation devices are inactive.
OFF	OFF	OFF	<i>of</i>	Door is enabled and can be moved by hand. The inside and outside activation devices are inactive.

* mechanical programme switch (MPS)/mechanical program switch with integrated key switch (MPS-ST)

** display programme switch

3.4 Operating elements

The modes of operation can be set using the following operating elements:

- Operating modes push button (21) on the door drive (refer to chapter 3.4.1)
- Mechanical programme switch MPS with/without integrated key switch (optional) (see chapter 3.4.2)
- Display programme switch (optional) (see chapter 3.4.3)

3.4.1 Operating modes push button with operating modes display

The operating mode on the door drive can be selected using the operating modes push button (21). The operating modes display (21) lights up in the colour of the current mode of operation:

Operating modes displays

Mode of operation	Colour of the operating modes display (21)
Off	–
Night mode	red
Exit only	white
Automatic	green
Hold open	blue

Information and fault displays

State	Colour of the operating modes display (21)
The control has not been taught	yellow (light on permanently)
The control has not been initialised yet	lights up in the colour of the current mode of operation periodically interrupted by two brief flashing impulses (1 Hz)
One or more faults are queued	flashes quickly (10 Hz) in the colour of the current mode of operation
The operating modes push button is deactivated	operating modes display is switched off

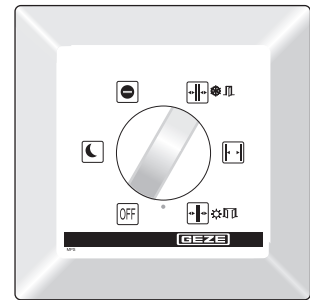


In the Off mode of operation, there is no fault display on the operating modes display (21).

3.4.2 Mechanical programme switch MPS (optional)

- i** Can be connected in addition to the operating modes push button (21).

At the mechanical programme switch MPS, the mode of operation for the system is selected and the corresponding programme is displayed. The mechanical programme switch is accessible for everyone without a key switch.



Mechanical programme switch MPS

With the mechanical programme switch MPS-ST, selection of the modes of operation is disabled if the key provided has been removed.



Mechanical programme switch MPS-ST with integrated key switch

3.4.3 Display program switch (optional)

- i** Additionally, it can be connected to the internal operating modes push button.

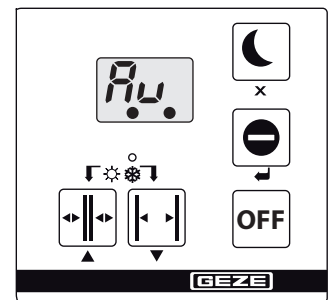
If a dot appears in the bottom right-hand part of the display, maintenance is due.



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

3.5 Door in normal operation

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

When Powerturn IS/TS is used, only the active leaf opens automatically. The passive leaf has to be opened manually.

What happens?	What does the door do?
An activation device (push button, switch or movement detector) is triggered.	Door opens, waits the hold-open time and then closes.
Closing safety sensor (SIS) is triggered when the door is open (e.g. light switch).	Door remains open.
Closing safety sensor (SIS) is triggered while the door is closing.	The door immediately opens again or stops depending on the parameter setting.
Opening safety sensor (SIO) is triggered while door is opening.	The door stops and remains in position until the end of activation (door opens) or until the end of the hold-open time (door closes).
Opening safety sensor (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. The opening safety sensor has not been activated.	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. The closing safety sensor has not been activated.	Door reopens immediately, waits the hold-open time and then closes at a reduced speed. When door closer mode is used with the closing safety sensor deactivated, the drive presses against the obstacle with the force set.

Additional door functions

Which switch/button?	What does the switch/button do?
Emergency stop button	The door stops immediately (in every mode of operation) and holds the position until the emergency stop button is unlocked.
Key switch of the display programme switch	If a key-operated switch is connected to the display programme switch, the operation of the display programme switch can be locked or released with it.
Activation device authorised (KB) (e.g. outside key switch)	Door opens once and closes after the hold-open time. The set mode of operation is retained.
Activation device with radio board	Door opens once and closes after the hold-open time. The set mode of operation is retained. If the key in radio channel 1 is pressed for longer than 5 s, the controller changes to the DO mode of operation. After the key has been pressed again for at least 5 s, the control changes back to the AU mode of operation.
Switch function	The automated door can be activated using the switch function. Normal switch function: <ul style="list-style-type: none"> ▫ Switch contact opens the door and the door remains in the open position. ▫ Switch contact closes the door. Switch function with hold-open time: <ul style="list-style-type: none"> ▫ Switch contact opens the door. ▫ Switch contact closes the door or the door starts to close after the hold-open time.

Which switch/button?	What does the switch/button do?
Double push button	In the case of 2-leaf drives, a button with a double function can be connected via a configurable push button. This means that 1-leaf or 2-leaf opening is possible by pressing the push button. If the push button is pressed once, only the active leaf opens and closes after the hold-open time has expired. If the button is pressed twice within 1.5 s, both leaves open and close after the double leaf hold-open time has expired.
Emergency lock	When the emergency lock is used, a switch can close the 1- or 2-leaf system immediately. The doors close with the set force and without sensor strips and obstacle detection. There is an increased risk of injury.
WC control	The door opens after the elbow switch on the outside of the toilet has been pressed, and closes automatically after the set hold-open time has passed. When the push button is activated inside the toilet cabin, the system is switched to the exit only mode of operation, which means the outer push button no longer opens the door. At the same time, the lights indicate that the toilet is occupied. The electric strike is supplied with current, preventing manual opening of the door from outside. Activating the "inner" push button again or through manual opening from inside, the WC function (exit only mode of operation) is cancelled and the drive switched back to the automatic mode of operation. The 'occupied' displays and lights go out.

4 Operation

! The set parameters of the drive functions may only be modified by a service technician.

4.1 Selecting the mode of operation

4.1.1 Selecting the mode of operation using the operating modes push button

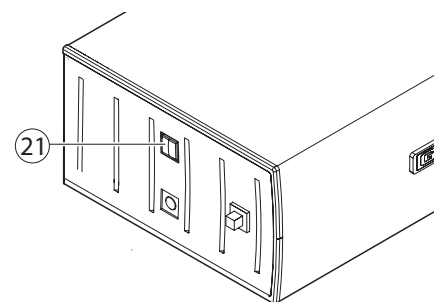
i The operating modes push button can be deactivated by a service technician.

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

- ▶ Press the operating modes push button (21) with operating modes display briefly.

The operating modes display (2) 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 button has been pressed. Operating modes sequence, with the colour of the operating modes display in brackets:

... → OFF (-) → Night mode (red) → Exit only (white) → Automatic (green) → Hold open (blue) → OFF (-) → Night mode (red) → ...
Thanks to the 1 s delay it is possible to change the mode of operation from automatic through hold open to night mode without the door opening in the hold open setting.



Changing the mode of operation (with passive leaf)

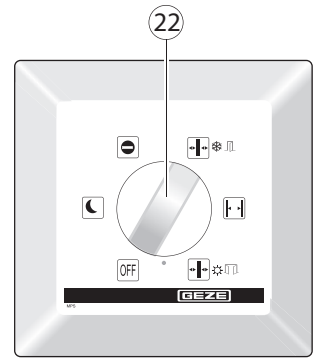
- ▶ Press the operating modes push button (21) with operating modes display briefly. The drive on the passive leaf is switched on and off.

If the drive is switched on, the operating modes display lights up in the colour of the mode of operation (see chapter 3.4.1). If the drive is switched off, the operating modes display does not light up.

4.1.2 Selecting the mode of operation at the mechanical programme switch MPS

With the programme switch MPS

- ▶ Turn the rotary switch (22) to the required mode of operation. The mode of operation is set.

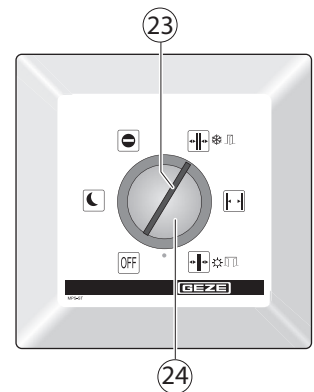


Mechanical programme switch MPS

With the programme switch MPS-ST (key switch)

Operation of the mechanical programme switch MPS-ST is only possible with the supplied key (23).

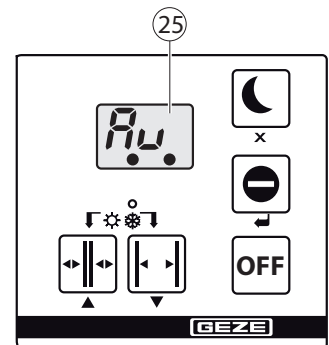
- ▶ Insert the key (23) into the mechanical programme switch MPS-ST.
- ▶ Turn the key rotary switch (24) to the required mode of operation. The mode of operation is set.
- ▶ Remove the key. The mechanical programme switch MPS-ST locked.



Mechanical programme switch MPS-ST with integrated key switch

4.1.3 Selecting the mode of operation using the display programme switch

- ▶ Touch the required mode of operation on the display programme switch. The mode of operation is set and indicated on the display (25).



Display programme switch

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.

5 Troubleshooting

Problem	Cause	Remedy
Door only opens and closes slowly	Obstruction in travel path	<ul style="list-style-type: none"> ▶ Remove obstruction and check door leaf for ease of movement ▶ Have the door close completely once; after detection of an obstruction the door moves at a safe speed until the complete closing procedure has been completed.
	Closing safety sensor (SIS) soiled	<ul style="list-style-type: none"> ▶ Clean the closing safety sensor ▶ Have the door close completely once; after detection of an obstruction the door moves at a safe speed until the complete closing procedure has been completed.
	Closing safety sensor (SIS) misaligned or defective	<ul style="list-style-type: none"> ▶ Notify a service technician
Door opens and closes constantly	Obstruction in travel path	<ul style="list-style-type: none"> ▶ Clear the obstruction
	Light beams or reflections, e.g. reflective floor, falling rain	<ul style="list-style-type: none"> ▶ Check detection field of movement detector
	Misaligned movement detector	<ul style="list-style-type: none"> ▶ Check detection field of movement detector
Door only opens a crack	Obstruction in travel path	<ul style="list-style-type: none"> ▶ Remove obstruction and check door leaf for ease of movement
Door does not open	Obstruction in travel path	<ul style="list-style-type: none"> ▶ Remove obstruction and check door leaf for ease of movement
	Movement detector misaligned or defective (outside)	<ul style="list-style-type: none"> ▶ Check the movement detector, notify a service technician if necessary
	Emergency stop activated	<ul style="list-style-type: none"> ▶ Unlock emergency stop
	"Night" operating mode	<ul style="list-style-type: none"> ▶ Select a different mode of operation
	"Exit only" operating mode	<ul style="list-style-type: none"> ▶ Select "Automatic" operating mode
	Door locked mechanically	<ul style="list-style-type: none"> ▶ Unlock the door
	Electric strike does not release	<ul style="list-style-type: none"> ▶ Notify a service technician
	Fire alarm active (only Powerturn F)	<ul style="list-style-type: none"> ▶ Press the Reset switch
Door does not close After 4 min. of permanent activation by the safety sensor, the Powerturn/ Powerturn F automatically closes the door automatically in low-energy mode)	Closing safety sensor (SIS) soiled	<ul style="list-style-type: none"> ▶ Clean the closing safety sensor (SIS)
	Closing safety sensor (SIS) misaligned or defective	<ul style="list-style-type: none"> ▶ Notify a service technician
	Obstruction in travel path	<ul style="list-style-type: none"> ▶ Remove obstruction and check door leaf for ease of movement
	Movement detector triggers constantly	<ul style="list-style-type: none"> ▶ Check the movement detector, notify a service technician if necessary
	"Hold open" mode of operation	<ul style="list-style-type: none"> ▶ Select a different mode of operation
	Current impulse push button function controls	<ul style="list-style-type: none"> ▶ Terminate activation by activating the push button again
	Drive defective	<ul style="list-style-type: none"> ▶ Notify a service technician
Display programme switch cannot be operated	Display programme switch is disabled	<ul style="list-style-type: none"> ▶ Activate key switch for release
	Display programme switch defective	<ul style="list-style-type: none"> ▶ Notify a service technician
Display programme switch displays 88	Connection between display programme switch and control unit faulty	<ul style="list-style-type: none"> ▶ Notify a service technician
	Display programme switch or control unit defective	<ul style="list-style-type: none"> ▶ Notify a service technician
Display programme switch is dark	Mains power failure	<ul style="list-style-type: none"> ▶ Check mains fuse
	Connection between display programme switch and control unit faulty	<ul style="list-style-type: none"> ▶ Notify a service technician
	Display programme switch or control unit defective	<ul style="list-style-type: none"> ▶ Notify a service technician
Display of fault messages on the display programme switch	Fault in the door system	<ul style="list-style-type: none"> ▶ Note fault messages. Up to 10 different fault messages can occur in succession. The display changes about every 10 seconds. ▶ Notify a service technician

6 Cleaning and maintenance

6.1 Cleaning



CAUTION!

Danger of injury due to impact and crushing!

- ▶ Set the mode of operation to OFF.
- ▶ Secure door leaves against accidental movement before carrying out cleaning work.

What is to be cleaned?	How is it to be cleaned?
Closing safety sensor (SIS) (e.g. light switch)	▶ 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 5.5...7)
Display programme switch	▶ Wipe with soft cloth. Do not use a cleaning agent

6.2 Maintenance

The owner must ensure that the system is working perfectly. 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.

Installation, maintenance and repair work must be performed by properly trained personnel authorised by GEZE.

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

- ▶ Notify a service technician.



The maintenance display lights up after the specified calendar period or number of opening cycles, depending on what occurs first:

Powerturn (F) 1 year or 500,000 cycles

GEZE offers maintenance contracts with the following services:

- Inspection of fixing 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

6.3 Inspection by an expert

In compliance with the "Guidelines for windows, doors and gates" (ASR A1.7 and GUV 16.10) Section 6, power-operated 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 compliance with the requirements in the test log for power-operated windows, doors and gates; Sliding doors and sliding gates ZH 1/580.2 edition.

7 Technical data

Opening time:	3 ... 25 s
Closing time:	5 ... 25 s
Mains voltage	230 V AC -15 %, +10 %
Frequency	50 Hz
Protection rating	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 VAC (46 V DC)
Control voltage for external components	24 VDC ±10 %
Output current control voltage 24 V	1200 mA permanently 1800 mA briefly (2 s, duty ratio 30 %)
Fuse protection <24 V	2.5 A; reversible
Temperature range	-15 ... +50 °C
IP rating	IP30

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