GEZE SWING DOOR SYSTEMS
CLEVER SYSTEMS. FOR BARRIER-FREE ACCESS.
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GEZE swing door systems

Open and close doors easily

The automatic swing door systems from GEZE make passing through a door easier every time when manual opening is too hard or inconvenient. They are recommended in public as well as in private buildings, when convenience, accessibility, safety and hygiene are necessary or when energy has to be saved: in shopping centres, schools, office or industrial buildings, airports, hospitals, vestibules or in individual homes.

ECturn

The electromechanical swing door drive ECturn is recommended for single-leaf smaller internal and entrance doors of up to 125 kilogram with a moderate access frequency. The ECturn is so small and discreet that even frameless all-glass doors can be automated. In addition, the ECturn Inside enables an “invisible” door automation. Thanks to its small dimensions, it can be integrated in the door leaf or in the frame. The ECturn Inside was labelled with the Interior Innovation Award by the German Design Council.

Slimdrive EMD

The electromechanical swing door drive Slimdrive EMD is suitable for single and double-leaf doors of up to 230 kilogram, slim profiles and small spaces. The Slimdrive EMD, with a drive height of only seven centimetres, various cover designs and adjustment options, fits in every door situation and is also approved in fire protection doors. It was already labelled with two Plus X Awards.

TSA 160 NT

The approved electrohydraulic swing door drive TSA 160 NT opens and closes doors of up to 310 kilogram safely and reliably. It manages high public access easily. Multiple variations enable various applications.

Powerturn

The electromechanical swing door drive Powerturn provides a high function and design variety. The robust, efficient drive opens single and double-leaf large and heavy doors with leaf weights of up to 300 kilogram quietly and reliably. With its 7-cm-optics, it fits in every door design. Thanks to the Smart swing function, even manual door-opening is child’s play. Hence the Powerturn is a prime example for Universal Design.

Design possibilities for swing door systems

1 = Drive
2 = Actuation
3 = Fuse protection
4 = Operation

DIN 18650

The industrial standard DIN 18650 was created to be able to guarantee operators and users of automatic doors optimum safety. GEZE swing door systems with automatic function have been type-tested to DIN 18650 and certified.

EN 16005

The new European standard EN 16005 sets out the design requirements and testing methods used to ensure the safe use of automatic doors. The new standard has created a Europe-wide safety standard for automatic doors. All automatic door systems and safety sensors from GEZE meet the EN 16005 standard and are available.

DIN 18040

DIN 18040 formulates the safety objectives for publicly accessible buildings and apartments and shows the requirements of people with sensory and cognitive limitations. The automatic swing door systems of GEZE are attractive not only for people with limited mobility. Accessibility is also reflected in the concept of Universal Design and in the topical subject “Inclusion”. According to this concept, buildings must be made easy to access for the largest possible group of people, and it must be possible to use them without help.
## Overview table for swing door systems

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<td>70 x 650 x 121 mm</td>
<td>100 x 690 x 121 mm</td>
<td>70 x 720 x 130 mm</td>
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<tr>
<td><strong>Leaf weight (max.)</strong></td>
<td>GLS / RS'</td>
<td>GST</td>
<td>GLS / RS'</td>
<td>GST</td>
</tr>
<tr>
<td>GLS / RS'</td>
<td>125 kg</td>
<td>180 kg</td>
<td>250 kg</td>
<td>300 kg</td>
</tr>
<tr>
<td>GST</td>
<td></td>
<td></td>
<td>230 kg*</td>
<td></td>
</tr>
<tr>
<td><strong>Leaf width (min.)</strong></td>
<td>GLS / RS'</td>
<td>GST</td>
<td>GLS / RS'</td>
<td>GST</td>
</tr>
<tr>
<td>GLS / RS'</td>
<td>650 mm</td>
<td>850 mm</td>
<td>690 mm</td>
<td>800 mm</td>
</tr>
<tr>
<td>GST</td>
<td></td>
<td>750 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Leaf width (max.)</strong></td>
<td>GLS / RS'</td>
<td>GST</td>
<td>GLS / RS'</td>
<td>GST</td>
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<tr>
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<td>1400 mm</td>
<td>1600 mm</td>
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<tr>
<td>GST</td>
<td></td>
<td>750 mm</td>
<td></td>
<td></td>
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<td>GST</td>
<td>GLS / RS'</td>
<td>GST</td>
</tr>
<tr>
<td>GLS / RS'</td>
<td>–</td>
<td>1700-2500 mm</td>
<td>1470-3200 mm</td>
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<tr>
<td>GST</td>
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<td>1480 – 3200 mm</td>
<td></td>
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<tr>
<td><strong>Opening and closing speed adjustable</strong></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
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<td>●</td>
<td>●</td>
<td>●</td>
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<td><strong>Electromechanical drive</strong></td>
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<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Electrohydraulic drive</strong></td>
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<td>●</td>
<td>●</td>
<td>●</td>
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<td>GST</td>
<td>GLS / RS'</td>
<td>GST</td>
</tr>
<tr>
<td>GLS / RS'</td>
<td>– / ●</td>
<td>● / ●</td>
<td>● / ●</td>
<td>● / ●</td>
</tr>
<tr>
<td>GST</td>
<td>– / ●</td>
<td>● / ●</td>
<td>● / ●</td>
<td>● / ●</td>
</tr>
<tr>
<td><strong>Integrated in door leaf or in door frame</strong></td>
<td>●***</td>
<td>●***</td>
<td>●***</td>
<td>●***</td>
</tr>
<tr>
<td><strong>1-leaf / 2-leaf</strong></td>
<td>● / –</td>
<td>● / ●</td>
<td>● / ●</td>
<td>● / ●</td>
</tr>
<tr>
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<td>●</td>
<td>●</td>
<td>●</td>
</tr>
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<td>●</td>
<td>●</td>
<td>●</td>
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<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
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<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Servo</strong></td>
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<td>●</td>
<td>●</td>
<td>●</td>
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<td>●</td>
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<td>●</td>
<td>●</td>
<td>●***</td>
</tr>
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<td>With integrated closing sequence control (IS)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●***</td>
</tr>
<tr>
<td>With integrated closing sequence control for double-leaf fire and smoke protection doors (F-IS)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●***</td>
</tr>
<tr>
<td>With integrated closing sequence control for double-leaf doors, automatic doors and door closer function (IS/TS)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●***</td>
</tr>
<tr>
<td>For fresh air supply as well as doors in emergency exits (Invers)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●***</td>
</tr>
<tr>
<td>For large and heavy doors, as well as frequently used doors (EN7)</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●***</td>
</tr>
</tbody>
</table>

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RS = Roller guide rail  
GLS = Guide rail  
GST = Link arm  
● = Yes  
I = GLS: ECturn / RS: Slimdrive, TSA and Powerturn  
* = Slimdrive EMD-F  
** = TSA 160 NT EN7  
*** = ECturn Inside  
**** = Powerturn F

Note: The maximum possible leaf weight in relation to leaf width can be found in the chapter on areas of application (diagrams)!
Types of installation for swing door systems

The following diagrams show the installation possibilities for swing doors and the drives which can be used to realise this application.

Notes
A door stopper is always required.
We recommend link arms for external doors. Wind loads and underpressure or excess pressure must also be taken into account.

Installation on the hinge side

Transom installation with guide rail / roller guide rail
1 = ECturn
2 = Slimdrive EMD
3 = TSA 160 NT
4 = Powerturn

Door leaf installation with guide rail / roller guide rail
1 = ECturn
2 = Slimdrive EMD
3 = Powerturn

Installation on the opposite hinge side

Transom installation with link arm
1 = ECturn
2 = Slimdrive EMD
3 = TSA 160 NT
4 = Powerturn

Transom installation with guide rail / roller guide rail
1 = ECturn
2 = Slimdrive EMD
3 = Powerturn

Door leaf installation with guide rail / roller guide rail
1 = ECturn
2 = Powerturn

Installation in the door leaf / installation in the door frame

1 = ECturn Inside
Swing door systems for fire and smoke protection doors (F)

Drive systems in the F variant are used to automatically open and close 1-leaf fire protection doors. The usual types of impulse generator can be used to actuate the drive. In addition to automatic opening and closing, fire protection doors can also be held open. In the event of a fire, an appropriate fire detection system must cancel the automatic function or any hold-open mechanism. The power supply to the mains cable is interrupted via a mains switch-off board (F-accessory) and the drive retains the normal door closer performance. This means that door closers with automatic opening function in accordance with DIN 18263 Part 4 are a component part of hold-open systems and require official building approval. Fire protection doors must meet the requirements of the DIBt guideline (Deutsches Institut für Bautechnik). The Powerturn F and the Slimdrive EMD-F/R with integrated smoke switch fulfil the highest design requirements.

This variant can be realised using the following drive series: Slimdrive EMD-F, TSA 160 NT and Powerturn

F swing door

[Image: Photo: GEZE GmbH]

Swing door systems with integrated closing sequence control (IS)

Swing door systems in the IS variant are always equipped with an integrated closing sequence control (electronic or mechanical). The closing sequence control ensures that the fixed leaf closes first on 2-leaf doors. The active leaf only closes once the fixed leaf has closed completely. The mechanical closing sequence control also works without electricity and in the event of a power failure.

This variant can be realised using the following drive series: Slimdrive EMD-F, TSA 160 NT and Powerturn

IS swing Door

[Image: Hospital, Düsseldorf, Germany (Photo: Lothar Wels)]
Swing door systems with integrated closing sequence control for double-leaf fire and smoke protection doors (F-IS)

Drive systems in the F-IS variant are used to automatically open and close double-leaf fire protection doors. A mechanical closing sequence control is necessary for double-leaf fire protection doors, refer to the section on integrated closing sequence control (IS). This variant can be realised using the following drive series: Slimdrive EMD-F, TSA 160 NT and Powerturn.

F-IS swing door

Swing door systems with integrated closing sequence control for double-leaf doors, automatic doors and door closer function (IS/TS)

With this variant for double-leaf swing door systems, the active leaf is automated with a swing door drive (TSA 160 NT), the fixed leaf is equipped with a door closer (TS 160). Since the drive design is not interrupted, this system produces harmonious results, both in terms of function and appearance. The preferred use for this swing door drive/door closer combination is when the active leaf is the one mainly moved. The closing sequence control required for use on fire protection doors is also integrated in the drive housing. This guarantees that both door leaves close in a controlled manner after they have been passed through. The fixed leaf can be held open by manually setting the programme switch to "permanently open" and manually opening the door.

This variant can be realised using the following drive series: TSA 160 NT IS/TS.

F-IS/TS swing door
Swing door systems for fresh air as well as doors in emergency exits (inverse)

Inversely installed swing door drives are used on single and double-leaf single-action doors made of wood, plastic or steel. There is an electrical closing sequence control available for double-leaf doors. Inversely installed drives are suitable for emergency exits and for fresh air opening systems for RWA systems. The doors are opened by spring force and closed by motor. This guarantees that the door will open safely in the event of a power failure or fire alarm. An emergency power supply is no longer required. This variant can be realised using the following drive series: Slimdrive EMD and TSA 160 NT

Inverse swing door

Augustinum retirement home, Stuttgart, Germany (Photo: Dirk Wilhelmy)

Swing door systems for large and heavy doors, as well as frequently used doors (EN7)

GEZE swing door drives can be used for the safe and reliable automatic operation of even very large and heavy swing doors with leaf weights of up to 310 kg. The F-version of the drive variants with a closing force size EN7 are suitable and approved for fire protection doors with a leaf width of 1600 mm. Optimum areas of application are facilities for the elderly, hospitals, shopping centres, schools or airports. The closing force size EN7 can be realised with the following drive series: TSA 160 NT EN7 and Powerturn

Powerturn swing door

Danish Association for Disabled, Taastrup, Denmark (Photo: Morten Bak)
Special area of application: Toilets for the disabled

Toilets for the disabled must be designed in such a way that people with all sorts of different handicaps can use the facilities without needing help. GEZE swing door drives provide an indispensable service for this application, and guarantee a high level of convenience.

**Description of function**

The door opens automatically 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 user presses the selector switch inside the toilet cubicle, the “occupied” sign outside the toilet is activated and the telltale lamp on the change-over switch comes on. At the same time, the elbow switch is deactivated on the outside and on the inside. This means the door cannot be opened by third parties nor by the user by mistake. The door opener is supplied with current, preventing manual opening of the door from outside. When the user leaves the toilet, he presses the selector switch again. The “occupied” sign outside and the telltale lamp inside both go off. The drive is actuated by pressing the OPEN DOOR elbow switch inside the cubicle, and the door opens immediately.

In the event of a power failure, the door opener (electric strike for static current) releases and the user can leave the cubicle by pushing or pulling the door open. The door can also always be opened from the inside by pressing the elbow switch, even when the system is still powered. In emergencies, the door can be opened manually from the outside by means of a key or by actuating the emergency shut-off switch.

1 = Swing door drive
2 = OPEN DOOR elbow switch (inside and outside)
3 = Selector switch: Lock/Unlock door
4 = „Occupied“ indicator light
5 = „Occupied“ telltale lamp
6 = Emergency-stop switch (recommended installation height: 1600 mm)
GEZE swing door drive ECturn

Electromechanical swing door drive for 1-leaf single-action doors as „entry door solution“ (including all-glass doors)

This extremely quiet electromechanical swing door drive meets the requirements of barrier-free building. It makes life easier and more convenient – particularly for people with mobility problems or little strength. Doors can comfortably be opened automatically or manually and closed automatically. The GEZE ECturn can be operated both in low-energy mode and in automatic mode in accordance with DIN 18650 / EN 16005. In low-energy mode, the drive moves the swing door at reduced speed. The use of safety sensors to safeguard the system is only necessary in individual cases, taking the user group into account. In automatic mode, however, the swing area of the door must always be safeguarded with safety sensors. An optional rechargeable battery ensures maximum safety even in the event of a power failure. This swing door drive covers all internal application cases. Thanks to the glass guide rail available as an accessory, the ECturn can also be used on glass doors (glass thickness 8-10 mm). The ECturn is very flexible and permits all hinge variants, both for DIN left and DIN right doors.

Application range

- Barrier-free entrance doors and internal doors
- All-glass doors
- Hotels and gastronomy
- Hospitals and nursing homes for the elderly
- Educational institutions, e.g. schools, nursery schools, day care centres
- Leisure facilities, e.g. baths, thermal baths, sport and wellness centres
- Administration and public buildings
- Homes
Technical data

<table>
<thead>
<tr>
<th>Product features</th>
<th>GEZE ECturn</th>
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<tbody>
<tr>
<td>Height</td>
<td>60 mm</td>
</tr>
<tr>
<td>Width</td>
<td>580 mm</td>
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<tr>
<td>Depth</td>
<td>60 mm</td>
</tr>
<tr>
<td>Leaf weight (max.) 1-leaf</td>
<td>125 kg</td>
</tr>
<tr>
<td>Leaf width (min.-max.)</td>
<td>650 – 1100 mm</td>
</tr>
<tr>
<td>Reveal depth (max.)*</td>
<td>200 mm</td>
</tr>
<tr>
<td>Door overlap (max.)*</td>
<td>50 mm</td>
</tr>
<tr>
<td>Drive type</td>
<td>Electromechanical</td>
</tr>
<tr>
<td>Door opening angle (max.)*</td>
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</tr>
<tr>
<td>DIN left</td>
<td>●</td>
</tr>
<tr>
<td>DIN right</td>
<td>●</td>
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<td>Transom installation opposite hinge side with link arm</td>
<td>●</td>
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<tr>
<td>Transom installation opposite hinge side with guide rail</td>
<td>●</td>
</tr>
<tr>
<td>Transom installation hinge side with guide rail</td>
<td>●</td>
</tr>
<tr>
<td>Transom installation opposite hinge side with guide rail on all-glass doors</td>
<td>●</td>
</tr>
<tr>
<td>Transom installation hinge side with guide rail on all-glass doors</td>
<td>●</td>
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<td>Door leaf installation opposite hinge side with guide rail</td>
<td>●</td>
</tr>
<tr>
<td>Door leaf installation hinge side with guide rail</td>
<td>●</td>
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<tr>
<td>Disconnection from mains</td>
<td>Main switch in the drive</td>
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<tr>
<td>Activation delay (max.)</td>
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<tr>
<td>Operating voltage</td>
<td>110 - 230 V</td>
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<tr>
<td>Frequency of supply voltage</td>
<td>50 – 60 Hz</td>
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<td>Capacity rating</td>
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<td>Power supply for external consumers (24 V DC)</td>
<td>600 mA</td>
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<td>Temperature range</td>
<td>-15 – 50 °C</td>
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<td>IP rating</td>
<td>IP 20</td>
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<tr>
<td>Operating modes</td>
<td>Off, Automatic, Permanently open, Night</td>
</tr>
<tr>
<td>Type of function</td>
<td>Fully automatic</td>
</tr>
<tr>
<td>Automatic function</td>
<td>●</td>
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<tr>
<td>Low-energy function</td>
<td>●</td>
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<td>Key function</td>
<td>●</td>
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<td>Obstruction detection</td>
<td>●</td>
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<tr>
<td>Automatic reversing</td>
<td>●</td>
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<td>adjustable</td>
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<td>Operation</td>
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<td>Display programme switch DPS, Control</td>
</tr>
<tr>
<td>Approvals</td>
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</tr>
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</table>

* = DEPENDING ON THE TYPE OF INSTALLATION

NOTE: THE MAXIMUM POSSIBLE LEAF WEIGHT IN RELATION TO LEAF WIDTH CAN BE FOUND IN THE CHAPTER ON AREAS OF APPLICATION (DIAGRAMS)!
Areas of application

Note
In low-energy mode the drive moves the swing door at reduced speed, thus fulfilling the safety requirement in DIN 18650 / EN 16005. The use of safety sensors to safeguard the system is only necessary in individual cases, taking the user group into account. In automatic mode, however, the swing area of the door must always be safeguarded with safety sensors.

X = Door width (mm)
Y = Door weight (kg)
1 = Area of application in low-energy mode
2 = Area of application in automatic mode

GEZE ECturn (Photo: Studio BE)
Automatic swing door systems

GEZE ECturn

Note: Diagram shows left-hand (ISO 6), right-hand (ISO 5) is reversed (mirror-image).

Transom installation with guide rail on the hinge side, single-leaf
Drawing no. 70107-ep01
Reveal depth (max.) 40 mm
Door overlap (max.) 40 mm

* = Direct installation
1 = Space requirement for ECturn
2 = Space requirement for guide rail
3 = Space requirement for GC 338

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Concealed cable routing for low-voltage connection and mains cable
2 = Dimensional reference centre of hinge
3 = Concealed cable routing for low-voltage connection
Transom installation with guide rail on the opposite hinge side, single-leaf

Drawing no. 70107-ep02
Reveal depth (max.) 30 mm

* = Direct installation
1 = Space requirement for ECturn
2 = Space requirement for guide rail
3 = Space requirement for GC 338

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Concealed cable routing for low-voltage connection
2 = Concealed cable routing for low-voltage connection and mains cable
3 = Dimensional reference centre of hinge
Transom installation with link arm on the opposite hinge side, single-leaf
Drawing no. 70107-ep03
Reveal depth (max.) 200 mm

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Concealed cable routing for low-voltage connection
2 = Concealed cable routing for low-voltage connection and mains cable
3 = Dimensional reference centre of hinge
Door leaf installation with guide rail on the hinge side, single-leaf
Drawing no. 70107-ep04
Door overlap (max.) 50 mm

* = Direct installation
1 = Space requirement for guide rail
2 = Space requirement for ECTurn
3 = Space requirement for GC 338

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for low-voltage connection and mains cable
3 = Concealed cable routing for low-voltage connection
Door leaf installation with link arm on the hinge side, single-leaf
Drawing no. 70107-ep06
Door overlap (max.) 200 mm

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for low-voltage connection and mains cable
3 = Concealed cable routing for low-voltage connection

* = Direct installation
1 = Space requirement for link arm
2 = Space requirement for ECturn
3 = Space requirement for GC 338
Door leaf installation with guide rail on the opposite hinge side, single-leaf
Drawing no. 70107-ep05
Reveal depth (max.) 20 mm

* = Direct installation
1 = Space requirement for guide rail
2 = Space requirement for ECturn
3 = Space requirement for GC 338

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Concealed cable routing for low-voltage connection
2 = Dimensional reference centre of hinge
3 = Concealed cable routing for low-voltage connection and mains cable
Transom installation with glass guide rail on the hinge side
Drawing no. 70107-ep09

* = Direct installation
1 = Space requirement for ECTurn

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Concealed cable routing for low-voltage connection
2 = Concealed cable routing for low-voltage connection and mains cable
3 = Dimensional reference centre of hinge
Transom installation with glass guide rail on the opposite hinge side
Drawing no. 70107-ep19

* = Direct installation
1 = Space requirement for ECturn
LT = Soffit depth

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Concealed cable routing for low-voltage connection
2 = Concealed cable routing for low-voltage connection and mains cable
3 = Dimensional reference centre of hinge
Legend for the cable plans

Cables
1 = NYM-J 3 x 1.5 mm²
2 = J-Y(ST)Y 1 x 2 x 0.6 LG
3 = J-Y(ST)Y 2 x 2 x 0.6 LG
4 = J-Y(ST)Y 4 x 2 x 0.6 LG
5 = LiYY 2 x 0.25 mm²
6 = LiYY 4 x 0.25 mm²
7 = Scope of supply sensor strip or LiYY S x 0.25 mm²
8 = Route empty pipe with pull-wire inner diameter 10 mm

Notes
- Cable plans can also be prepared for specific building projects after receipt of order
- Version of standard cable plans in accordance with GEZE specifications
- Cable routing according to VDE0100/ IEE regulations
- Allow the cable for the drive to project at least 1500 mm out of the wall

1) Door transmission cable (included in the scope of supply for sensor strip)
2) Cable exit for door drive, see installation drawings for ECturn 70107-ep01 to -ep06
3) Cable included in the scope of supply for the sensor
4) 4 + 5) Connection box for mains supply and control cable combined on site. Mains supply and control cable must be wired in separate terminal spaces.
5) Mains connection box WxHxD min. 65 x 65 x 57
6) Control cable box WxHxD min. 94 x 65 x 57 with PG-11 duct

Abbreviations
HS = Main switch
NOT = Emergency-stop switch
KB = Contact sensor authorised
PS = Programme switch
ST = Emergency stop
KI = Contact sensor inside
KA = Contact sensor outside
TOE = Door opener
RM = Bar message

Automatic swing door systems
GEZE ECturn

Automatic swing door systems
GEZE AUTOMATIC DOOR SYSTEMS
ECturn, EMD,
TSA 160 NT,
Powerturn
GEZE swing door drive ECturn Inside

Electromechanical swing door drive for 1-leaf single-action doors as „entry door solution“ and inside

With the ECturn Inside swing door drive, GEZE combines accessibility and safety with optimum door design. Thanks to its small dimensions, the drive can be integrated into the door leaf of internal doors (min. thickness 55 mm). The ECturn Inside opens and closes doors “invisibly” without compromising their appearance. The wide range of special functions such as radio push buttons, mobile radio remote control units or acoustic signals allow the system to be tailored to specific user requirements. ECturn Inside can be operated in low-energy and automatic modes. In low-energy mode the drive moves the swing door at reduced speed, thus fulfilling the safety level of DIN 18650 and EN 16005. An optional rechargeable battery provides a safeguard in the event of a power failure ensuring that the door continues to open automatically and safely. The door can also be opened manually in the event of a power failure.

Application range

- Barrier-free entrance doors and internal doors
- Hotels and gastronomy
- Hospitals and nursing homes for the elderly
- Educational institutions, e.g. schools, nursery schools, day care centres
- Leisure facilities, e.g. baths, thermal baths, sport and wellness centres
- Administration and public buildings
- Homes
Technical data

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* = DEPENDING ON THE TYPE OF INSTALLATION

NOTE: THE MAXIMUM POSSIBLE LEAF WEIGHT IN RELATION TO LEAF WIDTH CAN BE FOUND IN THE CHAPTER ON AREAS OF APPLICATION (DIAGRAMS)!

Areas of application

Note

In low-energy mode the drive moves the swing door at reduced speed, thus fulfilling the safety requirement in DIN 18650 / EN 16005. The use of safety sensors to safeguard the system is only necessary in individual cases, taking the user group into account. In automatic mode, however, the swing area of the door must always be safeguarded with safety sensors.
Overview of components

1 = Cover for the motor drive control
2 = Back check
3 = Guide rail and lever
4 = Separate programme switch (optional)
5 = Fixture for rechargeable battery (optional)
6 = Rechargeable battery (optional)
7 = Control
8 = Motor drive control
9 = Supply cable, inside door 2.5 m
10 = Electric installation material
11 = Cable transition (optional)
12 = Supply cable (on site)
13 = Power supply (flush-mounted)

Installation in the wooden door frame
Drawing no. 70107-ep10

A = Frame cut-out
B = Door cut-out
1 = Recess for programme switch (optional)
2 = Recess for lever
* = Dimensions or positions can deviate depending on the door type.
Installation in the wooden door frame
Drawing no. 70107-ep13

A = Cut-out for drive
B = Door cut-out
1 = Cut-out for lever
* = Dimensions or positions can deviate depending on the door type.

Installation in the metal door leaf
Drawing no. 70107-ep12

A = Frame cut-out
B = Door leaf cut-out
1 = Cut-out for programme switch (optional)
* = Dimensions or positions can deviate depending on the door type.

Installation in the metal door frame
Drawing no. 70107-ep14

A = Frame cut-out
B = Door cut-out
* = Dimensions or positions can deviate depending on the door type.
Legend for the cable plan

1 = NN YM-J 3x1.5 mm²
2 = JJ-Y(ST) Y 2x2x0.6 mm²
10 = Empty pipe Ø 10 mm with pull-wire; cable supplied by GEZE, max. 3 m
11 = Cable information must be provided on site
13 = J-Y(ST) Y 2x2x0.6 mm², optional empty pipe Ø 10 mm with pull-wire
16 = Empty pipe Ø 10 mm with pull-wire; J-Y(ST)Y 4x0.6mm LG
17 = Empty pipe Ø 12 mm with pull-wire; NYM-O 2x1.5mm²
18 = Cable supplied by GEZE, cable length max. 3 m
i = Cable consolidation for control/actuation devices (symbolic)
RSK = Lock switch contact

Notes

- This cable plan is a simplified symbolic illustration. Connections must be taken from the wiring diagram. Cable routing is included in the VDE guidelines.
- Positioning of the actuation and operating devices must be specified on site
- Positions shown with dotted lines are positioned on the opposite side
- In compliance with DIN 18650 / EN 16005 for automatic mode sensor strips on both sides
GEZE swing door drive Slimdrive EMD

Electromechanical swing door drive for 1 and 2-leaf single-action doors

The electromechanical swing door drive GEZE Slimdrive EMD stands out due to its numerous areas of application. The compact drive is only 7 cm high and can move large and heavy internal and external doors comfortably and quietly. This makes the Slimdrive EMD the ideal solution wherever efficiency has to be coupled with silent running. State-of-the-art control technology combined with a low-wear and maintenance-free high-power motor guarantees reliable operation even for doors which are heavily frequented. All door parameters e.g. opening and closing speed as well as latching action, can be optimally adapted. Manual door opening can be supported by the drive (servo function) and ensures that even heavy doors can be opened more easily manually. The push & go function can be activated on request, i.e. the door is only slightly opened by hand and the automatic actuation opens the door completely. In low-energy mode, the drive moves the door at reduced speed. The optional CAN interface can be used to meet demanding requirements e.g. air lock control.

Application range

- Internal and external doors
- Railway stations and airports
- Hotels and gastronomy
- Hospitals and nursing homes for the elderly
- Educational institutions e.g. schools, nursery schools, day care centres
- Leisure facilities, e.g. baths, thermal baths, sport and wellness centres
- Administration and public buildings
- Food industry
## Technical data

### Product features

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<th>GEZE Slimdrive EMD F-IS</th>
<th>GEZE Slimdrive EMD Invers</th>
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<td></td>
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<td></td>
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<tr>
<td>Depth</td>
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<td>Leaf weight (max.) 1-leaf</td>
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<td>Hinge clearance (min.-max.) 2-leaf</td>
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<td>Door opening angle (max.)*</td>
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<td>DIN right</td>
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<td>Transom installation opposite hinge side with link arm</td>
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<td>Transom installation opposite hinge side with roller guide rail</td>
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<td>Door leaf installation hinge side with roller guide rail</td>
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<td>Capacity rating</td>
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<td>Power supply for external consumers (24 V DC)</td>
<td>1200 mA</td>
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<td>Temperature range</td>
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<td>IP 20</td>
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<td>Off, Automatic, Permanently open, Shop closing, Night</td>
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<td>Type of function</td>
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<td>●</td>
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<td>●</td>
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<td>Push &amp; Go</td>
<td>adjustable</td>
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<td>Operation</td>
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* = YES
* = DEPENDING ON THE TYPE OF INSTALLATION
** = SEE TABLE OVERVIEW OF TORQUES

NOTE: THE MAXIMUM POSSIBLE LEAF WEIGHT IN RELATION TO LEAF WIDTH CAN BE FOUND IN THE CHAPTER ON AREAS OF APPLICATION (DIAGRAMS)!
Overview of torques Slimdrive EMD-F

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<td>50 - 73 Nm</td>
<td>42 - 65 Nm</td>
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</table>
| Note: For automatic mode, the doors must be equipped with suitable hinges. A door stop is necessary.

EMD, EMD-F, EMD Invers

1-leaf doors

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<td>Transom installation opposite hinge side with link arm</td>
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* Not suitable for fire protection doors!

EMD, EMD-F, EMD F-IS, EMD Invers

2-leaf doors

<table>
<thead>
<tr>
<th>Leaf width (min.)</th>
<th>Leaf width (max.)</th>
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* Not suitable for fire protection doors!

Areas of application

Note

In low-energy mode the drive moves the swing door at reduced speed, thus fulfilling the safety requirement in DIN 18650 / EN 16005. The use of safety sensors to safeguard the system is only necessary in individual cases, taking the user group into account. In automatic mode, however, the swing area of the door must always be safeguarded with safety sensors.
Slimdrive EMD-F

X = Door width (mm)
Y = Door weight (kg)
1 = Link arm
2 = Roller guide rail
3 = Use of fire protection limit for roller guide rail

Note
We recommend the use of link arms for external doors. Wind loads and underpressure or excess pressure must also be taken into account. Dimensions marked by an asterisk (*) are valid for direct attachment.

Note: Diagram shows left-hand (ISO 6), right-hand (ISO 5) is reversed (mirror-image).

Transom installation with roller guide rail on the hinge side, single-leaf
Drawing no. 70106-ep01
Door overlap (max.) 30 mm
Door opening angle (max.) 105°

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338
Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width

Transom installation with roller guide rail on the opposite hinge side, single-leaf
Drawing no. 70106-ep02
Reveal depth (max.) -30 to +50 mm
Door opening angle (max.) 105°

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338
Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width

Transom installation with link arm on the opposite hinge side, single-leaf
Drawing no. 70106-ep03
Reveal depth (max.) 0-100 mm, 100-200 mm, 200-300 mm
Door opening angle (max.) 110°

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for link arm
3 = Space requirement for GC 338

Automatic swing door systems
GEZE SLIMDRIVE EMD
Swing Door Systems
ECturn, EMD, TSA 160 NT, Powerturn
Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width

Door leaf installation with roller guide rail on the hinge side, single-leaf
Drawing no. 70106-ep04
Door overlap (max.) 30 mm
Door opening angle (max.) 115°

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338
Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width

Transom installation with roller guide rail on the hinge side, double-leaf
Drawing no. 70106-ep21

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338
Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate  
B = Direct installation  
1 = Dimensional reference centre of hinge  
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact  
3 = Concealed cable routing 230 V / 50 Hz  
4 = Door leaf width  
5 = Hinge clearance

Transom installation with roller guide rail on the opposite hinge side, double-leaf
Drawing no. 70106-ep22

* = Direct installation  
1 = Space requirement for EMD-F/EMD Invers  
2 = Space requirement for roller guide rail  
3 = Space requirement for GC 338
Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width
5 = Hinge clearance

Transom installation with link arm on the opposite hinge side, double-leaf
Drawing no. 70106-ep23

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for link arm
3 = Space requirement for GC 338
Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width
5 = Hinge clearance

Door leaf installation with roller guide rail on the hinge side, double-leaf
Drawing no. 70106-ep24

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338
Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate  
B = Direct installation  
1 = Dimensional reference centre of hinge  
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact  
3 = Concealed cable routing 230 V / 50 Hz  
4 = Door leaf width  
5 = Hinge clearance

VGH Insurance company, Hannover, Germany (Photo: Lothar Wels)
Legend for the cable diagrams

**Cable**
1 = NYM-J 3 x 1.5 mm²
2 = J-Y(ST)Y 1 x 2 x 0.6 LG
3 = J-Y(ST)Y 2 x 2 x 0.6 LG
4 = J-Y(ST)Y 4 x 2 x 0.6 LG
5 = LiYY 2 x 0.25 mm²
6 = LiYY 4 x 0.25 mm²
7 = Scope of supply sensor strip or LiYY 5 x 0.25 mm²
8 = Route empty pipe with pull-wire inner diameter 10 mm

**Notes**
- Cable diagrams can also be prepared for specific building projects after receipt of order
- Version of standard cable diagrams in accordance with GEZE specifications
- Cable routing according to VDE0100/ IEE regulations
- Allow the cable for the drive to project at least 1500 mm out of the wall

1) Door transmission cable (including in the scope of supply for sensor strip), cable routing through a hole in the door leaf is not permitted for fire protection doors.
2) Cable exit for door drive, see installation drawings for Slimdrive EMD/EMD-F 70106-ep01 to -ep04
3) Cable including in the scope of supply for the sensor
4) Install in the direct vicinity of the door
5) Mains connection box WxHxD min. 65 x 65 x 57 with PG-11 duct, on site
6) Low-voltage connection box WxHxD min. 94 x 65 x 57 with PG-11 duct, on site
7) E.g. door transmission cable, 8-wire, art. no. 066922
8) Branch box, on site

**Abbreviations**
- HS = Main switch
- NOT = Emergency-stop switch
- UT = Circuit breaker CLOSE DOOR (only with F variant)
- KB = Contact sensor authorised
- PS = Programme switch
- ST = Emergency stop
- KI = Contact sensor inside
- KA = Contact sensor outside
- TOE = Door opener
- RM = Bar message
- RS = Smoke switch (only with F variant)
- RSZ = Smoke switch control unit (only with F variant)
- TS = Door closer
- MK = Magnetic contact
I = Feeder 230 V / 50 Hz
II = 10 A fuse
III = Connected value 230 W, 1 A 1-, 2-leaf with manual fixed leaf; connected value 460 W, 1 A with 2-leaf
IV = And / Or
V = Option

1-leaf

2-leaf

I = Transom installation
II = Door leaf installation
III = Fixed leaf
IV = Active leaf
GEZE swing door drive Slimdrive EMD Invers

Electromechanical swing door drive for 1-leaf and 2-leaf single-action doors (RWA fresh air and doors in escape and rescue routes)

Note: Diagram shows left-hand (ISO 6), right-hand (ISO 5) is reversed (mirror-image).

Transom installation with roller guide rail on the hinge side, single-leaf

Drawing no. 70106-ep01

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width
Transom installation with roller guide rail on the opposite hinge side, single-leaf
Drawing no. 70106-ep02

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width
Transom installation with link arm on the opposite hinge side, single-leaf

Drawing no. 70106-ep03

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for link arm
3 = Space requirement for GC 338

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width
**Door leaf installation with roller guide rail on the hinge side, single-leaf**

Drawing no. 70106-ep04

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338

**Installation with mounting plate (A) and direct installation (B)**

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width
**Transom installation with roller guide rail on the hinge side, double-leaf**

Drawing no. 70106-ep21

* = Direct installation

1 = Space requirement for EMD-F/EMD Invers

2 = Space requirement for roller guide rail

3 = Space requirement for GC 338

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate

B = Direct installation

1 = Dimensional reference centre of hinge

2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact

3 = Concealed cable routing 230 V / 50 Hz

4 = Door leaf width

5 = Hinge clearance
Transom installation with roller guide rail on the opposite hinge side, double-leaf

Drawing no. 70106-ep22

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width
5 = Hinge clearance
Transom installation with link arm on the opposite hinge side, double-leaf
Drawing no. 70106-ep23

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for link arm
3 = Space requirement for GC 338

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width
5 = Hinge clearance
Door leaf installation with roller guide rail on the hinge side, double-leaf

Drawing no. 70106-ep24

* = Direct installation
1 = Space requirement for EMD-F/EMD Invers
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338

Installation with mounting plate (A) and direct installation (B)

A = Installation with mounting plate
B = Direct installation
1 = Dimensional reference centre of hinge
2 = Concealed cable routing for sensors, door opener, programme switch and lock switch contact
3 = Concealed cable routing 230 V / 50 Hz
4 = Door leaf width
5 = Hinge clearance
GEZE swing door drive TSA 160 NT

Electrohydraulic swing door drive for 1 and 2-leaf single-action doors

The TSA 160 NT is an electronically controlled hydraulic swing door system for single-action doors made of wood, steel, aluminium or plastic with leaf weights of up to 310 kg and leaf widths up to 1600 mm. The drive works with a hydraulic pump system during opening. The closing process is by means of a closing spring mechanism and adjustable hydraulic valves. The TSA 160 NT also has low power consumption and is low-maintenance. The door can be opened by hand in the event of a power failure. Manual opening is also possible with motor operation switched on. A reinforced and highly stable link arm meets the requirements of large and heavy doors which are highly frequented. The TSA 160 NT masters large amounts of foot traffic reliably and easily.

Application range

- Internal and external doors
- Railway stations and airports
- Hotels and gastronomy
- Hospitals and nursing homes for the elderly
- Department stores and shopping centre
- Educational institutions e.g. schools, nursery schools, day care centres
- Leisure facilities, e.g. baths, thermal baths, sport and wellness centres
- Administration and public buildings
- Food industry
### Technical data

#### Product features

<table>
<thead>
<tr>
<th>Feature</th>
<th>GEZE TSA 160 NT</th>
<th>GEZE TSA 160 NT Invers</th>
<th>GEZE TSA 160 NT IS</th>
<th>GEZE TSA 160 NT EN7</th>
<th>GEZE TSA 160 NT IS EN7</th>
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<tbody>
<tr>
<td>Height</td>
<td>100 mm</td>
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<td>Width</td>
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<tr>
<td>Depth</td>
<td>121 mm</td>
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<tr>
<td>Leaf weight (max.) 1-leaf</td>
<td>250 kg</td>
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<td>310 kg</td>
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<td>Hinge clearance (min.-max.) 2-leaf</td>
<td>1470 – 2800 mm</td>
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<td></td>
<td>1470 – 3200 mm</td>
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<td>Leaf width (min.-max.)</td>
<td>690 – 1400 mm</td>
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<td>690 – 1600 mm</td>
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<td>Reveal depth (max.)*</td>
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<td>400 mm</td>
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<td>Door overlap (max.)*</td>
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<td>20 mm</td>
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<td>Drive type</td>
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<td>Door opening angle (max.)*</td>
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<td>Spring pre-load**</td>
<td>EN3 – EN6</td>
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<td>EN7</td>
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<td>Z-variant (pulling)</td>
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<td>●</td>
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<td>Z-variant (pushing)</td>
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<td></td>
<td>● ● ●</td>
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<td>DIN left</td>
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<td></td>
<td></td>
<td>● ● ●</td>
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<tr>
<td>DIN right</td>
<td>● ● ●</td>
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<tr>
<td>Transom installation opposite hinge side</td>
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<tr>
<td>Transom installation hinge side with link arm</td>
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<td>Transom installation hinge side with roller guide rail</td>
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<tr>
<td>Mechanical latching action</td>
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<td></td>
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<td>Electrical closing sequence control</td>
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<td></td>
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<tr>
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<td></td>
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<td>Disconnection from mains</td>
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<td>Activation delay (max.)</td>
<td></td>
<td></td>
<td></td>
<td>10 s</td>
<td></td>
</tr>
<tr>
<td>Operating voltage</td>
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<td></td>
<td></td>
<td>230 V</td>
<td></td>
</tr>
<tr>
<td>Frequency of supply voltage</td>
<td></td>
<td></td>
<td></td>
<td>50 – 60 Hz</td>
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<tr>
<td>Capacity rating</td>
<td>300 W</td>
<td></td>
<td></td>
<td>450 W</td>
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<td>Power supply for external consumers (24 V DC)</td>
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<td></td>
<td></td>
<td>1200 mA</td>
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<tr>
<td>Temperature range</td>
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<td>-15 – 60 °C</td>
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<td>IP rating</td>
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<td></td>
<td></td>
<td>IP 20</td>
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<tr>
<td>Operating modes</td>
<td>Off, Automatic, Permanently open, Shop closing, Night</td>
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<tr>
<td>Type of function</td>
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<td>Fully automatic</td>
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<td>Automatic function</td>
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<td></td>
<td>●</td>
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<td>Key function</td>
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<tr>
<td>Inverse function (opening by spring force)</td>
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<td>● ● ●</td>
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<td>●</td>
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<tr>
<td>Vestibule function</td>
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<td>Obstruction detection</td>
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<td>● ● ●</td>
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</tr>
<tr>
<td>Automatic reversing</td>
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<td>●</td>
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<tr>
<td>Push &amp; Go</td>
<td>adjustable</td>
<td></td>
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<tr>
<td>Operation</td>
<td>Display programme switch DPS</td>
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<tr>
<td>Parameter setting</td>
<td>Display programme switch DPS</td>
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<tr>
<td>Approvals</td>
<td>DIN 18650, EN 16005</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* ● = YES
* * = DEPENDING ON THE TYPE OF INSTALLATION
* ** = SEE TABLE OVERVIEW OF TORQUES

NOTE: THE MAXIMUM POSSIBLE LEAF WEIGHT IN RELATION TO LEAF WIDTH CAN BE FOUND IN THE CHAPTER ON AREAS OF APPLICATION (DIAGRAMS)!
### Overview of torques TSA 160 NT

<table>
<thead>
<tr>
<th></th>
<th>pushing (min.-max.)</th>
<th>pulling (min.-max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring pre-load</td>
<td>3 - 6</td>
<td>2 - 5</td>
</tr>
<tr>
<td>Closer size EN 1154</td>
<td>7 (with TSA 160 NT EN7)</td>
<td>6 (with TSA 160 NT EN7)</td>
</tr>
<tr>
<td>Closer torques:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>torque exerted by the closing spring during automatic opening</td>
<td>20 Nm - &gt;60 Nm</td>
<td>8 Nm - 30 Nm</td>
</tr>
<tr>
<td>Opening torque:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>torque exerted by the door during automatic opening</td>
<td>150 Nm - 90 Nm</td>
<td>70 Nm - 40 Nm</td>
</tr>
<tr>
<td>Opening torque:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>manual torque to be exerted for door opening</td>
<td>35 Nm - 110 Nm</td>
<td>13 Nm - 45 Nm</td>
</tr>
</tbody>
</table>

Note: For automatic mode, the doors must be equipped with suitable hinges. A door stop is necessary.

### TSA 160 NT minimum and maximum leaf widths

#### 1-leaf doors

<table>
<thead>
<tr>
<th>1-leaf doors</th>
<th>Leaf width (min.)</th>
<th>Leaf width (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSA 160 NT pushing</td>
<td>690 mm</td>
<td>1400 mm / 1600 mm²</td>
</tr>
<tr>
<td>TSA 160 NT pulling</td>
<td>950 mm (with operator displacement=0)</td>
<td>1400 mm / 1600 mm²</td>
</tr>
<tr>
<td>TSA 160 NT Z</td>
<td>690 mm</td>
<td>1400 mm / 1600 mm²</td>
</tr>
</tbody>
</table>

1) Also on smoke and fire protection doors
2) TSA 160 NT EN7

#### TSA 160 NT minimum and maximum leaf widths, hinge clearance for 2-leaf doors

<table>
<thead>
<tr>
<th>2-leaf doors</th>
<th>Hinge clearance (min.)</th>
<th>Hinge clearance (max.)</th>
<th>Leaf width (min.) active leaf</th>
<th>Leaf width (min.) fixed leaf</th>
<th>Leaf width (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSA 160 NT IS pushing</td>
<td>1470 mm</td>
<td>2800 mm / 3200 mm⁶</td>
<td>690 mm</td>
<td>400 mm</td>
<td>1400 mm / 1600 mm²</td>
</tr>
<tr>
<td>TSA 160 NT Z-IS pulling</td>
<td>1470 mm</td>
<td>2800 mm / 3200 mm⁶</td>
<td>690 mm</td>
<td>650 mm</td>
<td>1400 mm / 1600 mm²</td>
</tr>
<tr>
<td>TSA 160 NT IS/TIS pushing</td>
<td>1260 mm</td>
<td>2800 mm / 3200 mm⁶</td>
<td>690 mm</td>
<td>400 mm</td>
<td>1400 mm / 1600 mm²</td>
</tr>
<tr>
<td>TSA 160 NT IS/TIS pulling</td>
<td>1360 mm</td>
<td>2800 mm / 3200 mm⁶</td>
<td>690 mm</td>
<td>650 mm</td>
<td>1400 mm / 1600 mm²</td>
</tr>
</tbody>
</table>

1) Also on smoke and fire protection doors
2) The minimum hinge width must be observed!
3) TSA 160 NT IS EN7
Areas of application

TSA 160 NT

X = Door width (mm)
Y = Door weight (kg)
1 = Link arm
2 = Roller guide rail

TSA 160 NT EN7

X = Door width (mm)
Y = Door weight (kg)
1 = Link arm
2 = Roller guide rail
Automatic swing door systems

GEZE TSA 160 NT

Note: Diagram shows left-hand (ISO 6), right-hand (ISO 5) is reversed (mirror-image).

Transom installation with roller guide rail on the hinge side, single-leaf

Drawing no. 70423-ep02

A = Direct installation
B = Installation with mounting plate
1 = Concealed cable routing

* = Installation with mounting plate
1 = Space requirement for TSA 160 NT
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338
TSA 160 NT

<table>
<thead>
<tr>
<th>Soffit depth L (from-to)</th>
<th>Dimension X for roller guide rail with TSA 160 NT Z</th>
<th>Door width (min.)</th>
<th>Opening angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 0 - 25 mm</td>
<td>186 mm</td>
<td>690 mm</td>
<td>109° - 113°</td>
</tr>
<tr>
<td>&gt; 25 - 50 mm</td>
<td>192 mm</td>
<td>690 mm</td>
<td>113° - 115°</td>
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<td>&gt; 50 - 75 mm</td>
<td>203 mm</td>
<td>690 mm</td>
<td>115° - 110°</td>
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<td>&gt; 75 - 100 mm</td>
<td>215 mm</td>
<td>690 mm</td>
<td>110° - 105°</td>
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<tr>
<td>&gt; 100 - 125 mm</td>
<td>229 mm</td>
<td>690 mm</td>
<td>105° - 100°</td>
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<tr>
<td>&gt; 125 - 150 mm</td>
<td>244 mm</td>
<td>703 mm</td>
<td>100° - 97°</td>
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<tr>
<td>&gt; 150 - 175 mm</td>
<td>262 mm</td>
<td>721 mm</td>
<td>97° - 95°</td>
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<td>&gt; 175 - 200 mm</td>
<td>280 mm</td>
<td>739 mm</td>
<td>95° - 90°</td>
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</tbody>
</table>

Transom installation with link arm on the opposite hinge side, single-leaf

Drawing no. 70423-ep01

* = Installation with mounting plate
1 = Space requirement for TSA 160 NT
2 = Space requirement for link arm
3 = Space requirement for GC 338
Transom installation with roller guide rail on the hinge side, double-leaf
Drawing no. 70423-ep22

A = Direct installation
B = Installation with mounting plate
1 = Concealed cable routing

* = Installation with mounting plate
1 = Space requirement for TSA 160 NT
2 = Space requirement for roller guide rail
3 = Space requirement for GC 338
A = Direct installation  
B = Installation with mounting plate  
1 = Concealed cable routing  
2 = only required for B > 2000

Transom installation with link arm on the opposite hinge side, double-leaf  
Drawing no. 70423-ep11

X = Spindle extension  
* = Installation with mounting plate  
1 = Space requirement for TSA 160 NT  
2 = Space requirement for link arm  
3 = Space requirement for GC 338
A = Direct installation
B = Installation with mounting plate
1 = Concealed cable routing
2 = only required for B > 2000
Legend for the cable diagrams

Cable
1 = NYM-J 3 x 1.5 mm²
2 = J-Y(ST)Y 1 x 2 x 0.6 LG
3 = J-Y(ST)Y 2 x 2 x 0.6 LG
4 = J-Y(ST)Y 4 x 2 x 0.6 LG
5 = LiYY 2 x 0.25 mm²
6 = LiYY 4 x 0.25 mm²
7 = Scope of supply sensor strip or LiYY 5 x 0.25 mm²
8 = Route empty pipe with pull-wire inner diameter 10 mm

Operator displacement
AV = Cable exit
60 mm = 580 mm
50 mm = 590 mm
40 mm = 600 mm (standard)
30 mm = 610 mm
20 mm = 620 mm
10 mm = 630 mm
0 mm = 640 mm

Notes
- Cable diagrams can also be prepared for specific building projects after receipt of order
- Version of standard cable diagrams in accordance with GEZE specifications
- Cable routing according to VDE0100/ IEE regulations
- Allow the cable for the drive to project at least 1500 mm out of the wall

1) Door transmission cable (including in the scope of supply for sensor strip), cable routing through a hole in the door leaf is not permitted for fire control doors.
2) Cable exit for door drive see sketch A and B
3) Cable including in the scope of supply for the sensor
4) Install in the direct vicinity of the door
7) E.g. door transmission cable, 8-wire, art. no. 066922
8) Branch box, on site

Abbreviations
HS = Main switch
NOT = Emergency-stop switch
UT = Circuit breaker CLOSE DOOR (only with F variant)
KB = Contact sensor authorised
PS = Programme switch
ST = Emergency stop
KI = Contact sensor inside
KA = Contact sensor outside
TOE = Door opener
RM = Bar message
RS = Smoke switch (only with F variant)
RSZ = Smoke switch control unit (only with F variant)
TS = Door closer
MK = Magnetic contact
Positioning of the movement detectors

I = Positioning of movement detector 1-leaf
II = Positioning of movement detector 2-leaf
III = Positioning of movement detector 2-leaf, 2E

I = Feeder 230 V / 50 Hz
II = 10 A fuse
III = Connected value 300 W 1.3 A for 1-leaf with manual fixed leaf. Connected value 600 W 2.6 A for 2-leaf
IV = And / Or
V = Option
TSA 160 NT cable plan single-leaf

TSA 160 NT cable plan double-leaf

TSA 160 NT cable exit

1 = 2-leaf
II = 2-leaf with manual fixed leaf
III = Fixed leaf
IV = Active leaf

AV = Operator displacement
I = TSA 160 NT installation hinge side
II = TSA 160 NT installation opposite hinge side
III = TSA 160 NT-Z installation hinge side
IV = Drive left - pulling
V = Drive right - pulling
VI = from top of leaf, dimension for spindle extensions must be added
VII = Cable exit
GEZE swing door drive Powerturn

Fully automatic swing door drive for 1 and 2-leaf single-action doors

The new swing door drive Powerturn offers comfort and safety for every access situation. The fully automatic drive is powerful and opens doors with leaf widths of up to 1600 mm or leaf weights of up to 300 kg reliably and safely. It offers freedom to design for a wide range of uses. The unique „Smart swing“ function allows for easy manual use even of large, heavy doors, e.g. fire protection doors or façade doors, at any time. The powerful closing spring is once pre-tensioned and does not have to be moved permanently during passage. In addition, the „Smart swing“ function reduces energy costs during operation and in the „permanently open“ position. The small overall height and discreet design make it flexible and future-proof for multifunction safety doors, safe escape and rescue routes and complex interlocking door systems. This makes the Powerturn an excellent example of „Universal Design - made in Germany“. Installation is straightforward and safe due to the simple GEZE installation system.

Area of application

• Internal and external doors
• Railway stations and airports
• Hotels and gastronomy
• Hospitals and homes for the elderly
• Department stores and shopping centres
• Educational institutions, e.g. schools, nursery schools, day care centres
• Leisure facilities, e.g. baths, thermal baths, sport and wellness centres
• Administration and public buildings
• Food industry
### Technical data

#### Product features

<table>
<thead>
<tr>
<th>Feature</th>
<th>GEZE Powerturn 1-leaf/2-leaf</th>
<th>GEZE Powerturn F</th>
<th>GEZE Powerturn F-IS</th>
<th>GEZE Powerturn FR</th>
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<td>DIN 18650, EN 16005, DIN 18263-4</td>
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</table>

* = YES
** = DEPENDING ON THE TYPE OF INSTALLATION
*** = OPTIONAL FOR 2-LEAF SYSTEMS AND TRANSOM INSTALLATION OR ONLY FOR THE IS VARIANTS

NOTE: THE MAXIMUM POSSIBLE LEAF WEIGHT IN RELATION TO LEAF WIDTH CAN BE FOUND IN THE CHAPTER ON AREAS OF APPLICATION (DIAGRAMS)!
Automatic swing door systems

GEZE POWERTURN

Area of application

Note

The movement parameters can be set in such a way that the safety requirements for low-energy operation in compliance with DIN 18650 / EN 16005 are met. The drive then moves the swing door at reduced speed. The use of safety sensors to safeguard the system is only necessary in individual cases, taking the user group into account. In automatic mode, however, the swing area of the door must always be safeguarded with safety sensors.

Diagram showing the use of Powerturn with opening times of up to 90° door opening angle

\[ X = \text{Door width (mm)} \]
\[ Y = \text{Door weight (kg)} \]

Opening times Powerturn

To ensure the safety requirements in low-energy operation

<table>
<thead>
<tr>
<th>Door weight (kg)</th>
<th>60</th>
<th>90</th>
<th>120</th>
<th>150</th>
<th>180</th>
<th>210</th>
<th>240</th>
<th>270</th>
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<td>3.4</td>
<td>3.9</td>
<td>4.3</td>
<td>4.7</td>
<td>5.1</td>
<td>5.5</td>
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<td>900</td>
<td>3.1</td>
<td>3.8</td>
<td>4.4</td>
<td>4.9</td>
<td>5.3</td>
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<tr>
<td>1000</td>
<td>3.4</td>
<td>4.2</td>
<td>4.8</td>
<td>5.4</td>
<td>5.9</td>
<td>6.4</td>
<td>6.9</td>
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<td>1100</td>
<td>3.8</td>
<td>4.6</td>
<td>5.3</td>
<td>6.0</td>
<td>6.5</td>
<td>7.1</td>
<td>7.5</td>
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<td>1200</td>
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<td>5.0</td>
<td>5.8</td>
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<td>8.2</td>
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<td>1300</td>
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<td>6.3</td>
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<td>8.9</td>
<td>9.6</td>
<td>10.3</td>
<td>10.9</td>
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<td>1600</td>
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<td>8.7</td>
<td>9.5</td>
<td>10.3</td>
<td>11.0</td>
<td>11.6</td>
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</table>

Illustration of the minimum opening times to be set depending on the door weight and door leaf width for a door opening from 0° to 80° or for a closing movement from 90° to 10° door opening angle.

Overview of Powerturn torques

To ensure the safety requirements in low-energy operation in accordance with DIN 18650 / EN 16005

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<thead>
<tr>
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<td>Nm (Door)</td>
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<td>0</td>
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<td>60</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>100</td>
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<tr>
<td>Maximum opening torque (automatic)</td>
<td>Nm (Door)</td>
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<td>121</td>
<td>143</td>
<td>127</td>
<td>180*</td>
<td>180*</td>
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<tr>
<td>Manual opening torque (Operating mode Off)</td>
<td>Nm (Door)</td>
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<td>9</td>
<td>11</td>
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<td>19</td>
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</table>

* = Restricted according to DIN 18263-4
K = Transom installation
T = Door leaf installation
BS = Hinge side
BGS = Opposite hinge side
Reveal / max. door opening angle
Transom installation opposite hinge side link arm

\[
\begin{array}{c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c}
0 & 20 & 40 & 60 & 80 & 100 & 120 & 140 & 160 & 180 & 200 \\
0 & 50 & 100 & 150 & 200 & 250 & 300 & 350 & 400 & 450 & 500 \\
\end{array}
\]

- \( X \) = Reveal depth (mm)
- \( Y \) = Max. door opening angle (°)
- 1 = Door opening angle
- 2 = Door opening angle with sensor link arm

Transom installation hinge side roller guide rail

\[
\begin{array}{c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c}
0 & 20 & 40 & 60 & 80 & 100 & 120 & 140 & 160 & 180 & 200 \\
0 & 50 & 100 & 150 & 200 & 250 & 300 & 350 & 400 & 450 & 500 \\
\end{array}
\]

- * = Preload
- \( X \) = Reveal depth (mm)
- \( Y \) = Max. door opening angle (°)
- 1 = Lever 330 mm
- 2 = Lever 450 mm
Transom installation with roller guide rail on the hinge side, 1-leaf and 2-leaf

Drawing no. 70109-ep01

* = Important functional dimension
AV = Spindle extension
1 = Base upper edge of door
2 = Space requirement sensors

Mounting plate fitting dimensions

A = DIN left
B = DIN right
1 = Dimensional reference centre of hinge / upper edge of door
2 = Concealed cable routing possible in the hatched area, e.g. Ø 20 mm for the mains connection or low voltage connection
3 = Orientation arrow for precise positioning of the mounting plate
4 = Hinge size

2-leaf installation with intermediate cover with divided or continuous cover

1 = Base plate
Transom installation with roller guide rail on the opposite hinge side, 1-leaf and 2-leaf

Drawing no. 70109-ep02

* = Important functional dimension
AV = Spindle extension
1 = Base lower edge of lintel
2 = Space requirement sensors

Mounting plate fitting dimensions

A = DIN left
B = DIN right
1 = Dimensional reference centre of hinge / lower edge of frame
2 = Concealed cable routing possible in the hatched area, e.g. Ø 20 mm for the mains connection or low voltage connection
3 = Orientation arrow for precise positioning of the mounting plate
4 = Hinge size

2-leaf installation with intermediate cover with divided or continuous cover

1 = Base plate
Door leaf installation with roller guide rail on the hinge side, 1-leaf and 2-leaf

Drawing no. 70109-ep03

* = Important functional dimension
AV = Spindle extension
1 = Base upper edge of door
2 = Space requirement sensors

Mounting plate fitting dimensions

A = DIN left
B = DIN right
1 = Dimensional reference centre of hinge / upper edge of door
2 = Orientation arrow for precise positioning of the mounting plate
3 = Hinge size
Door leaf installation with roller guide rail on the opposite hinge side, 1-leaf and 2-leaf

Drawing no. 70109-ep04

* = Important functional dimension
AV = Spindle extension
1 = Base lower edge of lintel
2 = Space requirement sensors

Mounting plate fitting dimensions

A = DIN left
B = DIN right
1 = Dimensional reference centre of hinge / lower edge of frame
2 = Orientation arrow for precise positioning of the mounting plate
3 = Hinge size
Door leaf installation with link arm on the hinge side, 1-leaf and 2-leaf

Drawing no. 70109-ep06

* = Important functional dimension
AV = Spindle extension
1 = Base upper edge of door
2 = Space requirement sensors

Mounting plate fitting dimensions

A = DIN left
B = DIN right
1 = Dimensional reference centre of hinge
2 = Orientation arrow for precise positioning of the mounting plate
3 = Hinge size
Transom installation with link arm on the opposite hinge side, 1-leaf and 2-leaf

Drawing no. 70109-ep05

* = With sensor adapter 35.5 mm
** = Important functional dimension
AV = Spindle extension

Mounting plate fitting dimensions

1 = Dimensional reference centre of hinge / upper edge of door
2 = Concealed cable routing possible in the hatched area, e.g. Ø 20 mm for the mains connection or low voltage connection
3 = Orientation arrow for precise positioning of the mounting plate
4 = Hinge size

2-leaf installation with intermediate cover with divided or continuous cover

1 = Base plate
Legend for the cable diagrams

**Cable**
1 = NYM-J 3 x 1.5 mm²
2 = J-Y(ST)Y 1 x 2 x 0.6 LG
3 = J-Y(ST)Y 2 x 2 x 0.6 LG
4 = J-Y(ST)Y 4 x 2 x 0.6 LG
5 = LiYY 2 x 0.25 mm²
6 = LiYY 4 x 0.25 mm²
7 = Scope of supply sensor strip or LiYY 5 x 0.25 mm²
8 = Route empty pipe with pull-wire inner diameter 10 mm

**Notes**
- Cable diagrams can also be prepared for specific building projects after receipt of order
- Version of standard cable diagrams in accordance with GEZE specifications
- Cable routing according to VDE0100/ IEE regulations
- Allow the cable for the drive to project at least 1500 mm out of the wall

1) Door transmission cable (included in the scope of supply for sensor strip), cable routing through a hole in the door leaf is not permitted for fire control doors.
2) Cable exit for door drive, see installation drawings for Powerturn
3) Cable included in the scope of supply for the sensor
4) Install in the direct vicinity of the door
5) Mains connection box WxHxD min. 65 x 65 x 57 with PG-11 duct, on site
6) Low-voltage connection box WxHxD min. 94 x 65 x 57 with PG-11 duct, on site
7) E.g. door transmission cable, 8-wire, art. no. 066922
8) Branch box, on site

**Abbreviations**
- **HS** = Main switch
- **NOT** = Emergency-stop switch
- **UT** = Circuit breaker CLOSE DOOR (only with F variant)
- **KB** = Contact sensor authorised
- **PS** = Programme switch
- **ST** = Emergency stop
- **KI** = Contact sensor inside
- **KA** = Contact sensor outside
- **TOE** = Door opener
- **RM** = Bar message
- **RS** = Smoke switch (only with F variant)
- **RSZ** = Smoke switch control unit (only with F variant)
- **TS** = Door closer
- **MK** = Magnetic contact

---

I = Feeder 230 V / 50 Hz
II = 10 A fuse
III = Connected value 230 W, 1 A 1-, 2-leaf with manual fixed leaf; connected value 400 W, 1 A with 2-leaf
IV = And / Or
V = Option
Automatic swing door systems

GEZE POWERTURN

1-leaf

2-leaf

I = Transom installation
II = Door leaf installation
III = Fixed leaf
IV = Active leaf

Photo: GEZE GmbH
Accessories for swing door systems

Hood, mounting plate, link arm, roller guide rail with lever

**Hood**
The hood is available in an anodised or coloured finish. In the case of double-leaf versions, the hood can be ordered as a continuous variant or with intermediate hood.

**Mounting plate for drives (option)**
A mounting plate may be necessary, depending on the installation situation. A mounting plate is generally recommended to make installation easier. A respective mounting plate is supplied according to the hood version.

**Link arms**
are offered for different reveal depths

**Roller guide rail with lever**
Installation depends on the type of hinge action chosen.
Operating automatic swing doors

Programme switches for the selection of the operating mode for automatic swing doors

Note
More detailed information on the following accessories can be found in the catalogue: GEZE actuation devices and sensor systems

GEZE offers programme switches for a wide range of individual requirements. The switches are suitable for universal use – for surface-mounted or flush-mounted installation. The following switch types are available:

Display programme switch (DPS)
Key programme switch (TPS)
Mechanical programme switch (MPS)

The following operating modes can be set:

“Permanently open”
The door moves to the OPEN position and remains open. Movement detector or opening button are deactivated.

“Night”
The movement detectors are switched inactive, the door closes. The door can only be opened with contact sensor authorised (KB) or manual release. Option: The door leaves are locked electrically to prevent forced opening.

“Shop closing” (One-direction operation from the inside to the outside)
The door only opens and closes when someone goes out from the inside.
The movement detector outside is switched inactive, the one inside is switched active.

“Automatic”
The door opens as soon as it is actuated via the movement detector or keys, and closes after a certain individually adjustable time. Safety sensors protect the leaves’ travel path. If there is someone in the door opening, the door will not close.

“OFF” (depending on model)
Drive motor, locking, actuation and safety sensors are switched off, the door leaves can be moved manually.

Key switch
The programme switch can be blocked using a key switch. A key switch is required for the F/R variants.

Securing the programme switches
The mechanical programme switch (MPS) is also available in a lockable version. The display programme switch (DPS) and key programme switch (TPS) can be combined with a key switch. Alternatively, these programme switches can be secured using a code.
Automatic actuation

Reliable actuation with GEZE sensors

Radar movement detector
Radar movement detectors register all objects that move within the radar field. All movements within the radiation range are recorded as a switching pulse which is forwarded as a door opening signal. The pre-programmed convenience setting of the GEZE radar movement detectors ensures they can be put into operation quickly. Automatic configuration is possible via keys or a remote control. Reliable detection is achieved with a clearly defined radar field. Energy can be saved through detection of people's direction of movement. Excessive door opening is avoided since cross-traffic can be faded out.

Radar movement detector

GEZE TSA 160 NT IS and radar movement detector, Andels Hotel, Berlin, Germany (Photo: Stefan Dauth)
Manual actuation

**Push buttons**
GEZE push buttons for the wireless actuation of system doors – reliable, convenient and safe at the push of a button.

**Capacitive push button**
The design-oriented and sturdy LED sensor button makes intuitive and straightforward operation possible. No great efforts are required for actuation – touching the button slightly is sufficient. Suitable for use both indoors and outdoors, the LED sensor button can be recognised easily in the dark thanks to the blue LED lighting. In addition, the sensor has raised Braille lettering on it. A visual signal initiates actuation through the push button. The push button is waterproof, impact-resistant and vandalism-proof. This makes it very well suited for outdoor use or installation in the floor.

**Non-contact infrared sensor**
Open doors in a flash: With GEZE infrared sensors, internal doors without precise perception requirement can be actuated cleanly and comfortably. Active infrared sensors ensure hygienic access to toilet facilities, for example. The risks of infection are also minimised in hotel kitchens, hospitals and doctors’ surgeries. The impulse generator is installed at hand height and precisely detects people and objects – independently of their direction of movement – both in the direct vicinity of only 5 cm as well as 0.6 m away. The different scanning ranges can be optimally adapted to existing environmental conditions and the wishes of the user groups. The non-contact sensor system provides maximum operating convenience – people only need to approach them to trigger the automatic opening mechanism. The optimum system structure permits simple and time-saving installation in the flush-mounted box.

**Radio actuation**
GEZE radio transmitters are used for wireless actuation of doors and windows as a multi-channel solution. For every additional channel, an additional electrical device or function can be switched at the push of a button. Thanks to the very small size of the radio modules, radio transmitters can easily be integrated in the drive or in a flush-mounted box. They can also be clipped directly into the elbow switched and mounted without wires on glass.
Electronic protection

Safety sensor strips
Safety sensor strips are used to monitor and safeguard the pivoting area of automatic swing door leaves. They are installed on both sides of the door, directly on the leaf. This guarantees maximum protection both during opening and closing of the door.

GEZE safety sensors work with infrared light. Electromagnetic waves which are invisible to the human eye record people or objects within the area of detection. A receiver absorbs the reflected infrared beams and converts them into an electric signal which is transmitted to the control unit of the door drive. Door movement in the opening direction is stopped as soon as the sensor registers an obstacle. It is possible for the wall areas to be faded out by the safety sensors (teachable). In closing direction, the sensor actuates the drive of the closing door and opens it again.

GC 338 sensor strip
The energy- and space-saving sensor strip GC 338 has a very large safety range and offers enhanced protection on the primary and secondary closing edges. In addition, the sensor has a wall blanking feature which makes it possible to guarantee maximum safety even with doors that open against walls. Safeguarding all GEZE swing door drives with door leaf widths of up to 1500 millimetres is achieved with only one sensor system. The GC 338 not only offers advantages for installation and commissioning – the complete door system is supplied via an interface. The sensor strip automatically adapts to its environment. This saves learning time and installation costs. The GEZE sensor strip GC 338 has the following features:

- Reliable function under all weather and floor conditions up to 3.5 m in accordance with DIN 18650 / EN 16005
- One sensor system safeguards door leaf widths of up to 1500 mm
- Wall blanking: The sensor can detect a wall and blank this out automatically
- Elegant roller guide rail can even be used with slim door profiles
- Current consumption in operating mode: 200 mA
- Quick and easy installation of the modules using the SNAP-IN mechanism, allowing modules to be positioned and fixed in the profile without tools
Safety sensors on door leaf with vertical handle bars

To secure the door in accordance with DIN 1860 / EN 16005, the following modules are required additionally for each door side:
- 1 transmitter module
- 1 receiver module

Please find more details in the GC 338 operation manual.

Installation on the hinge side

A = Handle bar left
B = Handle bar right

Installation on the opposite hinge side

1 = optional power supply, concealed routing possible. Drill hole Ø 10 for concealed cable routing.
Lx = Profile length 1100 mm : Lx = 489 mm; profile length 1500 mm : Lx = 699 mm

 Swing Door Systems 79
Sensor roller guide rail GC GR - the ideal combination of safety and design

The GC GR sensor roller guide rail is available for the complete range of Slimdrive EMD models as well as all the TSA 160 NT and Powerturn drive versions. The sensor and the roller roller guide rail can be put together in such a way that they look like a single compact and more integrated design. The features at a glance:

- Suitable for single and double-leaf swing door
- Available for all TSA 160 NT, Slimdrive EMD and Powerturn variants with roller guide rail
- Sensor and roller roller guide rail profile are available separately, facilitating retrofittings to existing systems
- The rain cover is available as accessory

![Diagram of Sensor roller guide rail GC GR](image)

1 = Sensor roller guide rail  
2 = Sensor strip  
3 = End cap for sensor roller guide rail  
4 = End cap for sensor strip

Adapter for sensor and link arm for slimdrive EMD and TSA 160 NT - Integration of link arm and sensor strips on one level

Exactly similar as in case of the sensor roller guide rail GC GR, the newly introduced adapter for link arm and sensor enables an optimal installation on doors with slim frames. The link arm program of the Slimdrive EMD and TSA 160 NT drives was re-worked, so that the adapter can be combined with new link arms. Advantages:

- Better integration of link arm and sensor strip GC 338, GC 335 or GC 338 into the door design
- Simple installation, in particular in case of slim door frames
- With the new link arms a maximum reveal depth of 400 mm can now be bridged

![Diagram of Adapter for sensor and link arm for Slimdrive EMD and TSA 160 NT](image)
EMD and GC GR (GC 338) transom installation with roller guide rail on the hinge side
Drawing no. 70106-ep35

EMD and GC GR (GC 338) transom installation with roller guide rail on the opposite hinge side
Drawing no. 70106-ep35
**TSA 160 NT and GC GR (GC 338) transom installation with roller guide rail on the hinge side**

Drawing no. 70106-ep35

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**GC GR (GC 338) 1200 mm with roller guide rail, single leaf**

Drawing no. 70106-ep35

Note: For double-leaf doors mirror and add this view.

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A = Hinge side
B = Opposite hinge side
L = Length
**Service Tools**

**GEZEconnects**
Bluetooth is an internationally standardised short-distance radio signal with a range of up to ten metres. The software GEZEconnects makes wireless connection via Bluetooth possible between a computer and the automatic door systems from GEZE. All door system settings can be carried out via an intuitive graphic interface, stored, sent by e-mail and transferred to a word processing programme as a protocol. Diagnosis functions show the most important function parameters of the door system in real time, so that problems are recognised at a glance and can be eliminated. All the pre-settings can be taken over very easily for further door systems. The convenient documentation of initial operation, servicing and diagnosis protocols as well as all statistical data can be downloaded at any time. Password protection to freeze operating parameters and servicing data guarantees there will be no unauthorised modifications made.

**Service terminal ST 220**
Mobile, handy and straightforward – that is the parameter setting for the automatic GEZE door systems using the service terminal ST 220. Communication and data exchange between the service terminal and the door drive is via an integrated RS485 interface. The large illuminated display is easy to operate thanks to the plain text display. The service terminal is equipped with a readout function for servicing and diagnosis work. Power is supplied via the door system. Password protection to freeze operating parameters and servicing data guarantees there will be no unauthorised modifications made.

A service adapter for the ST 220 which is available separately can be laterally inserted from the outside into the drive, allowing operating parameters and service data to be read out and parameters to be set without the drive cover having to be removed.

Note
GEZE service tools are available for the Slimdrive EMD, TSA 160 NT and Powerturn range of drives.
Automatic swing door systems
ECturn, EMD, TSA 160 NT AND POWERTURN

References

Vienna University of Economics and Business, Austria (Photo: Sigrid Rauchdobler)

Vitra Haus, Weil am Rhein, Germany (Photo: Oliver Look)
Automatic swing door systems

ECturn, EMD, TSA 160 NT AND POWERTURN

Municipal Library, Stuttgart, Germany (Photo: Lazaros Filoglou)

Danish Association for Disabled, Taastrup, Denmark (Photo: Morten Bak)
You will find more product information in the relevant brochures, see ID numbers.

## Door technology

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## Automatic door systems

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## Smoke and heat extraction and window technology

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## Safety technology

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## Glass systems

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Door technology

The functionality, superior performance and reliability of GEZE door closers are impressive. A common design across the range, the ability to use them on all common door leaf widths and weights, and the fact that they can be individually adjusted makes their selection simple. They are continually being improved and enhanced with up-to-date features. For example, the requirements of fire control and accessibility are fulfilled with a door closer system.

Automatic door systems

GEZE automatic door systems open up a huge variety of options in door design. The latest, innovative high-performance drive technology, safety, ease of accessibility and first class universal drive design set them apart. GEZE offers complete solutions for individual requirements. A dedicated division is responsible for the development and construction of individual special designs.

Smoke and heat extraction and window technology

GEZE smoke and heat extraction systems and ventilation technology provide complete systems solutions combining the many requirements of different types of windows. We supply a full range from energy efficient drive systems to natural ventilation and complete solutions for supplying and extracting air, also as certified SHEVs.

Safety technology

GEZE safety technology sets the standards where preventative fire control, access control and anti-theft security in emergency exits are concerned. For each of these objectives GEZE offers tailored solutions, which combine the individual safety requirements in one intelligent system and close doors and windows in case of danger in a coordinated manner.

Building systems

In GEZE’s Building Management System GEZE door, window and safety products can be integrated into the security and control systems of the building. A central control and visualisation system monitors various automation components in the building and offers security through many different networking capabilities.

Glass systems

GEZE glass systems stand for open and transparent interior design. They can either blend discreetly into the architecture of the building or stand out as an accentuated feature. GEZE offers a wide variety of technologies for functional, reliable and aesthetic sliding wall or sliding door systems providing security with lots of design scope.