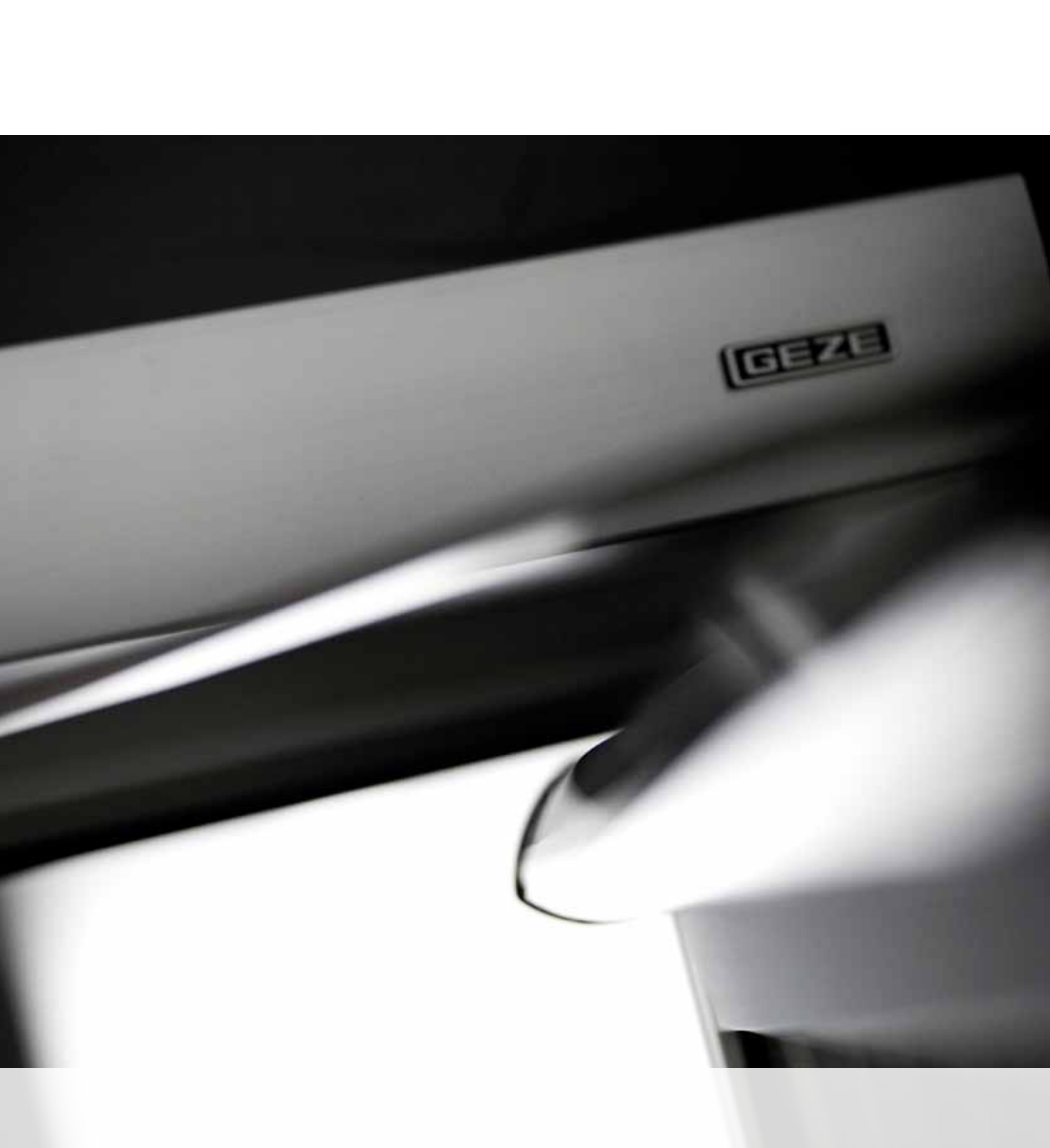




GEZE SWING DOOR SYSTEMS  
VARIED, BARRIER-FREE AND STRONG



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## GEZE swing door systems

### Open and close doors easily

The swing door systems For large and heavy doors, as well as frequently used doors from GEZE make it easier to pass through doors whenever manual operation is too cumbersome or difficult. The outstanding features of the systems include reliability and safety, as well as a clear and modern design. GEZE implements building-specific solutions and guarantees planners maximum design freedom.

The electromechanical Ecturn drive allows internal doors to be opened and closed gently and easily for barrier-free access.

Thanks to their uniquely small overall height of only seven centimetres, the drives in the Slimdrive range can be fitted almost invisibly to any building architecture.

The electrohydraulic TSA range is the first choice for doors in frequently used areas. Durability and strength are the characteristics of this range.

### 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.



### Design possibility for swing door systems



- 1 = Drive
- 2 = Actuation
- 3 = Safeguarding
- 4 = Operation

## Overview table for swing door systems

|  |     | ECturn       | Slimdrive EMD     | TSA 160 NT           |
|--|-----|--------------|-------------------|----------------------|
| <b>Product features</b>  |     |              |                   |                      |
| Dimensions drive (height x width x depth)  |     | 60x580x60 mm | 70x650x121 mm     | 100x690x121 mm       |
| Leaf weight (max.)   | GLS | 125 kg       | 180 kg<br>230 kg* | 250 kg<br>310 kg**   |
|  | GST |              |                   |                      |
| Leaf width (min.)  | GLS | 650 mm       | 850 mm            | 690 mm               |
|  | GST |              | 750 mm            |                      |
| Leaf width (max.)  | GLS | 1100 mm      | 1400 mm           | 1400 mm<br>1600 mm** |
|  | GST |              |                   |                      |
| Hinge clearance on double-leaf doors   | GLS | –            | 1700-2500 mm      | 1470-2800 mm         |
|  | GST | –            | 1500-2800 mm      |                      |
| Opening and closing speed adjustable   |     | •            | •                 | •                    |
| Electrical closing sequence control  |     |              | •                 | •                    |
| Electromechanical drive  |     | •            | •                 |                      |
| Electrohydraulic drive   |     |              |                   | •                    |
| External doors / Internal doors  |     | – / •        | • / •             | • / •                |
| 1-leaf / 2-leaf  |     | • / –        | • / •             | • / •                |
| Guide rail / Link arm  |     | • / •        | • / •             | • / •                |
| <b>Functions</b>   |     |              |                   |                      |
| Automatic  |     | •            | •                 | •                    |
| Push & Go adjustable   |     | •            | •                 | •                    |
| Low-Energy   |     | •            | •                 |                      |
| Servo  |     |              | •                 |                      |
| <b>Variants</b>  |     |              |                   |                      |
| For fire and smoke protection doors (F)  |     |              | •*                | •                    |
| With integrated closing sequence control (IS)  |     |              | •*                | •                    |
| With integrated closing sequence control for double-leaf fire and smoke protection doors (F-IS)                  |     |              | •*                | •                    |
| With integrated closing sequence control for double-leaf doors, automatic doors and door closer function (IS/TS) |     |              |                   | •                    |
| For fresh air supply as well as doors in emergency exit routes (Invers)  |     |              | •                 | •                    |
| For large and heavy doors, as well as frequently used doors (EN7)  |     |              |                   | •                    |
| <b>Page</b>  |     | <b>10</b>    | <b>21</b>         | <b>43</b>            |

GLS = guide rail

GST = link arm

• = Yes

\* = Slimdrive EMD-F

\*\* = TSA 160 NT EN7

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

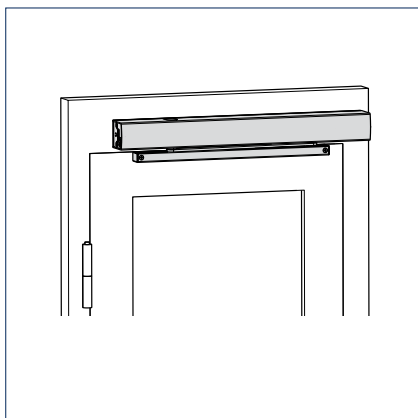
The following diagrams show the installation possibilities for swing doors and the drives which can be used to realise this application.

### Notes

A door stopper is always required.

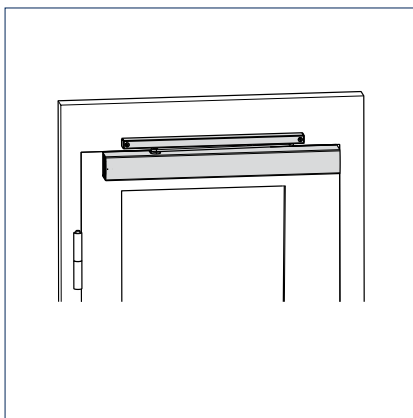
We recommend link arms for external doors. Wind loads and underpressure or excess pressure must also be taken into account.

### Installation on the hinge side



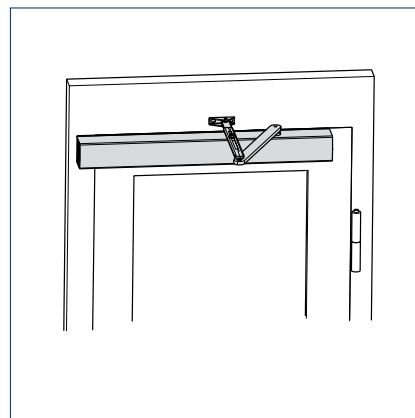
Transom installation with guide rail

- 1 = Ecturn
- 2 = Slimdrive EMD
- 3 = TSA 160 NT
- 4 = TSA 160 NT Z
- 5 = TSA 160 NT Invers



Door leaf installation with guide rail

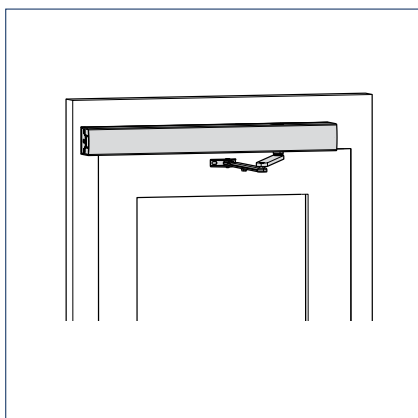
- 1 = Ecturn
- 2 = Slimdrive EMD



Door leaf installation with link arm

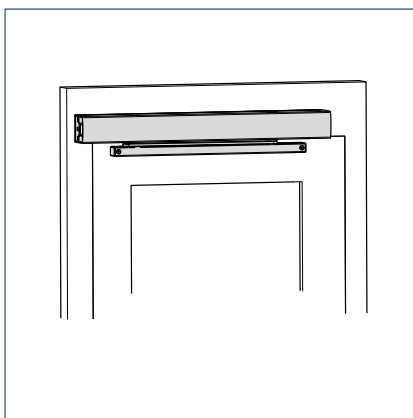
- 1 = Ecturn

### Installation on the opposite hinge side



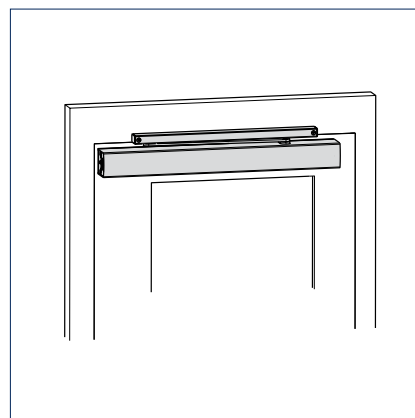
Transom installation with link arm

- 1 = Ecturn
- 2 = Slimdrive EMD
- 3 = TSA 160 NT
- 4 = TSA 160 NT Z Invers



Transom installation with guide rail

- 1 = Ecturn
- 2 = Slimdrive EMD



Door leaf installation with guide rail

- 1 = Ecturn

## Swing door systems for fire and smoke protection doors (F)

Drive systems in the F variant are used to automatically open and close single-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. Power supply to the mains cable is interrupted via a mains switch-off board (F-accessory) and the drive retains the normal door closer function. 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). This variant can be achieved using the following drive series: Slimdrive EMD-F and TSA 160 NT

### F swing door



Augustinum retirement home, Stuttgart

## Swing door systems with integrated closing sequence control (IS)

Swing doors in the IS variant are always equipped with an integrated closing sequence control. The mechanical closing sequence control ensures that the fixed leaf closes first on double-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 achieved using the following drive series: Slimdrive EMD-F and TSA 160 NT

### IS swing door



Stiftung Ecksberg, Mühlendorf

## 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 achieved using the following drive series: Slimdrive EMD-F and TSA 160 NT

### F-IS swing door



Zamenhof care home, Stuttgart

## 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 achieved using the following drive series: TSA 160 NT IS/TS

### F-IS/TS swing door



Kreissparkasse bank, Ludwigsburg



## Swing door systems for fresh air supply as well as doors in emergency exit routes (Invers)

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 exit routes 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 achieved using the following drive series: Slimdrive EMD and TSA 160 NT

### Inverse swing door



Augustinum retirement home, Stuttgart

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

This variant is a reliable solution for the automation of very large and heavy swing doors which are frequently used. Drives in the EN7 range are suitable for leaf weights up to max. 310 kg and leaf widths up to 1600 mm. These drives are particularly suitable for homes for the elderly, hospitals, shopping centres, schools or airports.

This variant can be achieved using the following drive series: TSA 160 NT EN7

### TSA 160 NT EN7 swing door



Robert Bosch hospital, Stuttgart

## 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.

### Function description

The door opens automatically after the large-sized button 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 switchover 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 large-sized button 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 switchover again. The “occupied” sign outside and the telltale lamp inside both go off. The drive is actuated by pressing the large-sized OPEN DOOR button inside the cubicle, and the door opens immediately.

In the event of a power failure, the closed circuit current door opener 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 large-sized button, 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-off switch.



Cologne-Bonn airport, Germany

- 1 = Swing operator
- 2 = Large-scale OPEN DOOR button (inside and outside)
- 3 = Switchover: 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

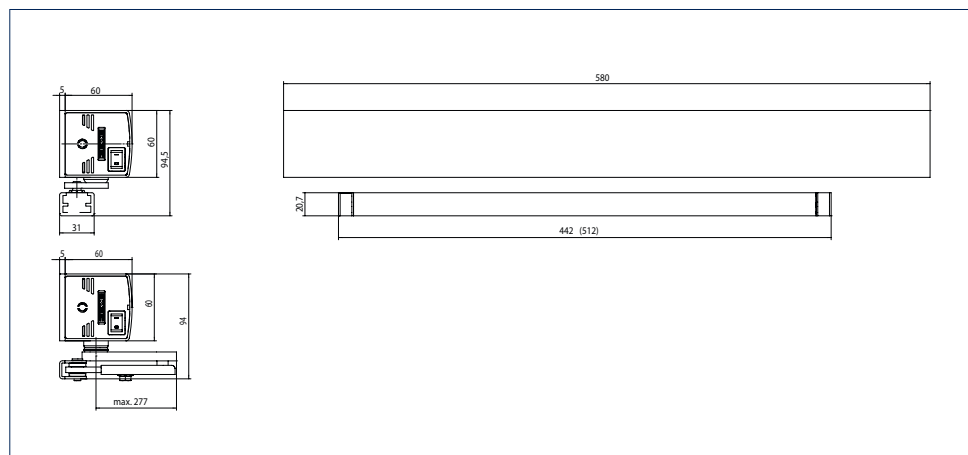
### Electromechanical swing door drive for 1-leaf single-action internal doors

This extremely quiet electromechanical swing door drive meets the requirements of barrier-free construction. It makes life easier and more convenient – particularly for people with mobility problems or little strength. Doors can comfortably be opened automatically, or opened manually and closed automatically. The GEZE ECturn can be operated both in low-energy mode and in automatic mode in accordance with DIN 18650. 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 battery ensures maximum safety even in the event of a power failure. This swing door drive covers all internal application cases. The ECturn is very flexible and permits all hinge variants, both for DIN left-hand and DIN right-hand doors.

#### GEZE ECturn



#### GEZE ECturn



#### Application range

- Barrier-free internal doors
- Hotel and restaurants
- Hospitals and nursing homes for the elderly
- Educational institutions e.g. schools, nursery schools, day care centres
- Leisure facilities, e.g. swimming baths, thermal baths, sport and fitness centres
- Administration and public buildings
- Homes

## Technical data

| Product features   | GEZE ECTurn  |
|--|--|
| Height   | 60 mm  |
| Width  | 580 mm   |
| Depth  | 60 mm  |
| Leaf weight (max.) 1-leaf                                  | 125 kg   |
| Leaf width (min.-max.)                                     | 650 – 1100 mm  |
| Soffit depth (max.)*                                       | 200 mm   |
| Door overlap (max.)*                                       | 50 mm  |
| Drive type   | Electromechanical  |
| Door opening angle (max.)*                                 | 110 °  |
| DIN left   | •  |
| DIN right  | •  |
| Transom installation opposite hinge side with link arm     | •  |
| Transom installation opposite hinge side with guide rail   | •  |
| Transom installation hinge side with guide rail            | •  |
| Door leaf installation opposite hinge side with guide rail | •  |
| Door leaf installation hinge side with guide rail          | •  |
| Door leaf installation hinge side with link arm            | •  |
| Mechanical latching action                                 | -  |
| Electrical latching action                                 | •  |
| Electrical closing sequence control                        | -  |
| Mechanical closing sequence control                        | -  |
| Disconnection from mains                                   | Main switch in the drive                                       |
| Activation delay (max.)                                    | 10 S   |
| Operating voltage (min.)                                   | 110 V  |
| Operating voltage  | 230 V  |
| Frequency of supply voltage                                | 50 – 60 Hz   |
| Capacity rating  | 75 W   |
| Power supply for external consumers (24 V DC)              | 600 mA   |
| Temperature range  | -15 – 50 °C  |
| Enclosure rating   | IP 20  |
| Operating modes  | Off, Automatic, Permanently open, Night                        |
| Type of function   | Fully automatic  |
| Automatic function   | •  |
| Low-energy function  | •  |
| Servo function   | -  |
| Key function   | •  |
| Inverse function (opening by spring force)                 | -  |
| Vestibule function   | -  |
| Obstruction detection                                      | •  |
| Automatic reversing  | •  |
| Push & go  | adjustable   |
| Operation  | Programme switch TPS, Programme switch integrated in the drive |
| Parameter setting  | Programme switch DPS, Controller                               |
| Approvals  | DIN 18650  |
| Suitable for fire proof doors                              | -  |

• = YES

- = NOT AVAILABLE

\* = DEPENDING ON THE TYPE OF INSTALLATION

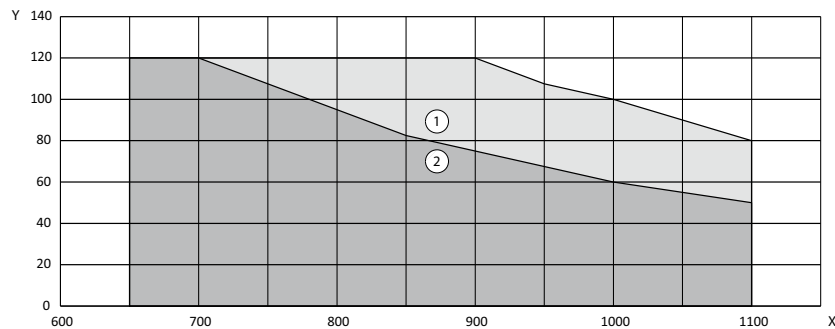
NOTE: THE MAXIMUM POSSIBLE LEAF WEIGHT IN RELATION TO LEAF WIDTH CAN BE FOUND IN THE CHAPTER ON AREAS OF APPLICATION (DIAGRAMS)

## Areas of application

### Note

In low-energy mode the swing door drive moves at reduced speed and thus meets the safety requirement of DIN 18650. 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.

ECturn



Note: Use on internal doors only!

X = Door width (mm)

Y = Door weight (kg)

1 = Area of application in low energy mode

2 = Area of application in automatic mode

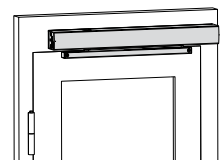
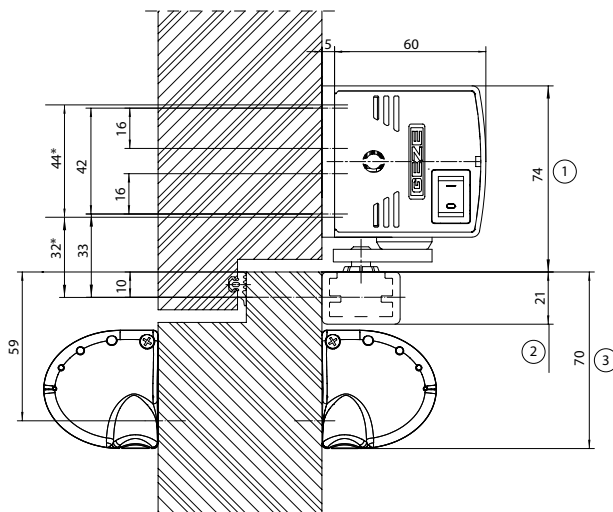
Note: Diagram shows left-hand (ISO 6), right-hand (ISO 5) is reversed (mirror-image).

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

Drawing no. 70107-ep01

Soffit depth (max.) 40 mm

Door overlap (max.) 40 mm



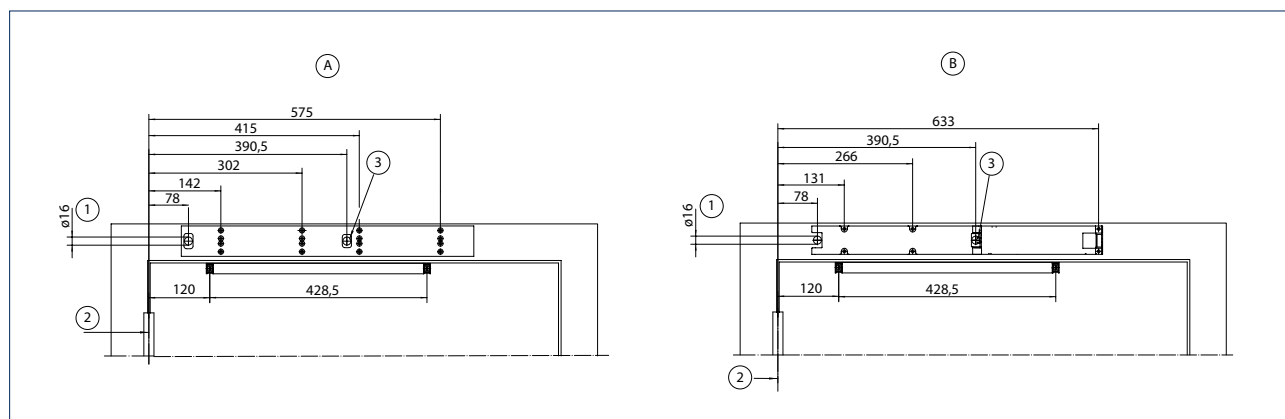
\* = Direct installation

1 = ECturn space requirement

2 = Guide rail space requirement

3 = GC 334 space requirement

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



A = Installation with mounting plate

B = Direct installation

1 = Concealed line-feed for low-voltage connection and mains cable

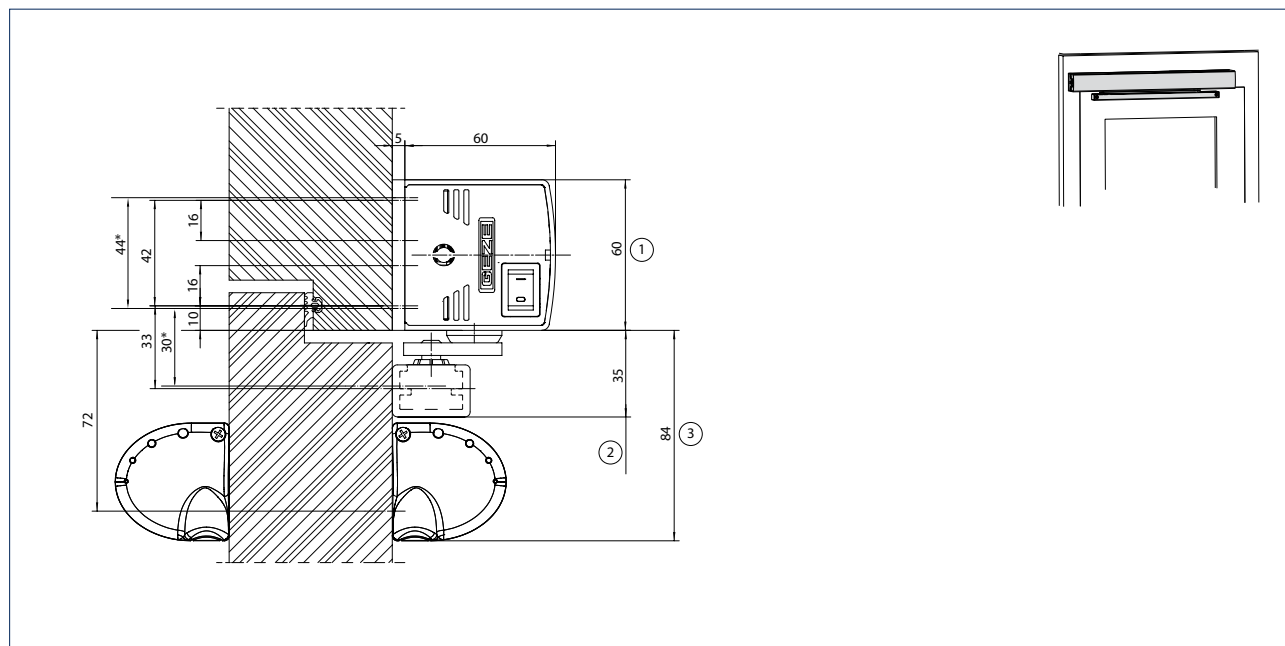
2 = Dimensional reference is middle of hinge

3 = Concealed line-feed for low-voltage connection

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

Drawing no. 70107-ep02

Soffit depth (max.) 30 mm



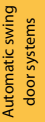
\* = Direct installation

1 = ECTurn space requirement

2 = Guide rail space requirement

3 = GC 334 space requirement

Automatic swing  
door systems

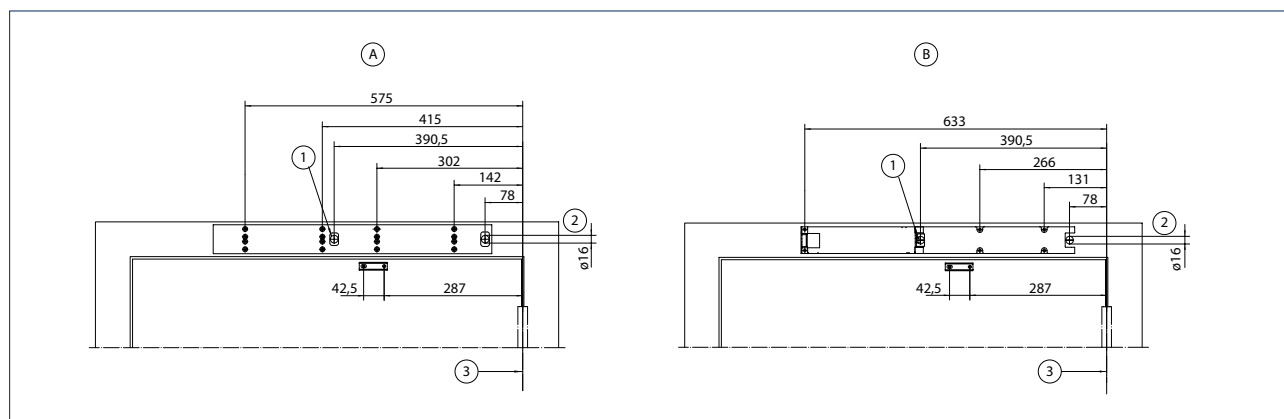


- Soffit depth (max.) 200 mm

Soffit depth (max.) 200 mm

- \* = Direct installation
- 1 = ECTurn space requirement
- 2 = Link arm space requirement
- 3 = GC 334 space requirement

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



A = Installation with mounting plate

B = Direct installation

1 = Concealed line-feed for low-voltage connection

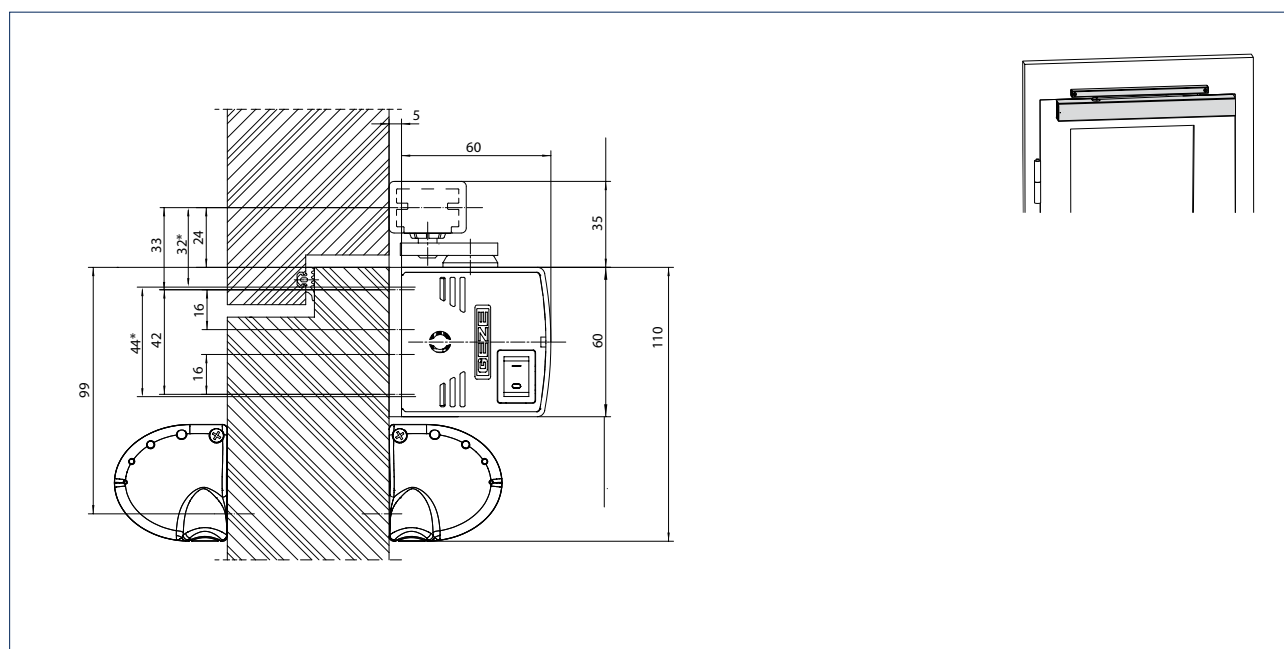
2 = Concealed line-feed for low-voltage connection and mains cable

3 = Dimensional reference is middle 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

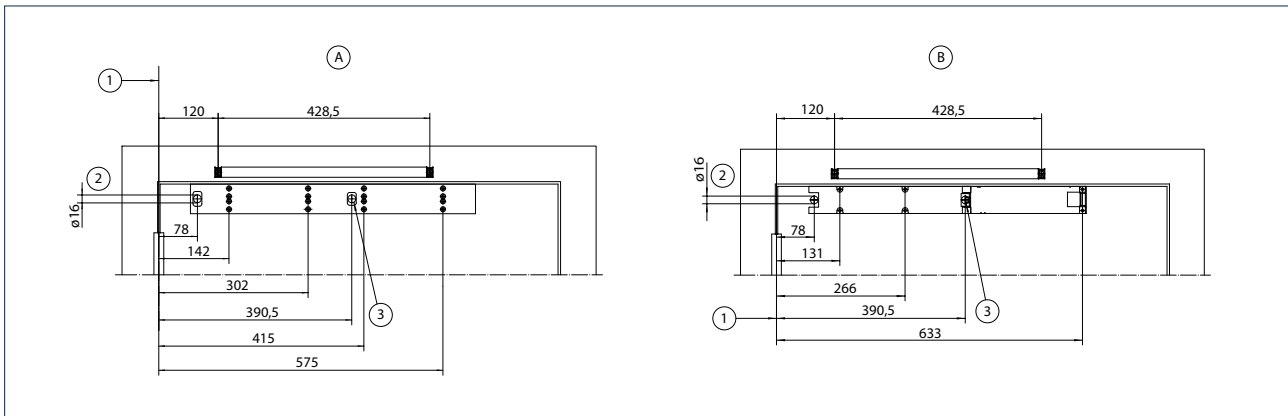
1 = Guide rail space requirement

2 = ECTurn space requirement

3 = GC 334 space requirement



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



A = Installation with mounting plate

B = Direct installation

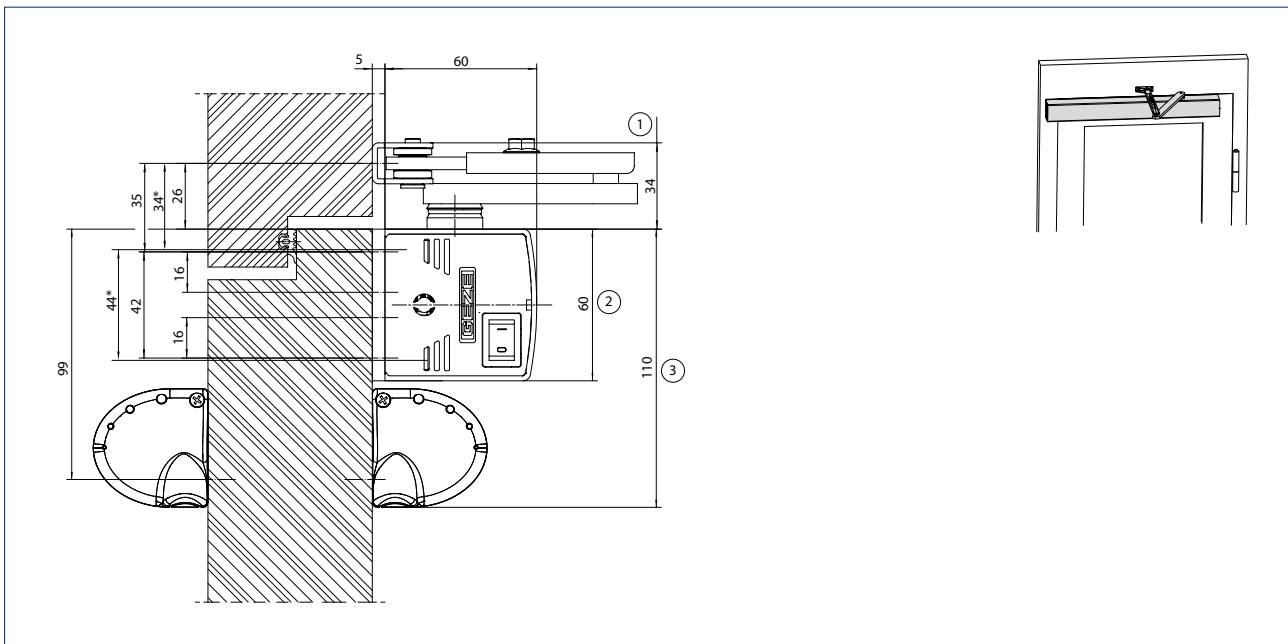
1 = Dimensional reference is middle of hinge

2 = Concealed line-feed for low-voltage connection and mains cable

3 = Concealed line-feed for low-voltage connection

**Door leaf installation with link arm on the hinge side, single-leaf**

Door overlap (max.) 200 mm



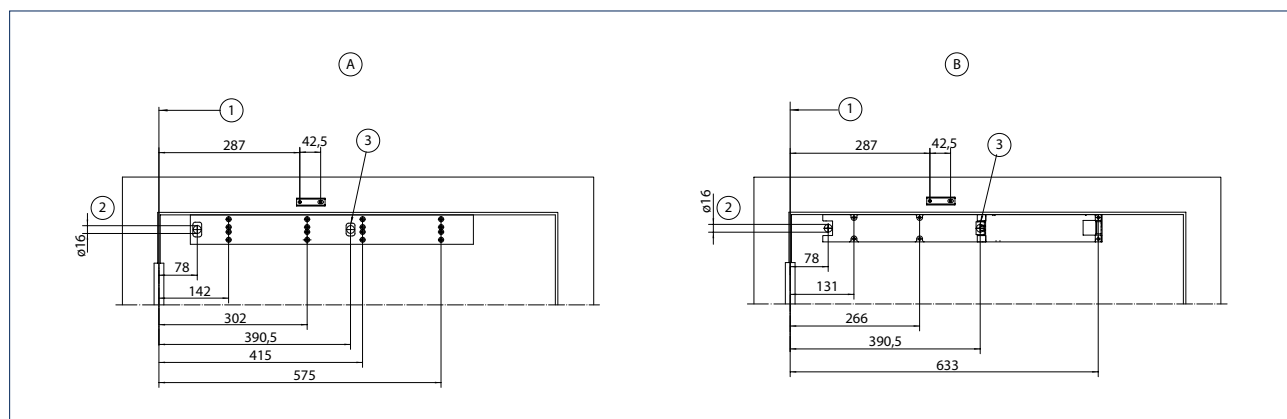
\* = Direct installation

1 = ECturn space requirement

2 = Link arm space requirement

3 = GC 334 space requirement

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



A = Installation with mounting plate

B = Direct installation

1 = Dimensional reference is middle of hinge

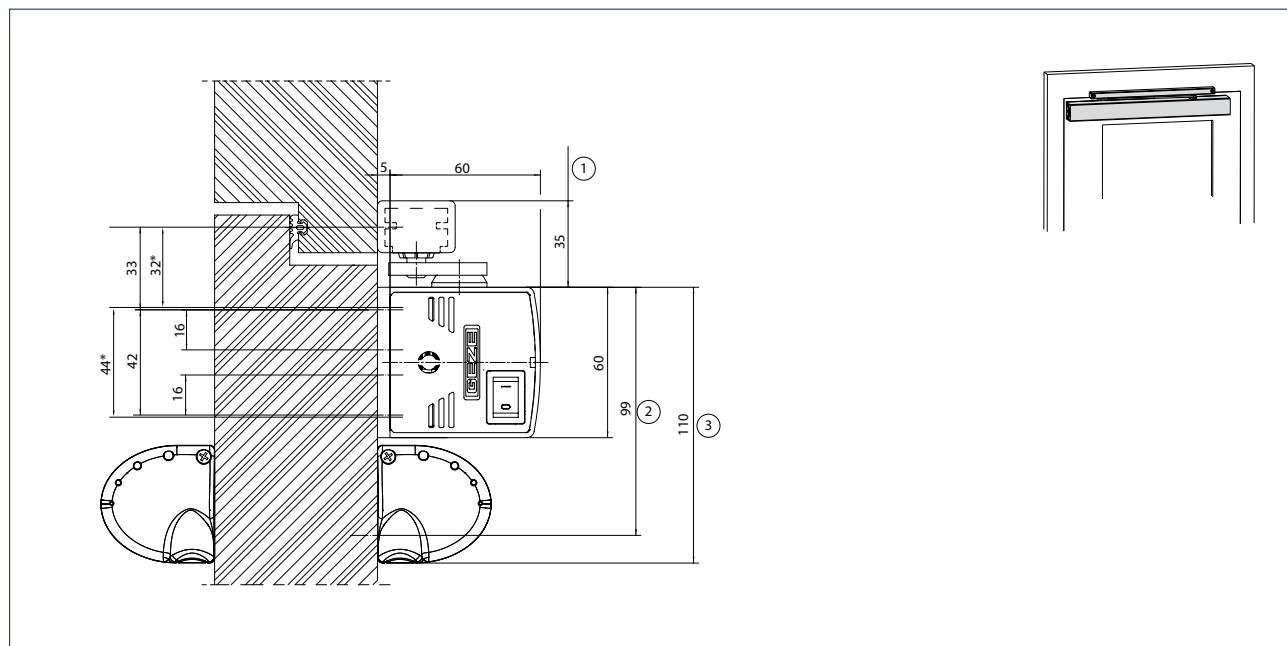
2 = Concealed line-feed for low-voltage connection and mains cable

3 = Concealed line-feed for low-voltage connection

**Door leaf installation with guide rail on the opposite hinge side, single-leaf**

Drawing no. 70107-ep05

Soffit depth (max.) 20 mm



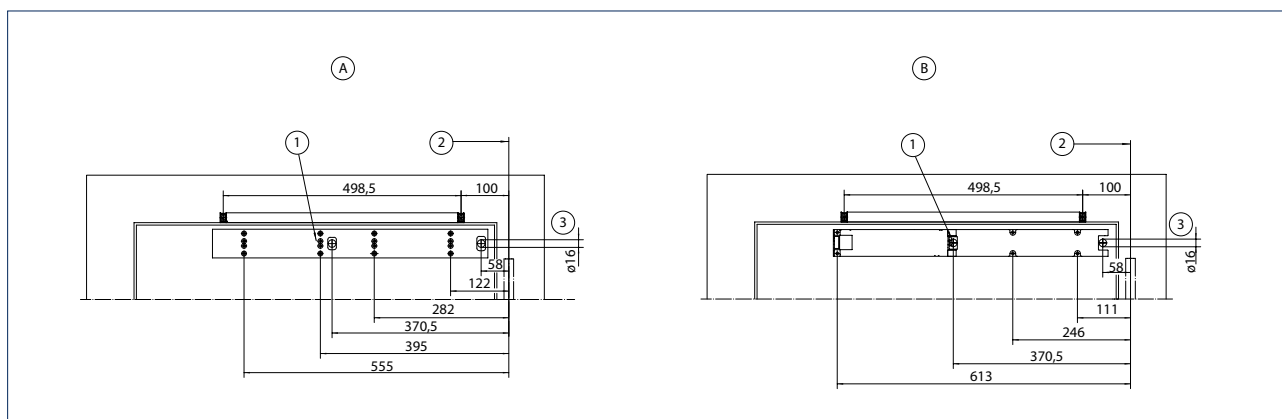
\* = Direct installation

1 = Guide rail space requirement

2 = ECTurn space requirement

3 = GC 334 space requirement

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



A = Installation with mounting plate

B = Direct installation

1 = Concealed line-feed for low-voltage connection

2 = Dimensional reference is middle of hinge

3 = Concealed line-feed for low-voltage connection and mains cable

## Legend for the cable diagrams

## Cable

1 = NYM-J 3 x 1.5 mm<sup>2</sup>

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 mm<sup>2</sup>

6 = LiYY 4 x 0.25 mm<sup>2</sup>

7 = Scope of supply sensor strip or LiYY 5 x 0.25 mm<sup>2</sup>

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 VDE 0100
- 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 including in the scope of supply for the sensor

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.

4) Mains connection box WxHxD min. 65 x 65 x 57

5) 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

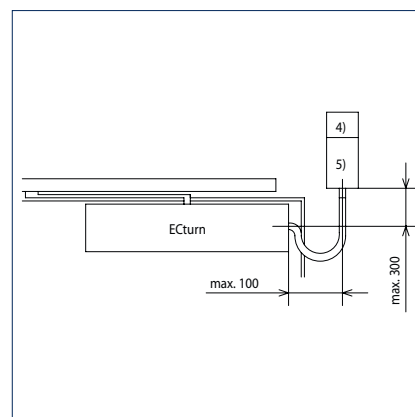
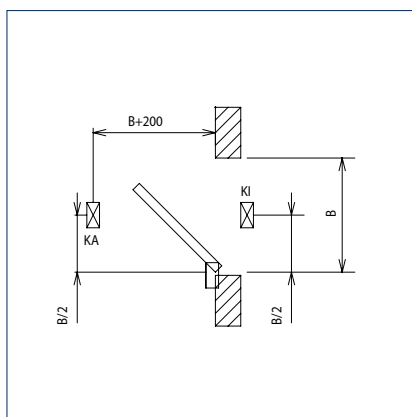
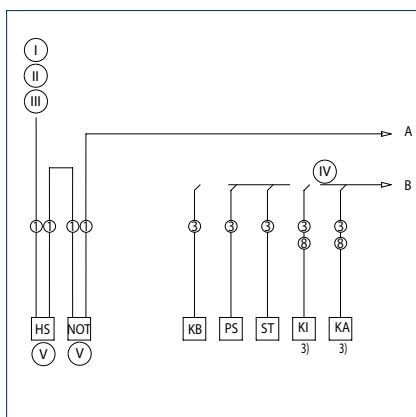
ST = Emergency stop

KI = Contact sensor inside

KA = Contact sensor outside

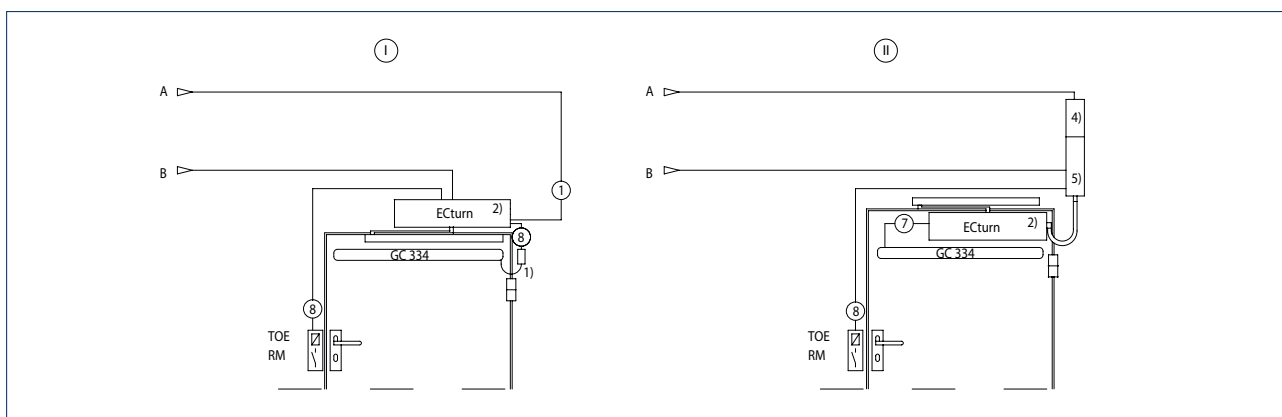
TOE = Door opener

RM = Bar message



- I = Mains supply cable 230 V / 50 Hz
- II = Fuse 10 A
- III = Connected load 230 W 1 A
- IV = And / Or
- V = Option

## 1-leaf



- I = Transom installation concealed line-feed
- II = Door leaf installation

## GEZE swing door drive Slimdrive EMD

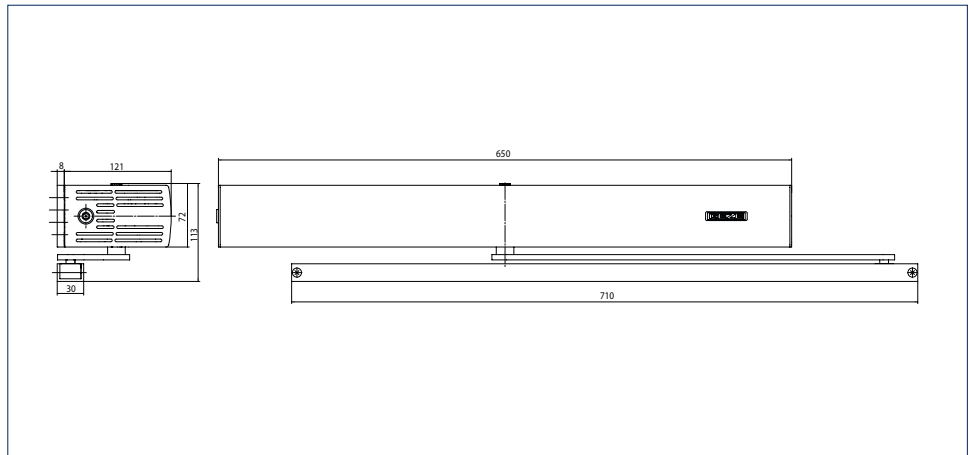
### Electromechanical swing door drive for 1 and 2-leaf single-action doors

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.

#### GEZE Slimdrive EMD



#### GEZE Slimdrive EMD



#### Application range

- Internal and external doors
- Railway stations and airports
- Hotel and restaurants
- Hospitals and nursing homes for the elderly
- Educational institutions e.g. schools, nursery schools, day care centres
- Leisure facilities, e.g. swimming baths, thermal baths, sport and fitness centres
- Administration and public buildings
- Food industry

## GEZE SLIMDRIVE EMD

## Technical data

| Product features   | GEZE Slimdrive<br>EMD   | GEZE Slimdrive<br>EMD-F  | GEZE Slimdrive<br>EMD F-IS  | GEZE Slimdrive<br>EMD Invers |
|--|---|--------------------------|---|------------------------------|
| Height   | 70 mm   |                          |   |                              |
| Width  | 650 mm  |                          |   |                              |
| Depth  | 121 mm  |                          |   |                              |
| Leaf weight (max.) 1-leaf                                  | 180 kg  | 230 kg                   |   |                              |
| Hinge size (min.-max.)* 2-leaf                             | 1500 – 2800 mm  |                          |   |                              |
| Leaf width (min.-max.)*                                    | 750 – 1400 mm   |                          |   |                              |
| Soffit depth (max.)*                                       | 300 mm  |                          |   |                              |
| Door overlap (max.)*                                       | 30 mm   |                          |   |                              |
| Drive type   | Electromechanical   |                          |   |                              |
| Door opening angle (max.)*                                 | 115 °   |                          |   |                              |
| Spring pre-load  | EN3 – EN6   |                          |   |                              |
| Left-hand  | •   | •                        | •   | •                            |
| Right-hand   | •   | •                        | •   | •                            |
| Transom installation opposite hinge side with link arm     | •   | •                        | •   | •                            |
| Transom installation opposite hinge side with guide rail   | •   | •                        | •   | •                            |
| Transom installation hinge side with guide rail            | •   | •                        | •   | •                            |
| Door leaf installation opposite hinge side with guide rail | -   | -                        | -   | -                            |
| Door leaf installation hinge side with guide rail          | •   | •                        | •   | •                            |
| Door leaf installation hinge side with link arm            | -   | -                        | -   | -                            |
| Mechanical latching action                                 | -   | •                        | •   | -                            |
| Electrical latching action                                 | •   | •                        | •   | •                            |
| Electrical closing sequence control                        | •   | •                        | •   | •                            |
| Mechanical closing sequence control                        | -   | -                        | •   | -                            |
| Disconnection from mains                                   | Cable plug connection   |                          |   |                              |
| Activation delay (max.)                                    | 20 S  |                          |   |                              |
| Operating voltage  | 230 V   |                          |   |                              |
| Frequency of supply voltage                                | 50 – 60 Hz  |                          |   |                              |
| Capacity rating  | 230 W   |                          |   |                              |
| Power supply for external consumers (24 V DC)              | 1200 mA   |                          |   |                              |
| Temperature range  | -10 – 50 °C   |                          |   |                              |
| Enclosure rating   | IP 20   |                          |   |                              |
| Operating modes  | Off, Automatic, Permanently open, Shop closing, Night   |                          |   |                              |
| Type of function   | Fully automatic   |                          |   |                              |
| Automatic function   | •   | •                        | •   | •                            |
| Low-energy function  | •   | •                        | •   | •                            |
| Servo function   | -   | •                        | •   | •                            |
| Key function   | •   | •                        | •   | •                            |
| Inverse function (opening by spring force)                 | -   | -                        | -   | •                            |
| Draught-proofing   | •   | •                        | •   | •                            |
| Obstruction detection                                      | •   | •                        | •   | •                            |
| Automatic reversing  | •   | •                        | •   | •                            |
| Push & go  | adjustable  |                          |   |                              |
| Operation  | Programme switch DPS, Programme switch MPS,<br>Programme switch TPS, Programme switch integrated in the drive |                          |   |                              |
| Parameter setting  | Programme switch DPS  |                          |   |                              |
| CAN interface  | optional  |                          |   |                              |
| Approvals  | DIN 18650   | DIN 18650<br>DIN 18263-4 | DIN 18650<br>DIN 18263-4<br>Closing<br>sequence cont-<br>roller tested acc.<br>to EN 1158 | DIN 18650                    |
| Suitable for fire proof doors                              | -   | •                        | •   | -                            |

• = YES

- = NOT AVAILABLE

\* = 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)!

## Overview of torques Slimdrive EMD-F

| Type of Installation                | Transom Installation hinge side (min.-max.) | Door leaf Installation hinge side (min.-max.) | Transom Installation opposite hinge side (min.-max.) |             |
|-------------------------------------|---|---|--|-------------|
| Linkage element                     | guide rail                                  | guide rail                                    | guide rail   | link arm    |
| Spring pre-load Closer size EN 1154 | 3 - 5                                       | 3 - 5   | 3 - 5  | 4 - 6       |
| Closing torques                     | 20 - 45 Nm                                  | 17 - 43 Nm                                    | 20 - 45 Nm   | 35 - 70 Nm  |
| Opening torques, automatic          | 122 - 97 Nm                                 | 125 - 96 Nm                                   | 115 - 90 Nm  | max. 150 Nm |
| Opening torques, manual             | 45 - 66 Nm                                  | 50 - 73 Nm                                    | 42 - 65 Nm   | 61 - 88 Nm  |

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

## Hinge dimensions for double-leaf systems (with / without IS)

| Type of installation                                     | Hinge clearance |              |   |
|--|-----------------|--------------|---|
| Transom installation hinge side with guide rail          | min. 1700 mm    | max. 2500 mm | max. 2800 mm, not fire protection doors |
| Transom installation opposite hinge side with guide rail | min. 1700 mm    | max. 2500 mm | max. 2800 mm, not fire protection doors |
| Transom installation opposite hinge side with link arm   | min. 1500 mm    | max. 2800 mm | max. 2800 mm                            |

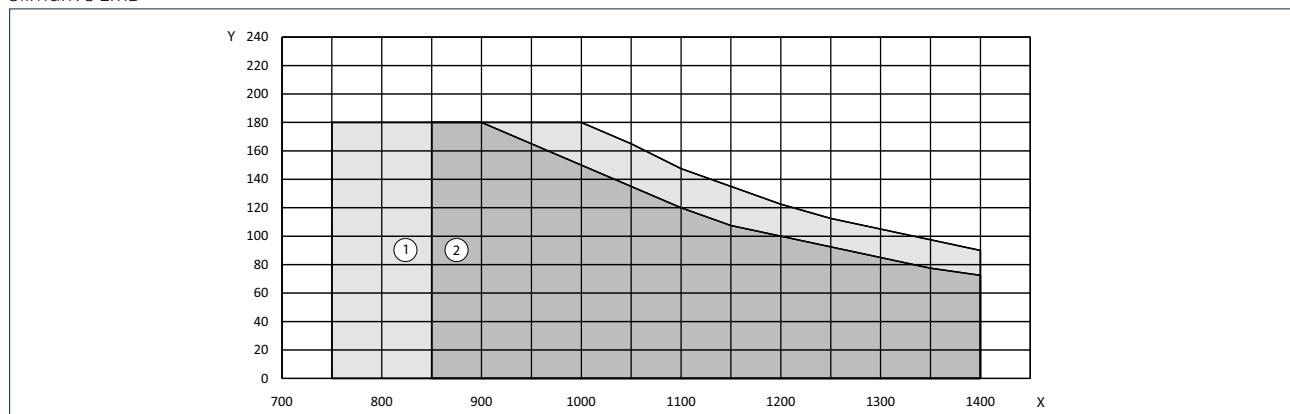
Single-leaf widths depending on leaf weight, see diagrams for areas of application

## Areas of application

### Note

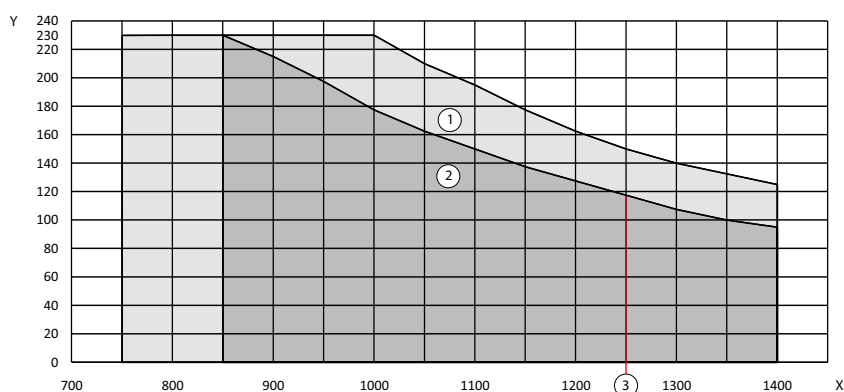
In low-energy mode the swing door drive moves at reduced speed and thus meets the safety requirement of DIN 18650. The use of safety sensors to safeguard the system is only necessary in individual cases, taking the user group into account. In automatic mode, however, the swing area of the door must always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

### Slimdrive EMD



- X = Door width (mm)
- Y = Door weight (kg)
- 1 = Link arms
- 2 = Guide rail

## Slimdrive EMD-F



X = Door width (mm)

Y = Door weight (kg)

1 = Link arms

2 = Guide rail

3 = Use of fire protection limit for 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.

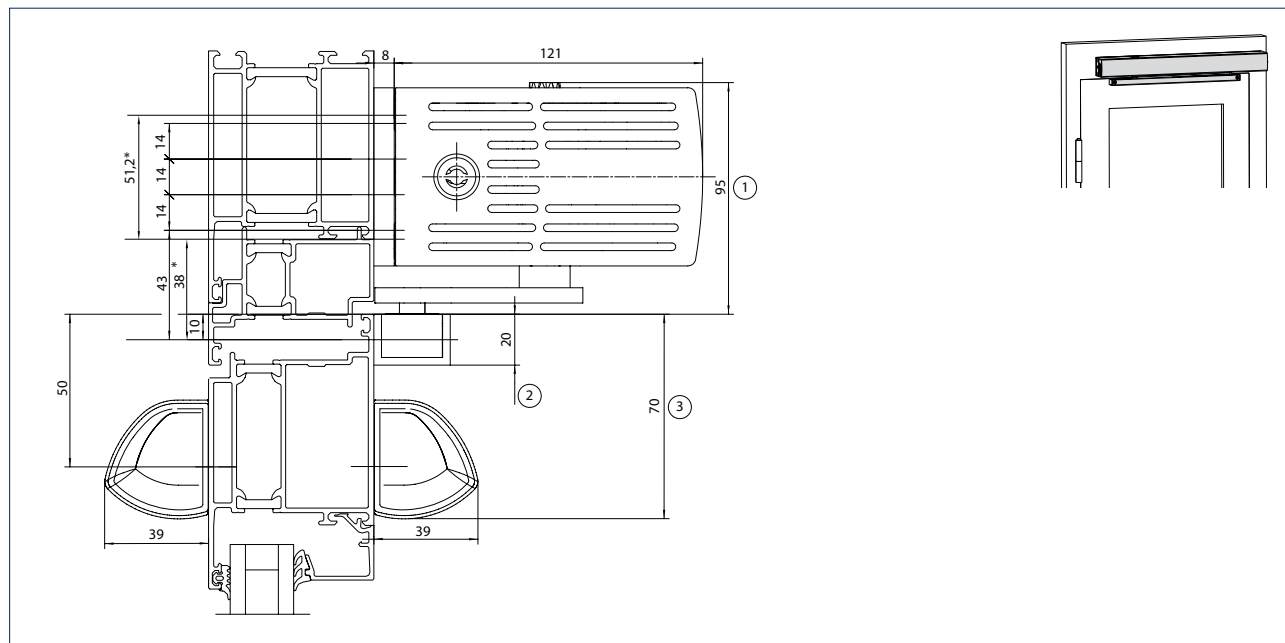
Note: Diagram shows left-hand (ISO 6), right-hand (ISO 5) is reversed (mirror-image).

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

Drawing no. 70106-ep01

Door overlap (max.) 30 mm

Door opening angle (max.) 105°



\* = Direct installation

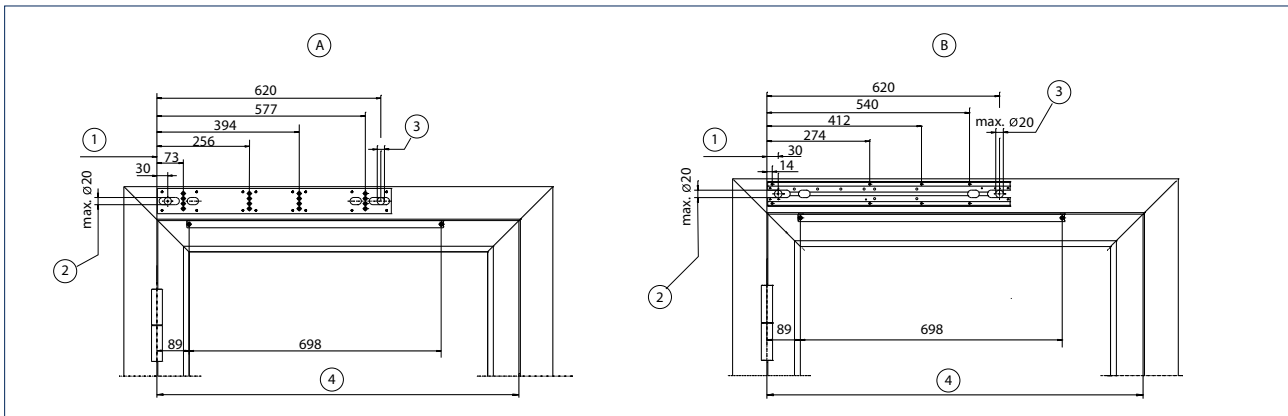
1 = EMD-F/EMD Invers space requirement

2 = Guide rail space requirement

3 = GC 338 space requirement



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



A = Installation with mounting plate

B = Direct installation

1 = Dimensional reference is middle of hinge

2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact

3 = Concealed cable line-feed 230 V / 50 Hz

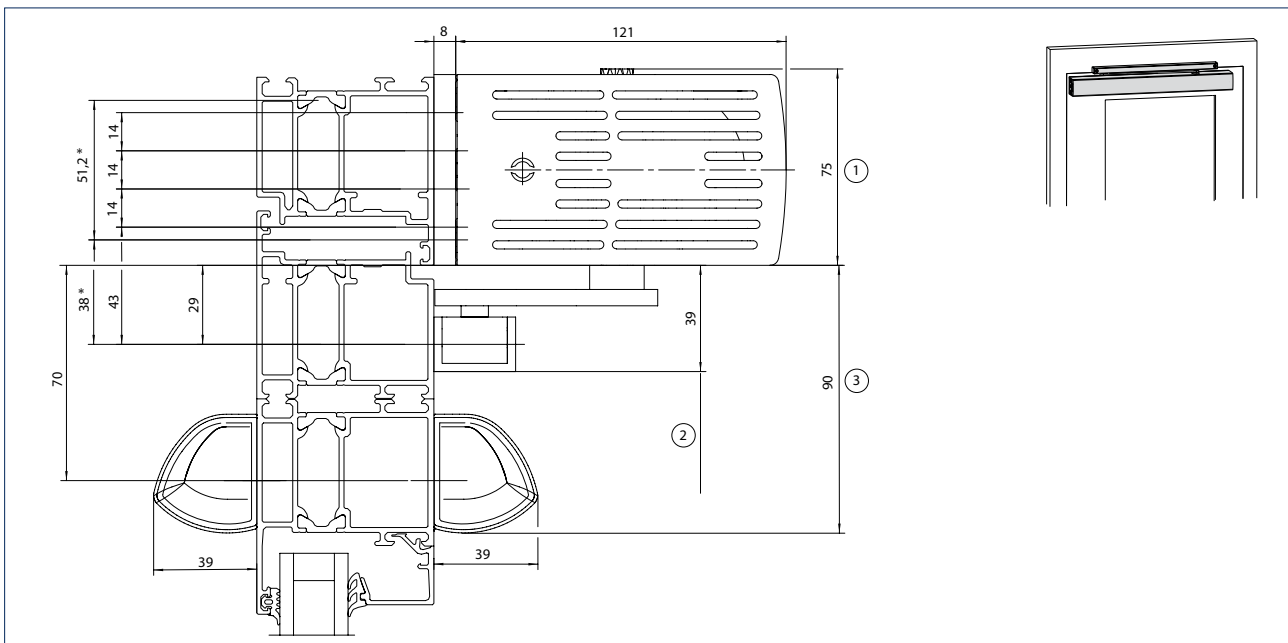
4 = Door leaf width

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

Drawing no. 70106-ep02

Soffit depth (max.) -30 to +50 mm

Door opening angle (max.) 105°



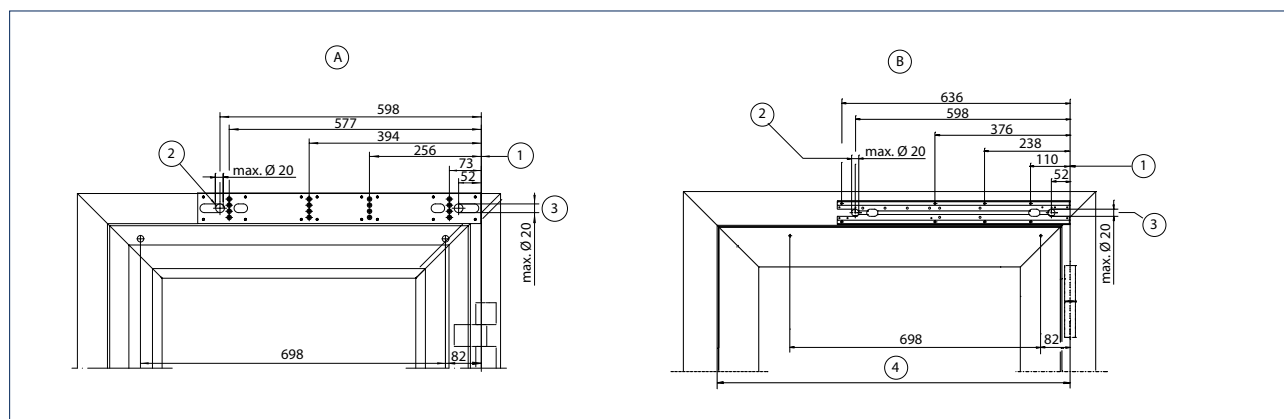
\* = Direct installation

1 = EMD-F/EMD Invers space requirement

2 = Guide rail space requirement

3 = GC 338 space requirement

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



A = Installation with mounting plate

B = Direct installation

1 = Dimensional reference is middle of hinge

2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact

3 = Concealed cable line-feed 230 V / 50 Hz

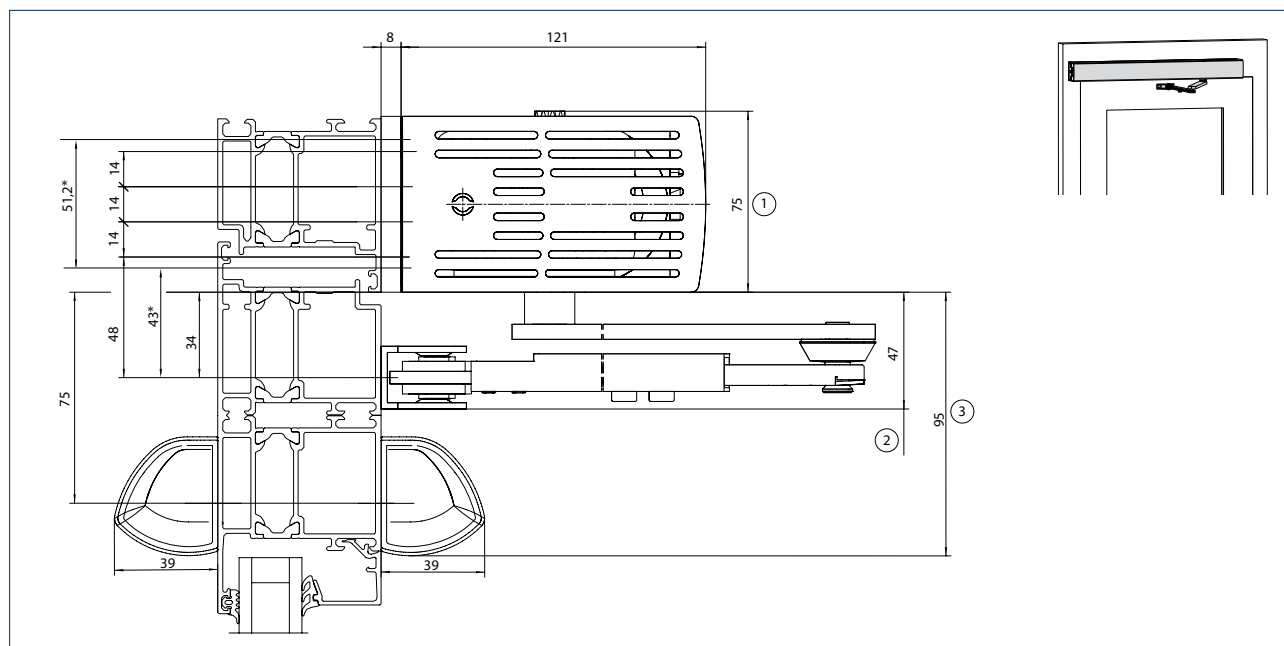
4 = Door leaf width

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

Drawing no. 70106-ep03

Soffit depth (max.) 0-100 mm, 100-200 mm, 200-300 mm

Door opening angle (max.) 110°



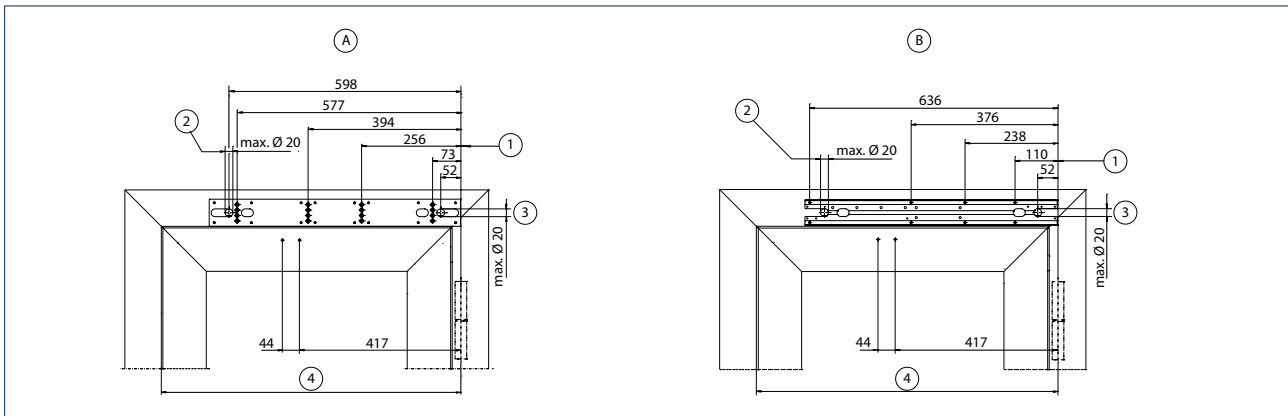
\* = Direct installation

1 = EMD-F/EMD Invers space requirement

2 = Link arm space requirement

3 = GC 338 space requirement

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



A = Installation with mounting plate

B = Direct installation

1 = Dimensional reference is middle of hinge

2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact

3 = Concealed cable line-feed 230 V / 50 Hz

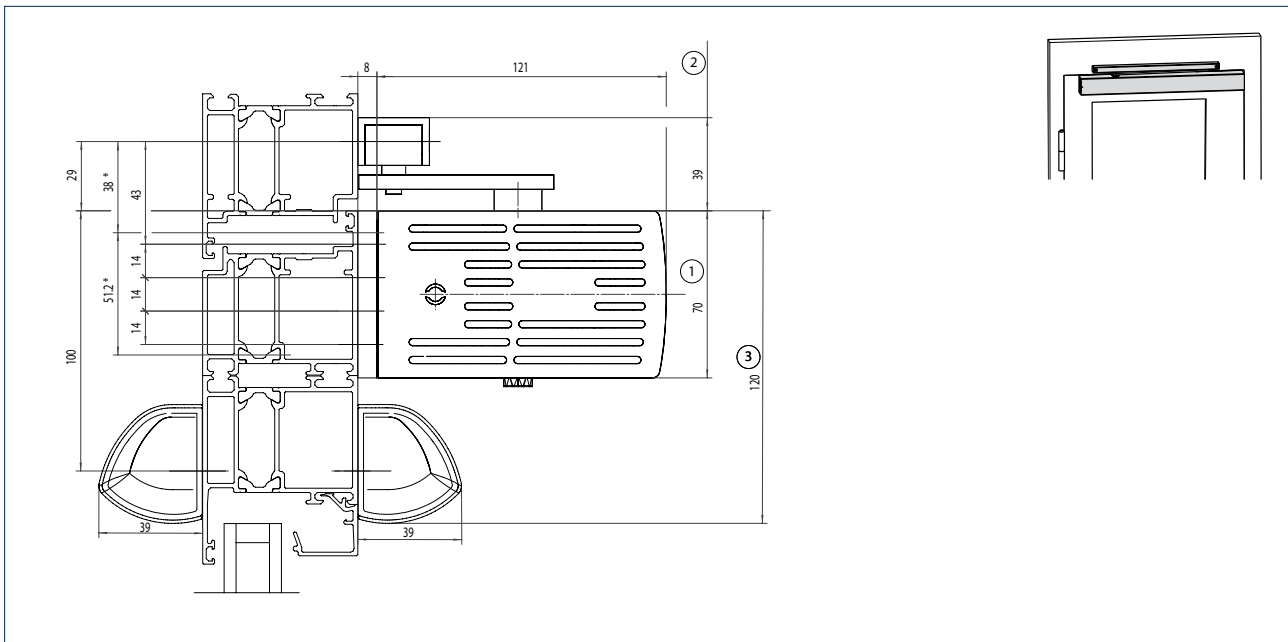
4 = Door leaf width

## Door leaf installation with guide rail on the hinge side, single-leaf

Drawing no. 70106-ep04

Door overlap (max.) 30 mm

Door opening angle (max.) 115°



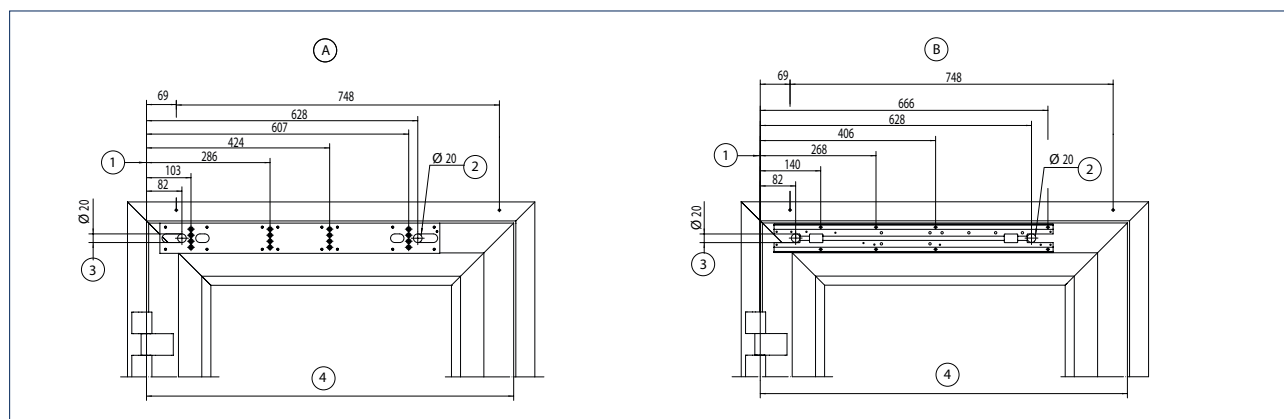
\* = Direct installation

1 = EMD-F/EMD Invers space requirement

2 = Guide rail space requirement

3 = GC 338 space requirement

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



A = Installation with mounting plate

B = Direct installation

1 = Dimensional reference is middle of hinge

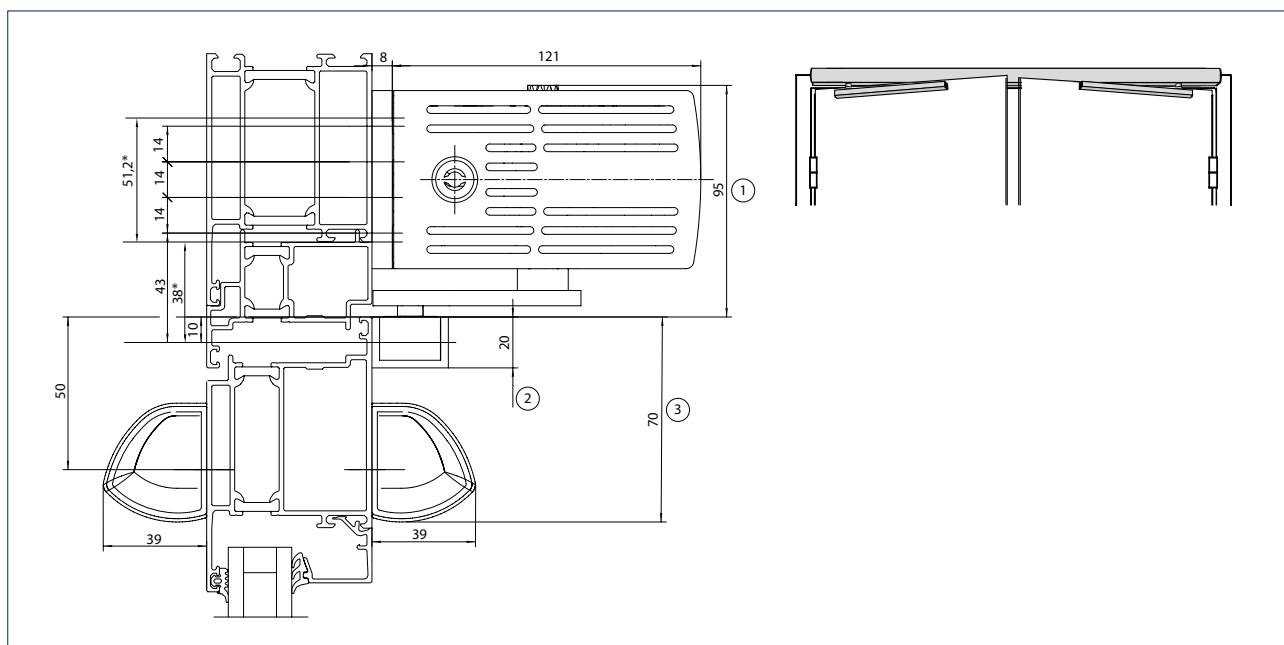
2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact

3 = Concealed cable line-feed 230 V / 50 Hz

4 = Door leaf width

## Transom installation with guide rail on the hinge side, double-leaf

Drawing no. 70106-ep21



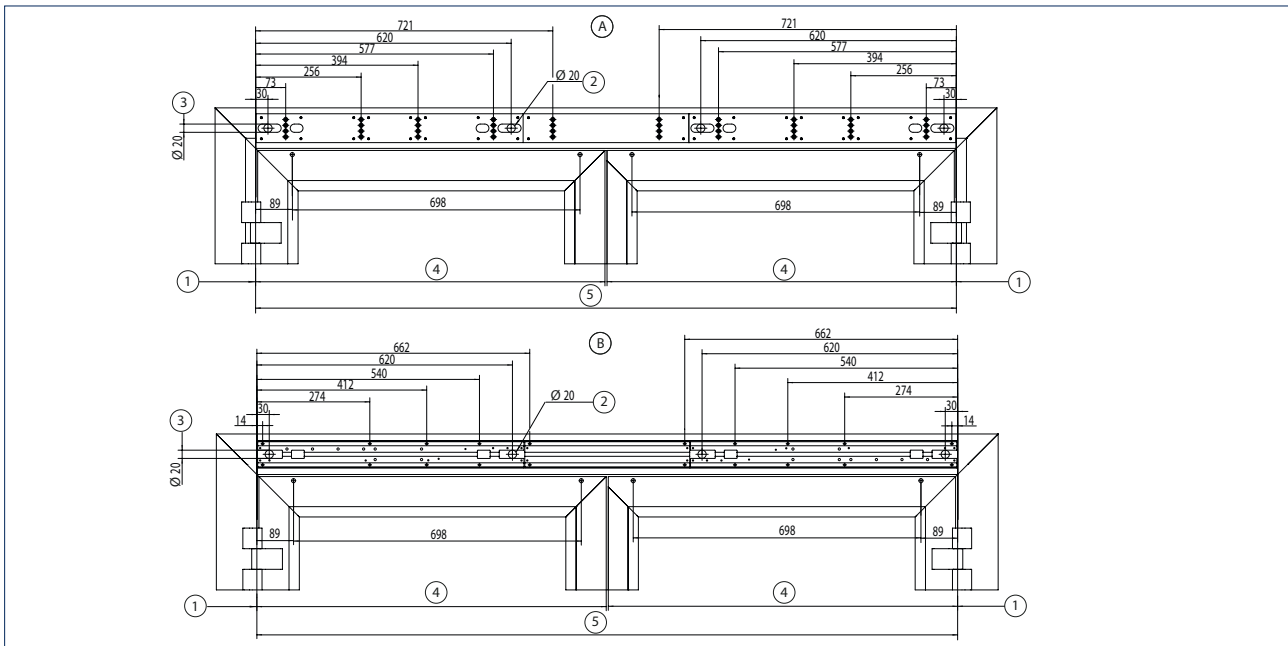
\* = Direct installation

1 = EMD-F/EMD Invers space requirement

2 = Guide rail space requirement

3 = GC 338 space requirement

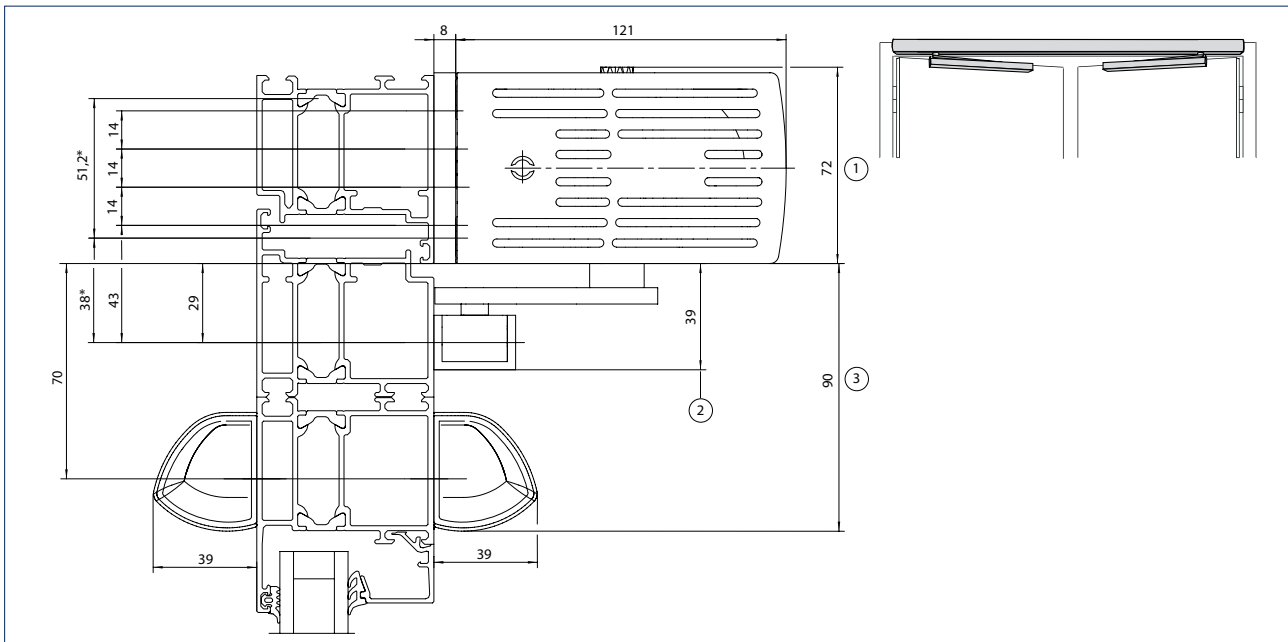
# Installation with mounting plate (A) and direct installation (B)



- A = Installation with mounting plate
- B = Direct installation
- 1 = Dimensional reference is middle of hinge
- 2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact
- 3 = Concealed cable line-feed 230 V / 50 Hz
- 4 = Door leaf width
- 5 = Hinge clearance

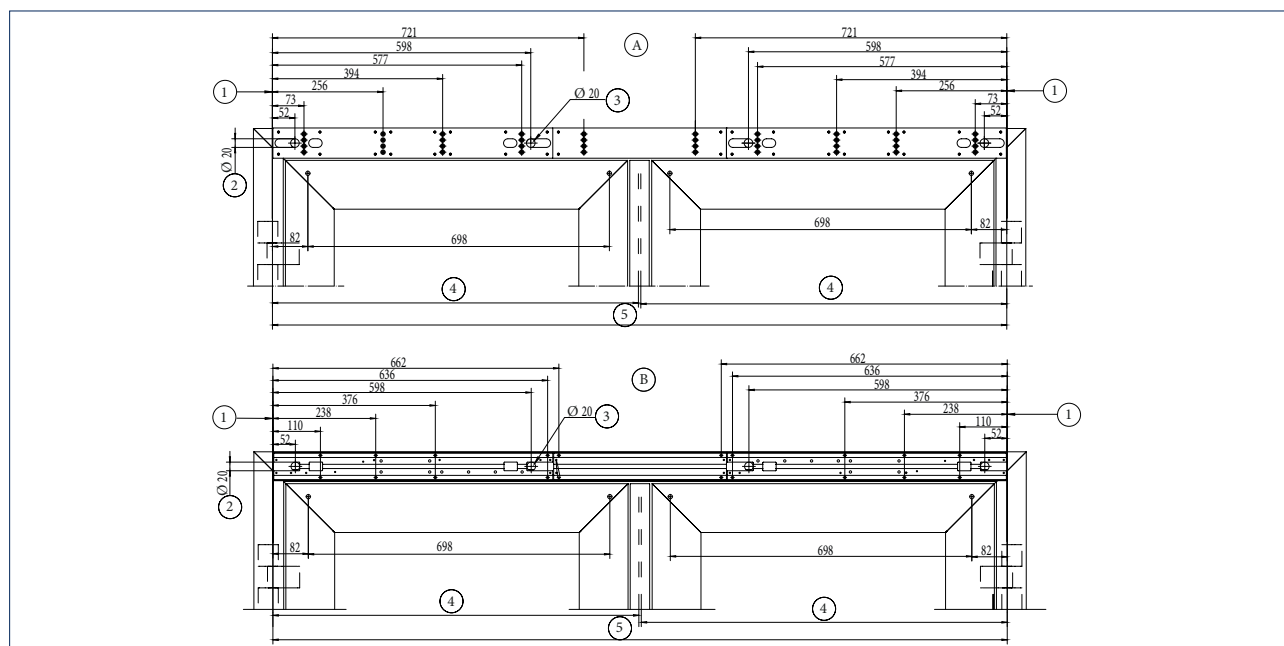
## Transom installation with guide rail on the opposite hinge side, double-leaf

Drawing no. 70106-ep22



- \* = Direct installation
- 1 = EMD-F/EMD Invers space requirement
- 2 = Guide rail space requirement
- 3 = GC 338 space requirement

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



A = Installation with mounting plate

B = Direct installation

1 = Dimensional reference is middle of hinge

2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact

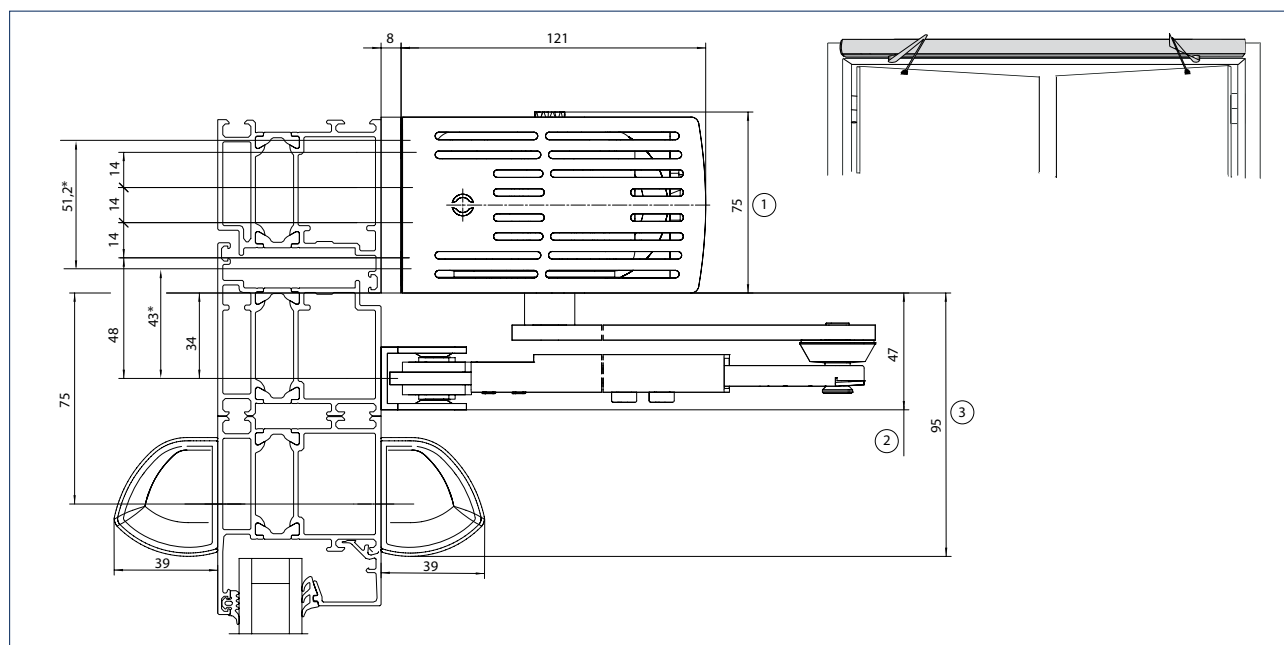
3 = Concealed cable line-feed 230 V / 50 Hz

4 = Door leaf width

5 = Hinge clearance

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

Drawing no. 70106-ep23



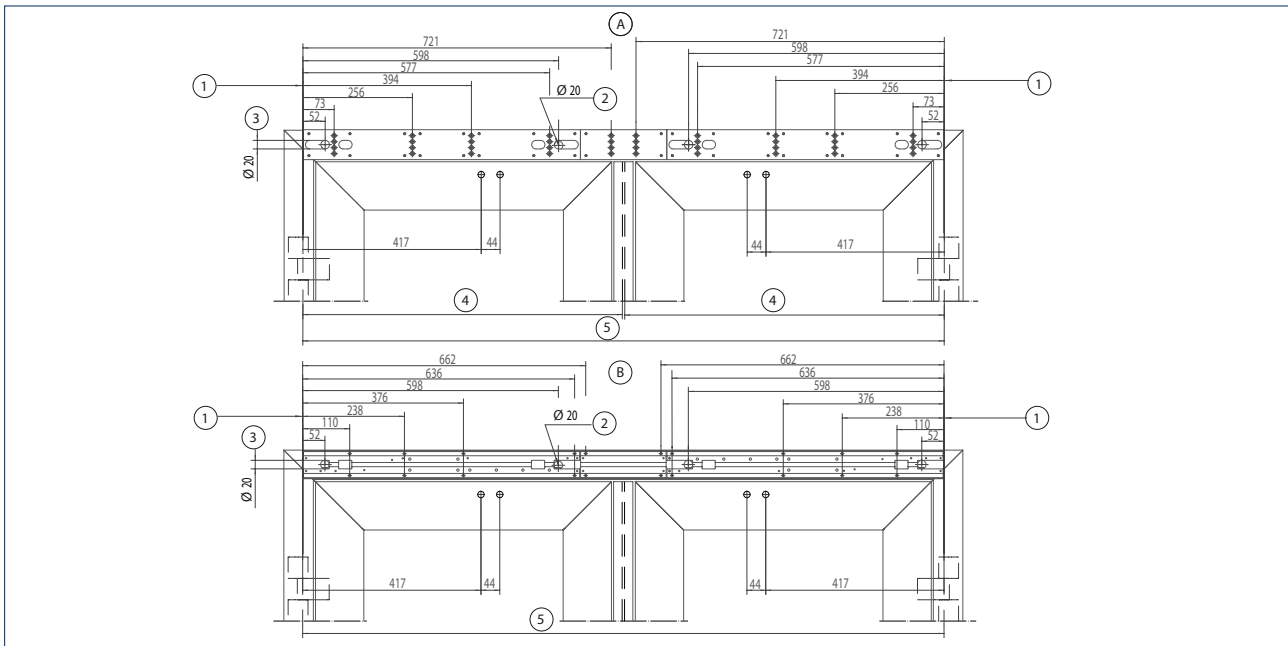
\* = Direct installation

1 = EMD-F/EMD Invers space requirement

2 = Link arm space requirement

3 = GC 338 space requirement

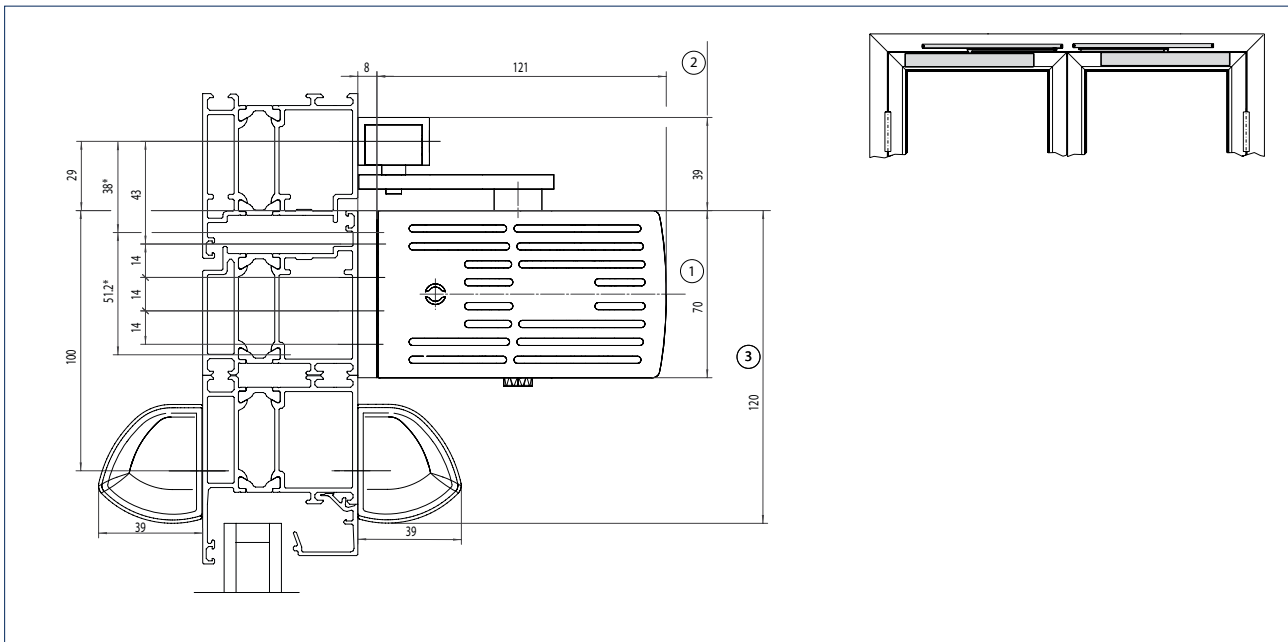
### Installation with mounting plate (A) and direct installation (B)



- A = Installation with mounting plate
- B = Direct installation
- 1 = Dimensional reference is middle of hinge
- 2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact
- 3 = Concealed cable line-feed 230 V / 50 Hz
- 4 = Door leaf width
- 5 = Hinge clearance

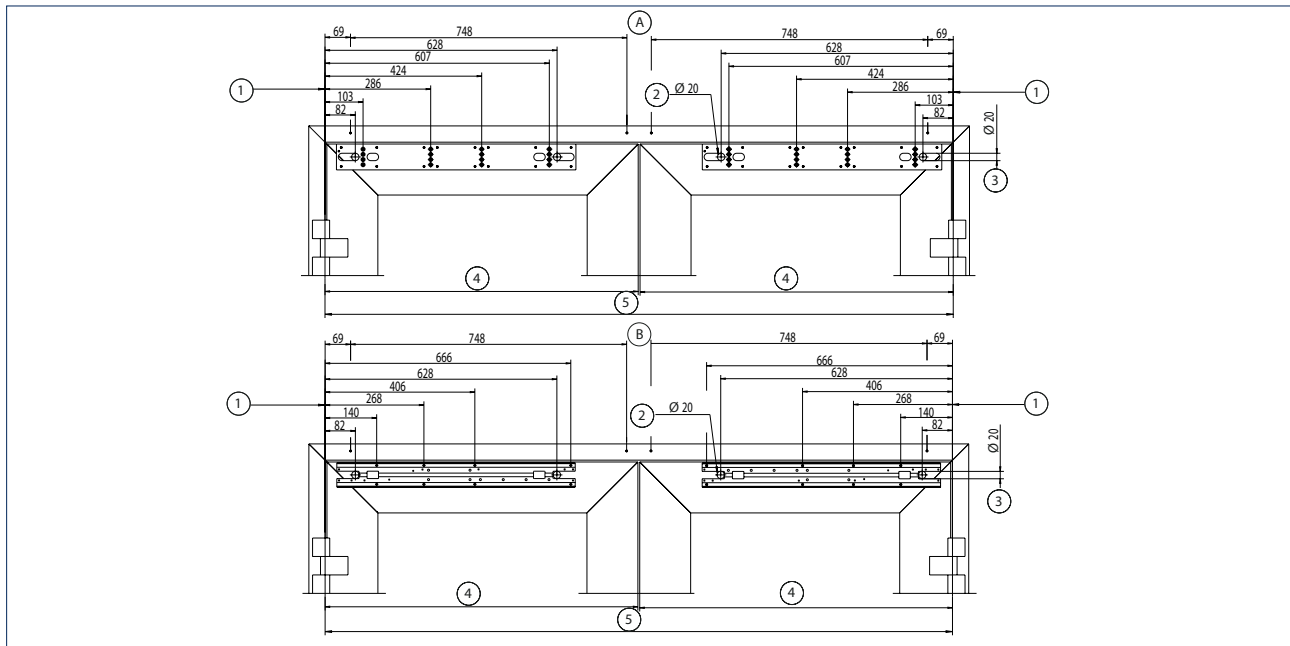
### Door leaf installation with guide rail on the hinge side, double-leaf

Drawing no. 70106-ep24



- \* = Direct installation
- 1 = EMD-F/EMD Invers space requirement
- 2 = Guide rail space requirement
- 3 = GC 338 space requirement

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



A = Installation with mounting plate

B = Direct installation

1 = Dimensional reference is middle of hinge

2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact

3 = Concealed cable line-feed 230 V / 50 Hz

4 = Door leaf width

5 = Hinge clearance



GEZE Slimdrive EMD



## Legend for the cable diagrams

### Cable

- 1 = NYM-J 3 x 1.5 mm<sup>2</sup>
- 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 mm<sup>2</sup>
- 6 = LiYY 4 x 0.25 mm<sup>2</sup>
- 7 = Scope of supply sensor strip or LiYY 5 x 0.25 mm<sup>2</sup>
- 8 = Route empty pipe with pull-wire inner diameter 10 mm

### Notes

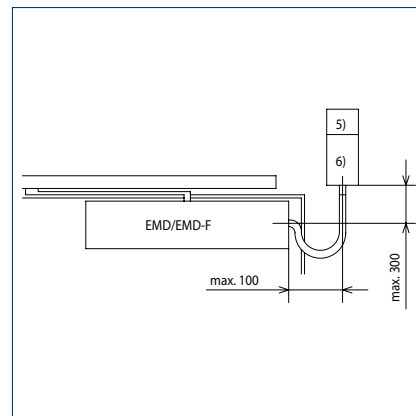
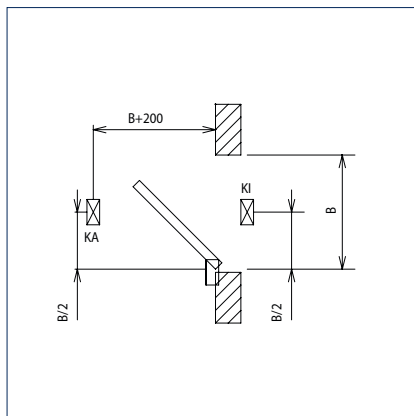
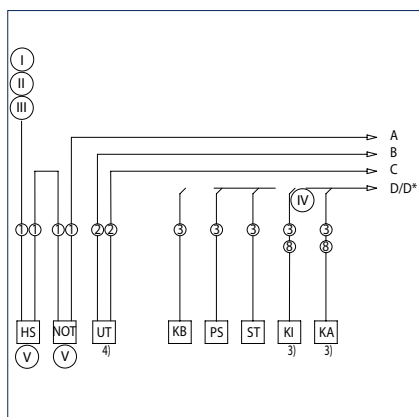
- Cable diagrams can also be prepared for specific building projects after receipt of order
- Version of standard cable diagrams in accordance with GEZE specifications
- Cable routing according to VDE 0100
- Allow the cable for the drive to project at least 1500 mm out of the wall

- 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

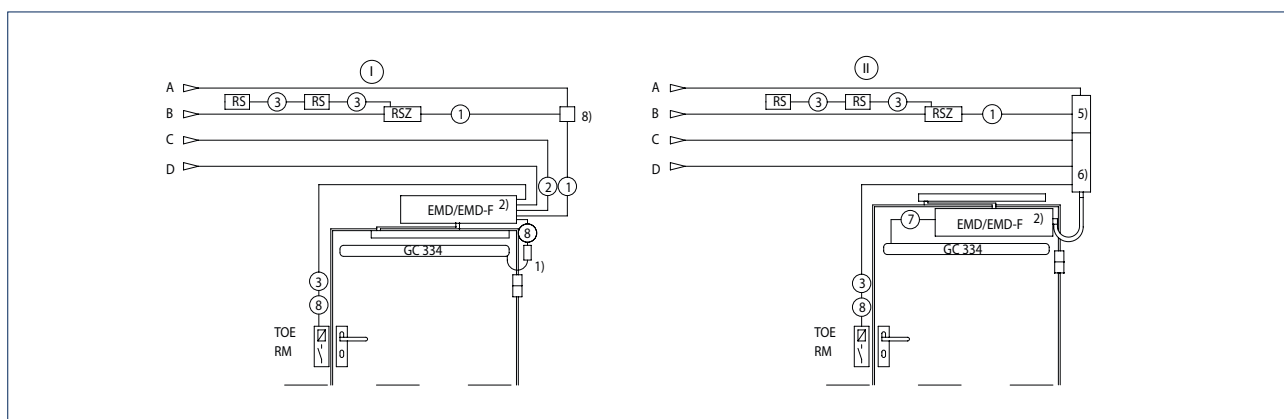
- HS = Main switch
- NOT = Emergency-stop switch

- 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

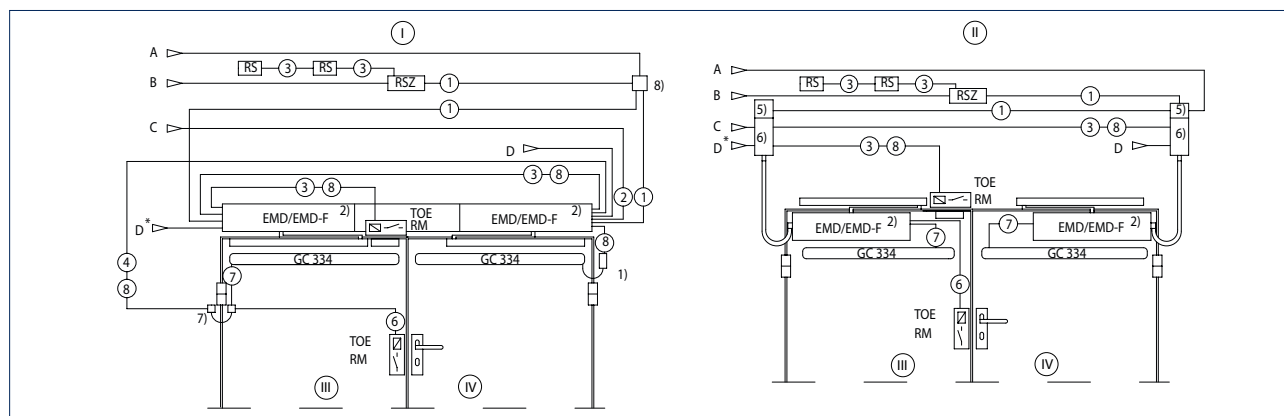


- I = Mains supply cable 230 V / 50 Hz
- II = Fuse 10 A
- III = Connected load 230 W, 1 A 1-leaf,  
2-leaf with manual fixed leaf, connected load 460 W, 1 A for 2-leaf
- IV = And / Or
- V = Option

## 1-leaf



## 2-leaf

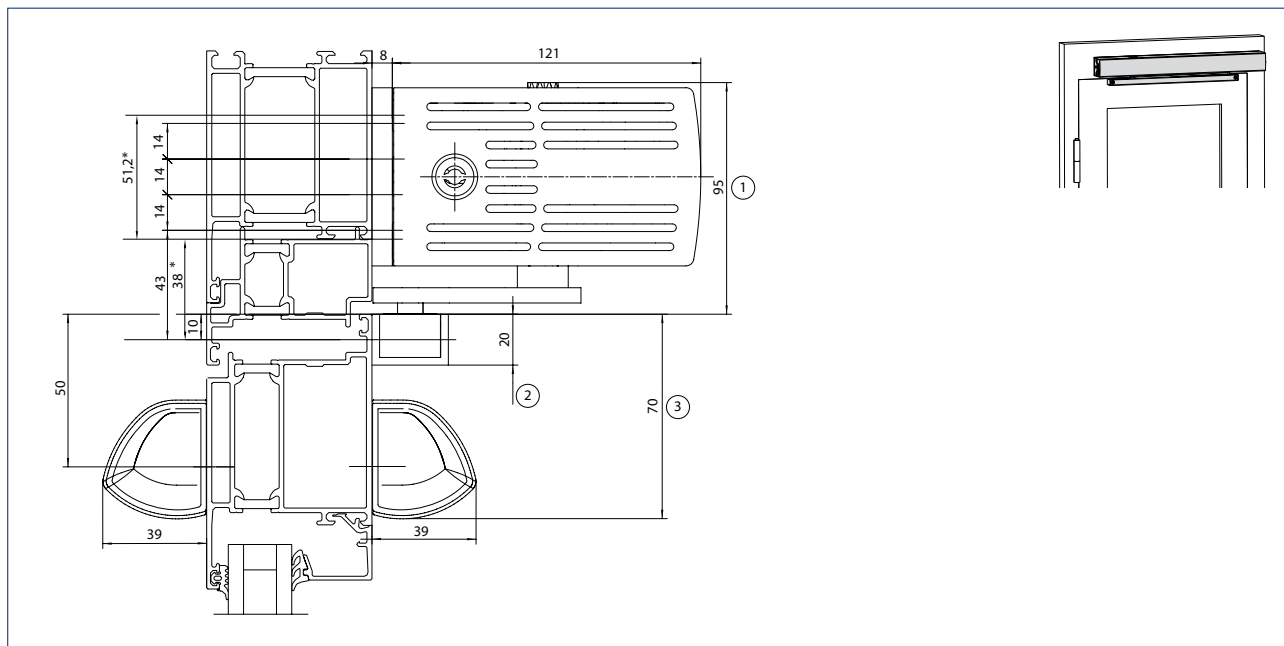


- I = Transom installation
- II = Door leaf installation
- III = Fixed leaf
- IV = Active leaf

**Electromechanical swing door drive for 1-leaf and 2-leaf single-action doors (RWA fresh air supply and doors in emergency exit routes)**

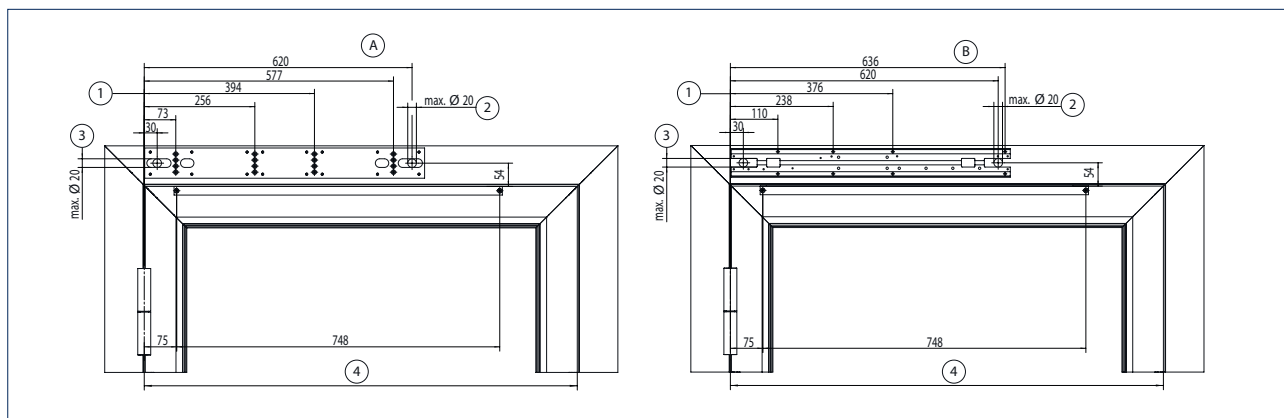
### Transom installation with guide rail on the hinge side, single-leaf

Drawing no. 70106-ep01



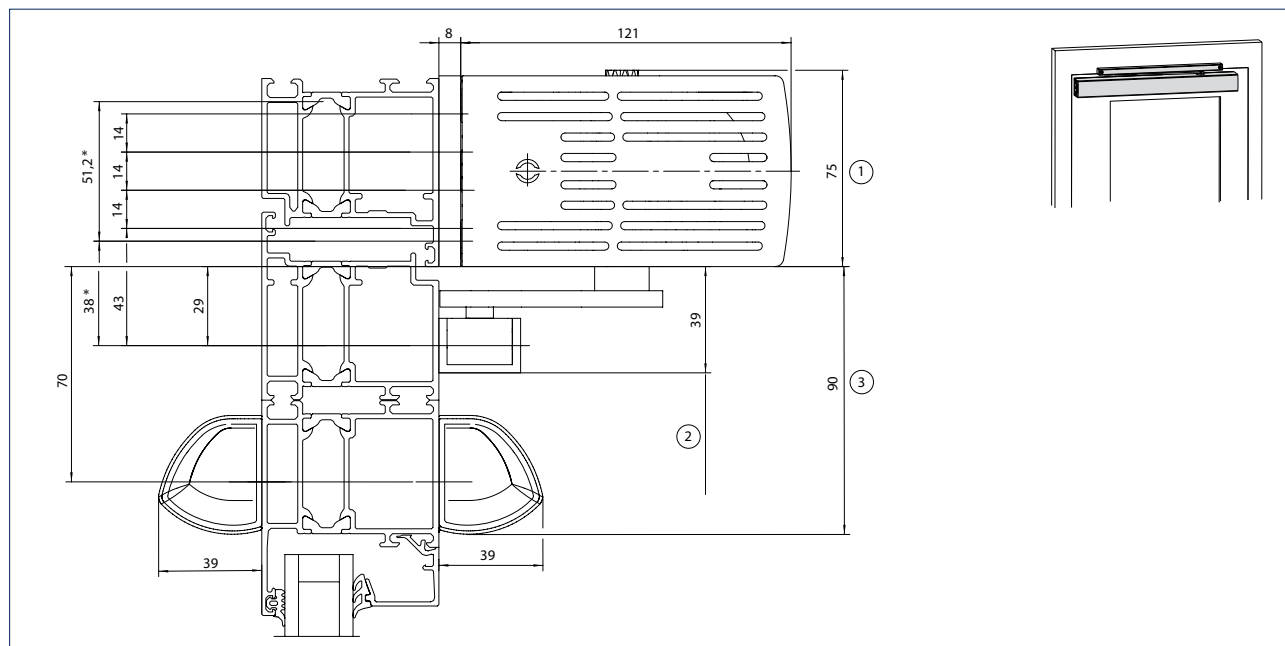
- \* = Direct installation
- 1 = EMD-F/EMD Invers space requirement
- 2 = Guide rail space requirement
- 3 = GC 338 space requirement

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



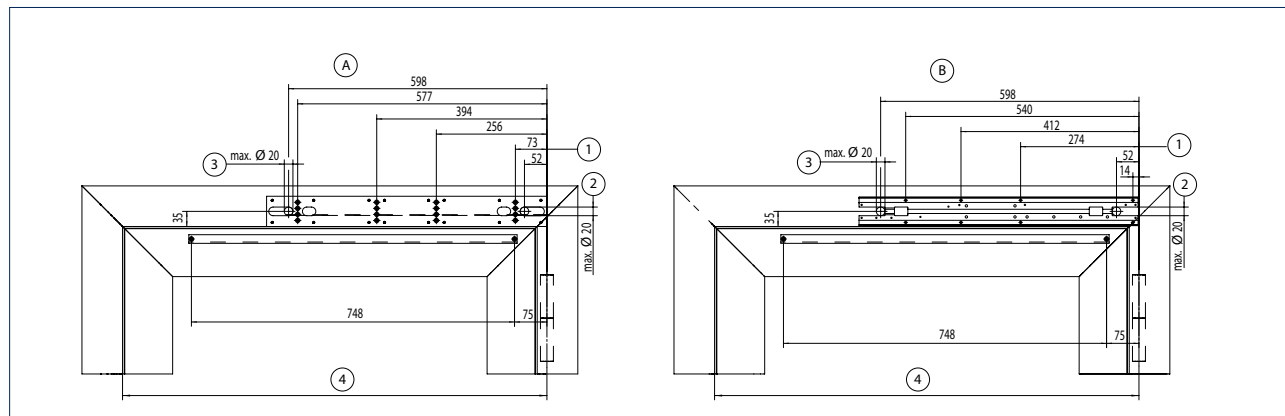
- A = Installation with mounting plate  
B = Direct installation  
1 = Dimensional reference is middle of hinge  
2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact  
3 = Concealed cable line-feed 230 V / 50 Hz  
4 = Door leaf width

Drawing no. 70106-ep02



- \* = Direct installation
- 1 = EMD-F/EMD Invers space requirement
- 2 = Guide rail space requirement
- 3 = GC 338 space requirement

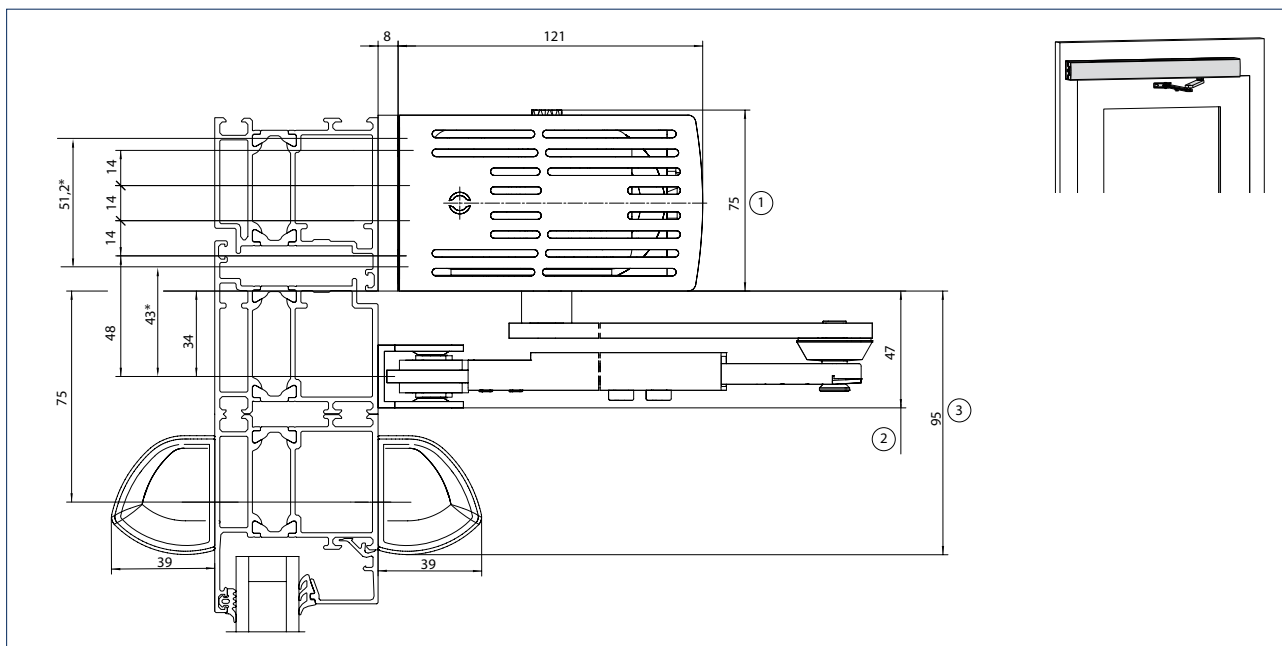
### Installation with mounting plate (A) and direct installation (B)



- A = Installation with mounting plate  
B = Direct installation  
1 = Dimensional reference is middle of hinge  
2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact  
3 = Concealed cable line-feed 230 V / 50 Hz  
4 = Door leaf width

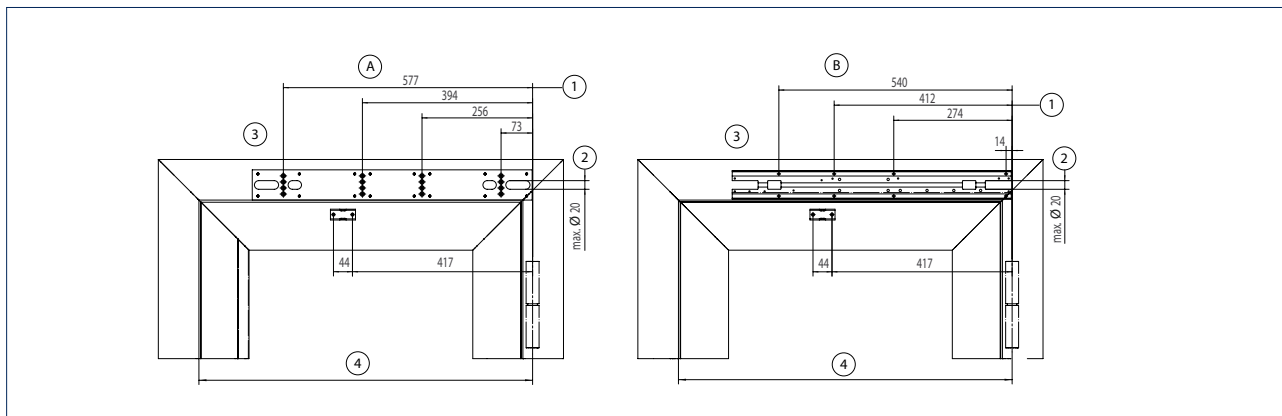
### Transom installation with link arm on the opposite hinge side, single-leaf

Drawing no. 70106-ep03



- \* = Direct installation
- 1 = EMD-F/EMD Invers space requirement
- 2 = Link arm space requirement
- 3 = GC 338 space requirement

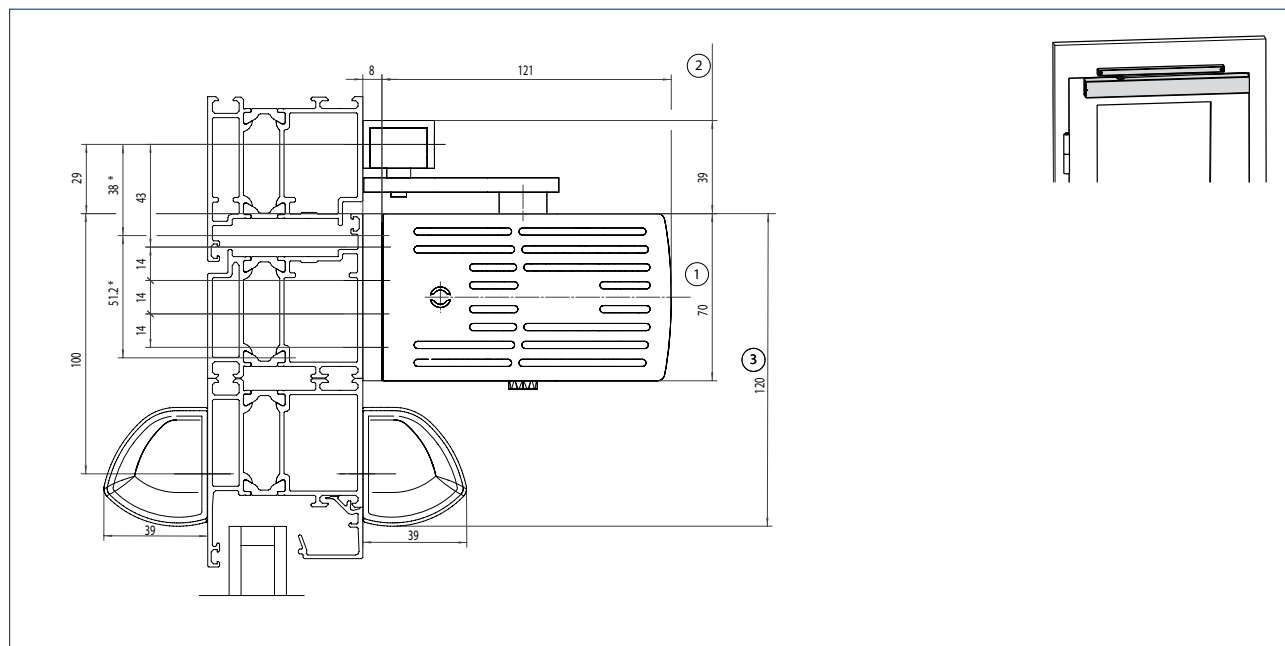
### Installation with mounting plate (A) and direct installation (B)



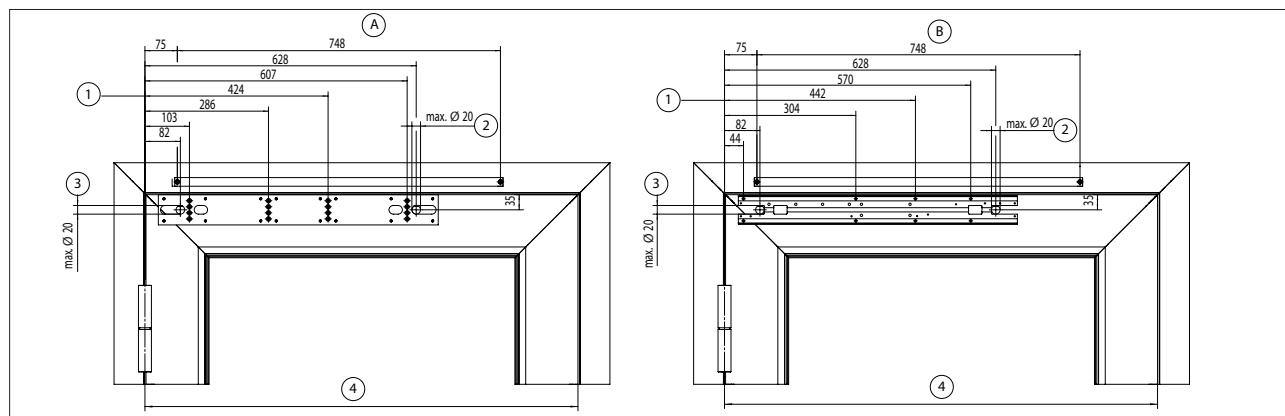
- A = Installation with mounting plate
- B = Direct installation
- 1 = Dimensional reference is middle of hinge
- 2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact
- 3 = Concealed cable line-feed 230 V / 50 Hz
- 4 = Door leaf width

**Door leaf installation with guide rail on the hinge side, single-leaf**

Drawing no. 70106-ep04



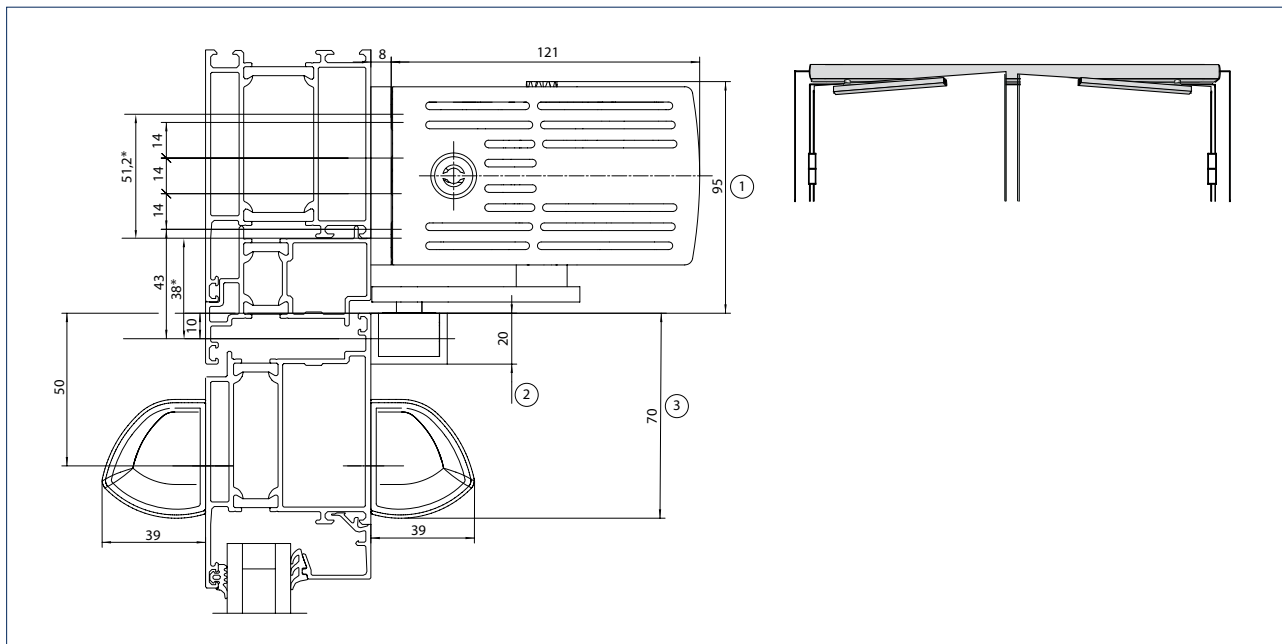
- \* = Direct installation
- 1 = EMD-F/EMD Invers space requirement
- 2 = Guide rail space requirement
- 3 = GC 338 space requirement

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

- A = Installation with mounting plate
- B = Direct installation
- 1 = Dimensional reference is middle of hinge
- 2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact
- 3 = Concealed cable line-feed 230 V / 50 Hz
- 4 = Door leaf width

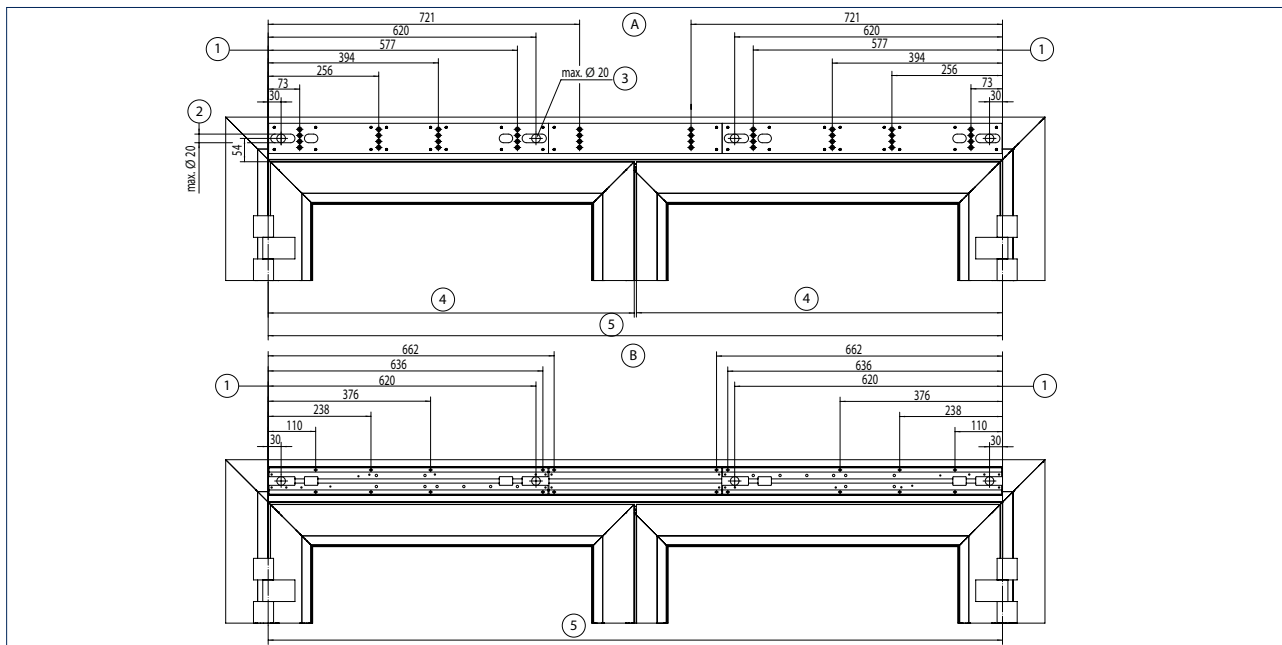
### Transom installation with guide rail on the hinge side, double-leaf

Drawing no. 70106-ep21



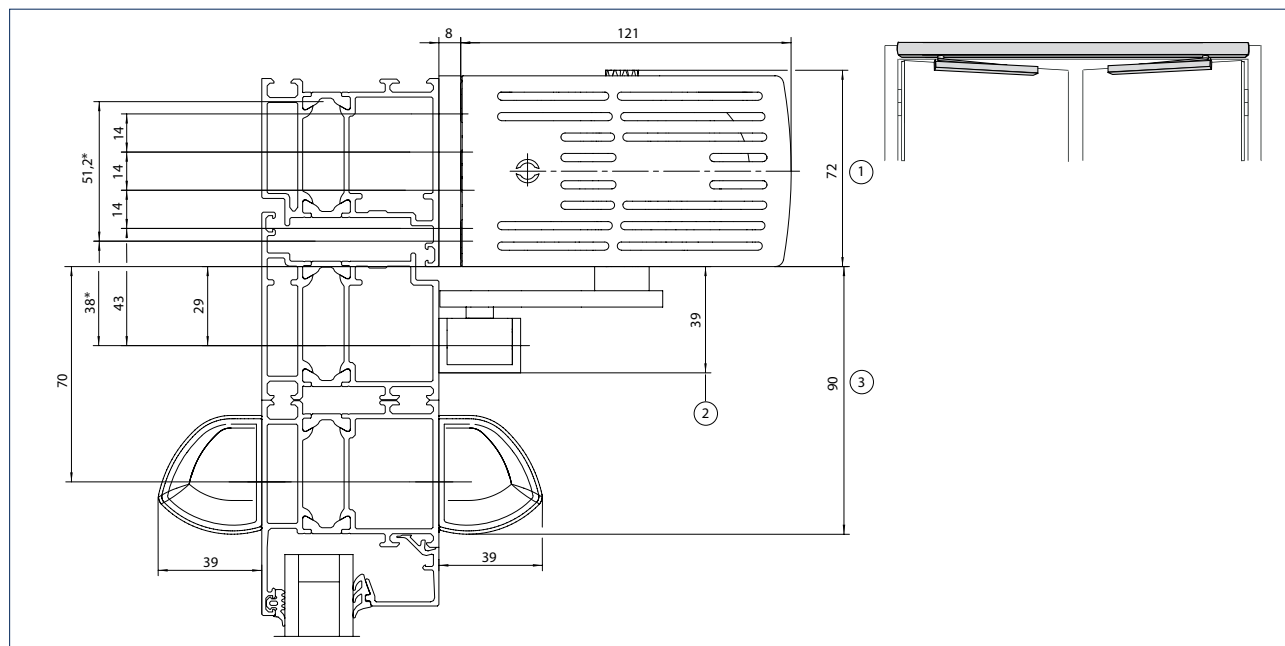
- \* = Direct installation
- 1 = EMD-F/EMD Invers space requirement
- 2 = Guide rail space requirement
- 3 = GC 338 space requirement

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



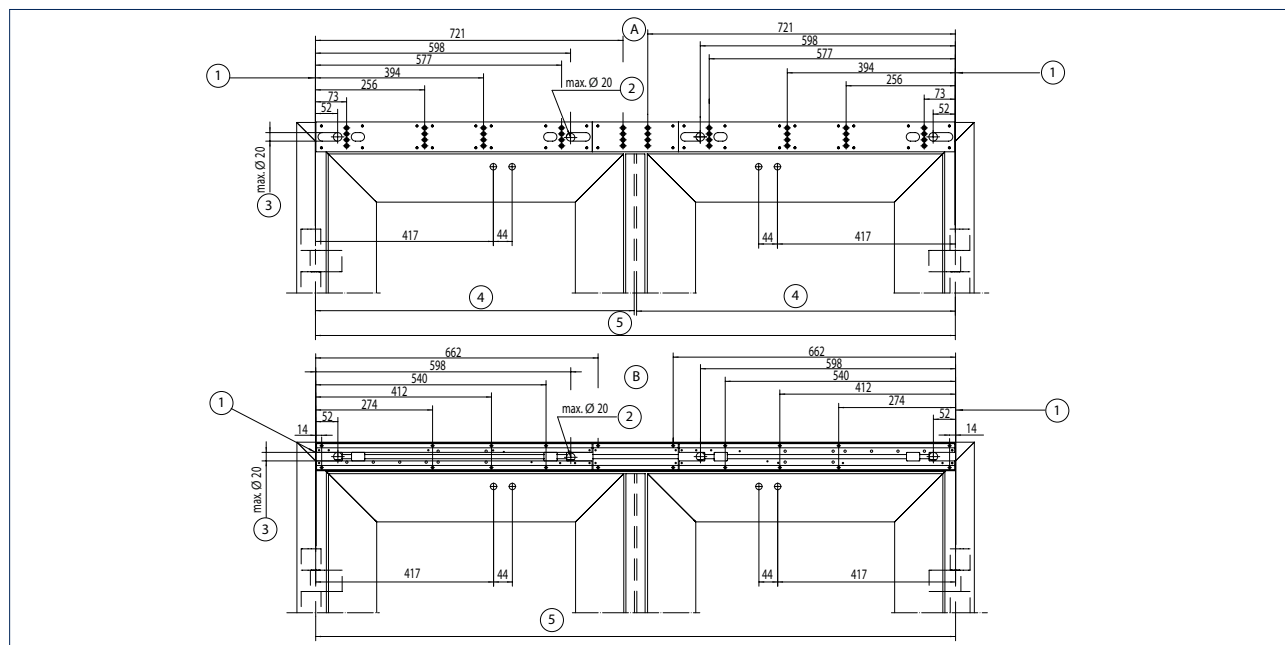
- A = Installation with mounting plate
- B = Direct installation
- 1 = Dimensional reference is middle of hinge
- 2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact
- 3 = Concealed cable line-feed 230 V / 50 Hz
- 4 = Door leaf width
- 5 = Hinge clearance

Drawing no. 70106-ep22



- \* = Direct installation
- 1 = EMD-F/EMD Invers space requirement
- 2 = Guide rail space requirement
- 3 = GC 338 space requirement

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

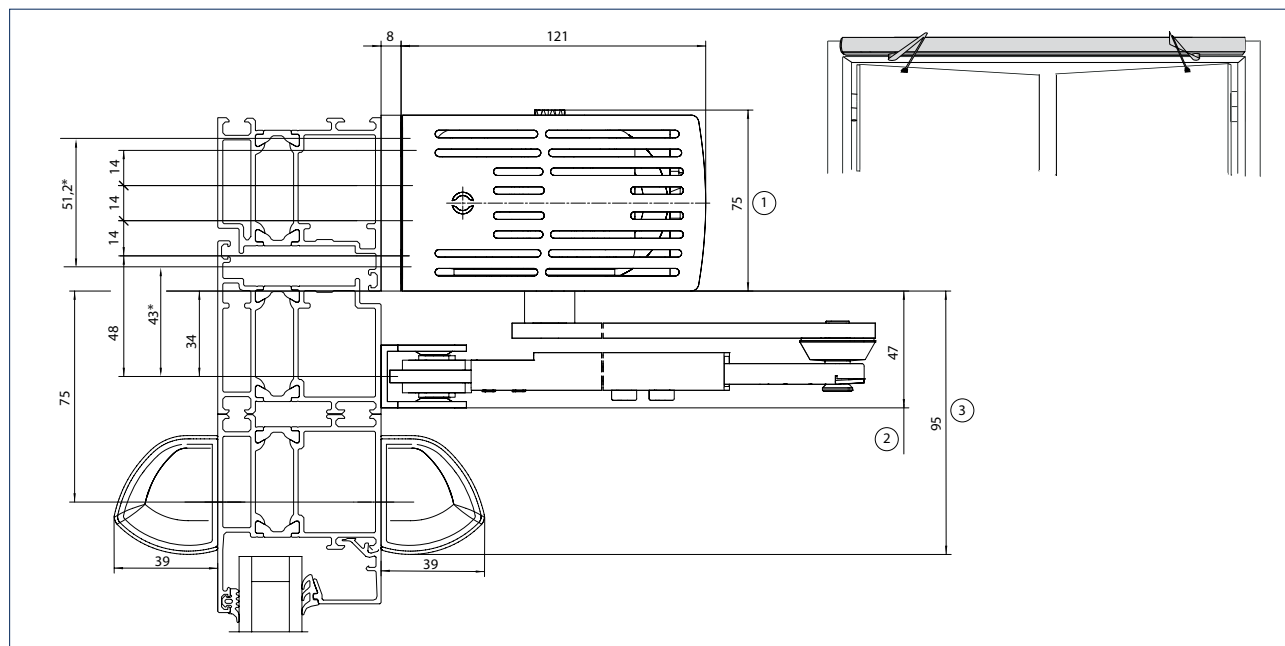


- A = Installation with mounting plate  
B = Direct installation  
1 = Dimensional reference is middle of hinge  
2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact  
3 = Concealed cable line-feed 230 V / 50 Hz  
4 = Door leaf width  
5 = Hinge clearance



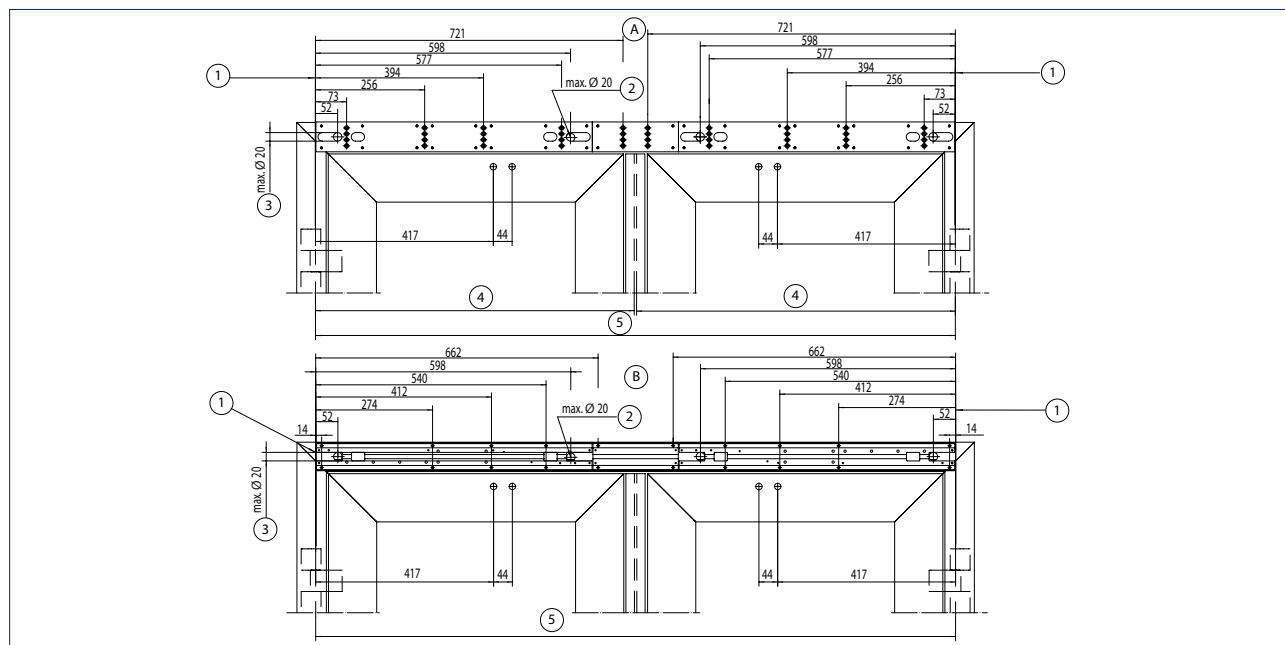
### Transom installation with link arm on the opposite hinge side, double-leaf

Drawing no. 70106-ep23



- \* = Direct installation
- 1 = EMD-F/EMD Invers space requirement
- 2 = Link arm space requirement
- 3 = GC 338 space requirement

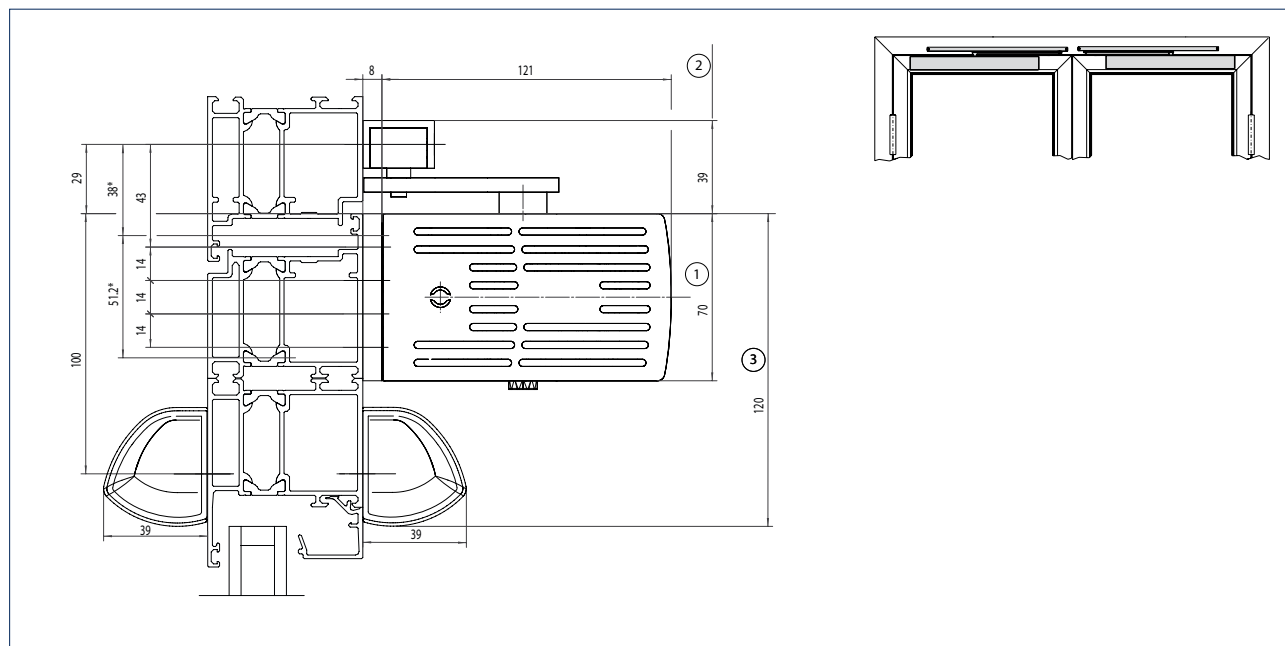
### Installation with mounting plate (A) and direct installation (B)



- A = Installation with mounting plate
- B = Direct installation
- 1 = Dimensional reference is middle of hinge
- 2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact
- 3 = Concealed cable line-feed 230 V / 50 Hz
- 4 = Door leaf width
- 5 = Hinge clearance

**Door leaf installation with guide rail on the hinge side, double-leaf**

Drawing no. 70106-ep24

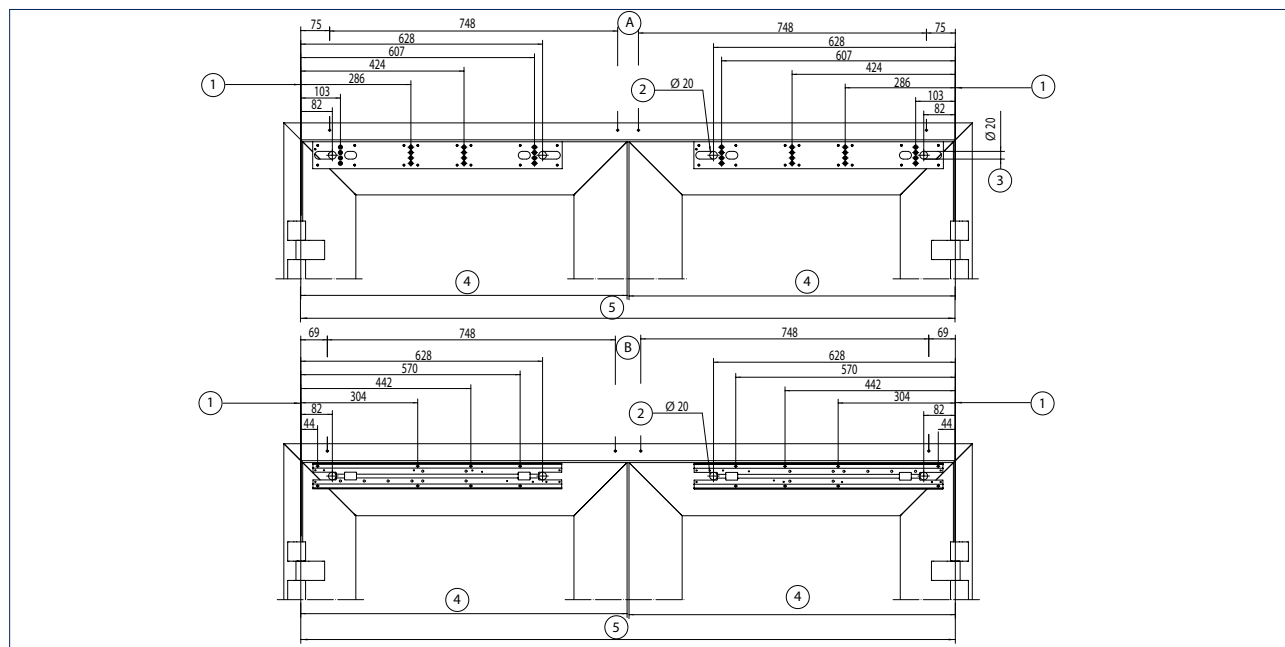


\* = Direct installation

1 = EMD-F/EMD Invers space requirement

2 = Guide rail space requirement

3 = GC 338 space requirement

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

A = Installation with mounting plate

B = Direct installation

1 = Dimensional reference is middle of hinge

2 = Concealed line-feed for sensors, door openers, programme switches and lock switch contact

3 = Concealed cable line-feed 230 V / 50 Hz

4 = Door leaf width

5 = Hinge clearance

## GEZE swing door drive TSA 160 NT

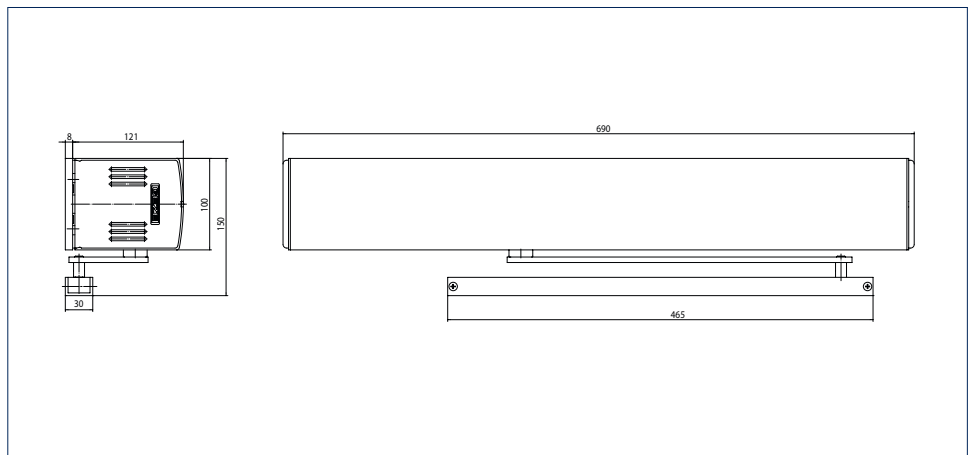
### Electrohydraulic swing door drive for 1 and 2-leaf single-action doors

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.

### GEZE TSA 160 NT



### GEZE TSA 160 NT



### Application range

- Internal and external doors
- Railway stations and airports
- Hotel and restaurants
- 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. swimming baths, thermal baths, sport and fitness centres
- Administration and public buildings
- Food industry

## GEZE TSA 160 NT

## Technical data

| Product features   | GEZE TSA 160 NT   | GEZE TSA 160 NT<br>Invers | GEZE TSA 160 NT IS | GEZE TSA 160 NT<br>EN7 |
|--|---|---------------------------|--------------------|------------------------|
| Height   | 100 mm  |                           |                    |                        |
| Width  | 690 mm  |                           |                    |                        |
| Depth  | 121 mm  |                           |                    |                        |
| Leaf weight (max.) 1-leaf                                  | 250 kg  |                           |                    | 310 kg                 |
| Hinge size (min.-max.) 2-leaf                              | 1470 – 2800 mm  |                           |                    | 1470 – 3200 mm         |
| Leaf width (min.-max.)                                     | 690 – 1400 mm   |                           |                    | 690 – 1600 mm          |
| Soffit depth (max.)*                                       | 350 mm  |                           |                    | 300 mm                 |
| Door overlap (max.)*                                       | 20 mm   |                           |                    |                        |
| Drive type   | Electrohydraulic  |                           |                    |                        |
| Door opening angle (max.)*                                 | 115 °   |                           |                    |                        |
| Spring pre-load  | EN3 – EN6**   |                           |                    | EN7                    |
| Z-variant (pulling)  | ●   | -                         | ●                  | ●                      |
| Z-variant (pushing)  | -   | ●                         | -                  | -                      |
| Left-hand  | ●   | ●                         | ●                  | ●                      |
| Right-hand   | ●   | ●                         | ●                  | ●                      |
| Transom installation opposite hinge side with link arm     | ●   | ●                         | ●                  | ●                      |
| Transom installation opposite hinge side with guide rail   | -   | -                         | -                  | -                      |
| Transom installation hinge side with guide rail            | ●   | ●                         | ●                  | ●                      |
| Door leaf installation opposite hinge side with guide rail | -   | -                         | -                  | -                      |
| Door leaf installation hinge side with guide rail          | -   | -                         | -                  | -                      |
| Door leaf installation hinge side with link arm            | -   | -                         | -                  | -                      |
| Mechanical latching action                                 | ●   | -                         | ●                  | ●                      |
| Electrical latching action                                 | -   | -                         | -                  | -                      |
| Electrical closing sequence control                        | ●   | ●                         | ●                  | ●                      |
| Mechanical closing sequence control                        | -   | -                         | ●                  | -                      |
| Disconnection from mains                                   | Not available   |                           |                    |                        |
| Activation delay (max.)                                    | 10 S  |                           |                    |                        |
| Operating voltage  | 230 V   |                           |                    |                        |
| Frequency of supply voltage                                | 50 – 60 Hz  |                           |                    |                        |
| Capacity rating  | 300 W   |                           |                    | 400 W                  |
| Power supply for external consumers (24 V DC)              | 1200 mA   |                           |                    |                        |
| Temperature range  | -10 – 60 °C   |                           |                    |                        |
| Enclosure rating   | IP 20   |                           |                    |                        |
| Operating modes  | Off, Automatic, Permanently open, Shop closing, Night   |                           |                    |                        |
| Type of function   | Fully automatic   |                           |                    |                        |
| Automatic function   | ●   | ●                         | ●                  | ●                      |
| Low-energy function  | -   | -                         | -                  | -                      |
| Servo function   | -   | -                         | -                  | -                      |
| Key function   | ●   | ●                         | ●                  | ●                      |
| Inverse function (opening by spring force)                 | -   | ●                         | -                  | -                      |
| Draught-proofing   | ●   | ●                         | ●                  | ●                      |
| Obstruction detection                                      | ●   | ●                         | ●                  | ●                      |
| Automatic reversing  | ●   | ●                         | ●                  | ●                      |
| Push & go  | adjustable  |                           |                    |                        |
| Operation  | Programme switch DPS, Programme switch MPS,<br>Programme switch TPS, Programme switch integrated in the drive |                           |                    |                        |
| Parameter setting  | Programme switch DPS, Controller  |                           |                    |                        |
| Approvals  | DIN 18650   |                           |                    |                        |
| Suitable for fire proof doors                              | -   | -                         | -                  | -                      |
| Use on smoke and fire doors (F-variant)                    | ●   | -                         | ●                  | -                      |

• = YES

- = NOT AVAILABLE

\* = DEPENDING ON THE TYPE OF INSTALLATION

\*\* = THIS DOES NOT APPLY FOR Z-VARIANT

**Overview of torques TSA 160 NT**

|   | pushing (min.-max.) | pulling (min.-max.) |
|---|---------------------|---------------------|
| Spring pre-load<br>Closer size EN 1154  | 3 - 6               | -                   |
| Closer torques:<br>torque exerted by the closing spring<br>during automatic opening | 20 Nm - >60 Nm      | 8 Nm - 30 Nm        |
| Opening torque:<br>torque exerted by the door<br>during automatic opening           | 150 Nm - 90 Nm      | 70 Nm - 40 Nm       |
| Opening torque:<br>manual torque to be exerted for door<br>opening                  | 35 Nm - 110 Nm      | 13 Nm - 45 Nm       |

**TSA 160 NT minimum and maximum leaf widths**

| Single-leaf doors                | Leaf width (min.)  | Leaf width (max.) |
|----------------------------------|--|-------------------|
| TSA 160 NT pushing <sup>1)</sup> | 690 mm   | 1400 mm           |
| TSA 160 NT pulling               | 950 mm (with operator displacement=0)<br>890 mm (with operator displacement=60 mm) | 1400 mm           |
| TSA 160 NT Z                     | 690 mm   | 1400 mm           |

<sup>1)</sup> Also on smoke and fire protection doors

**TSA 160 NT minimum and maximum leaf widths, hinge size for double-leaf doors**

| Double-leaf doors                         | Hinge size (min.) | Hinge size (max.) | Leaf width (min.)<br>active leaf <sup>2)</sup> | Leaf width (min.)<br>fixed leaf <sup>2)</sup> | Leaf width (max.) |
|---|-------------------|-------------------|--|---|-------------------|
| TSA 160 NT IS<br>pushing <sup>1)</sup>    | 1470 mm           | 2800 mm           | 690 mm   | 400 mm  | 1400 mm           |
| TSA 160 NT Z-IS<br>pulling                | 1470 mm           | 2800 mm           | 690 mm   | 650 mm  | 1400 mm           |
| TSA 160 NT IS/TS<br>pushing <sup>1)</sup> | 1260 mm           | 2800 mm           | 690 mm   | 400 mm  | 1400 mm           |
| TSA 160 NT IS/TS<br>pulling               | 1360 mm           | 2800 mm           | 690 mm   | 650 mm  | 1400 mm           |

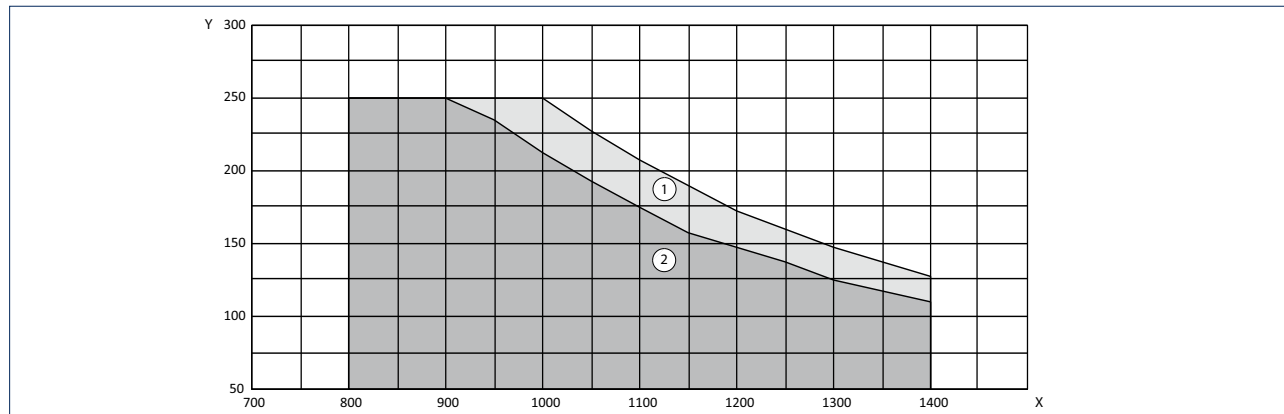
<sup>1)</sup> Also on smoke and fire protection doors<sup>2)</sup> The minimum hinge width must be observed!

## Areas of application

## Note

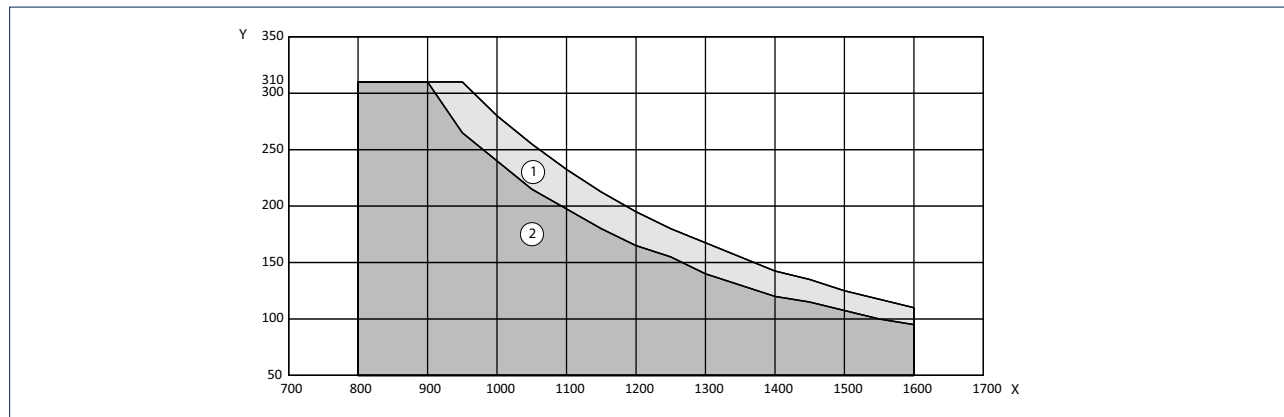
In low-energy mode the swing door drive moves at reduced speed and thus meets the safety requirement of DIN 18650. The use of safety sensors to safeguard the system is only necessary in individual cases, taking the user group into account. In automatic mode, however, the swing area of the door must always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

TSA 160 NT



- X = Door width (mm)  
 Y = Door weight (kg)  
 1 = Link arms  
 2 = Guide rail

TSA 160 NT E7

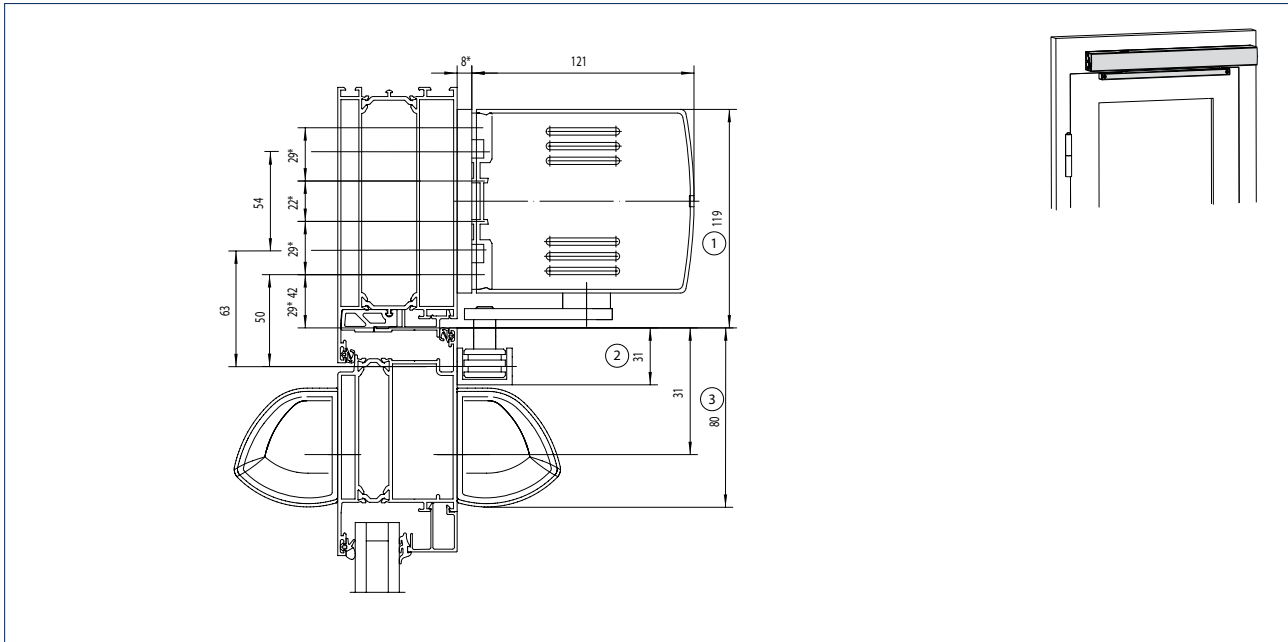


- X = Door width (mm)  
 Y = Door weight (kg)  
 1 = Link arms  
 2 = Guide rail

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. 70423-ep02

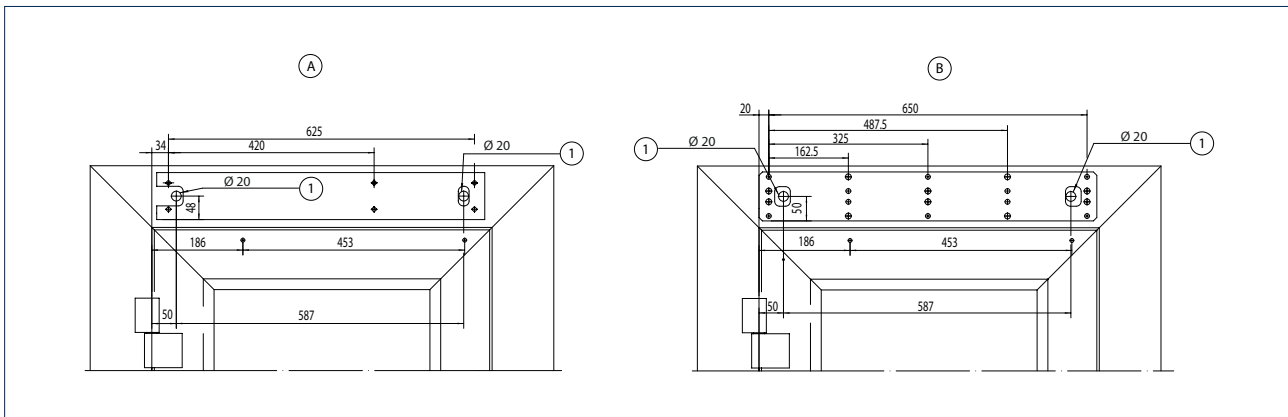


\* = Installation with mounting plate

1 = TSA 160 NT space requirement

2 = Guide rail space requirement

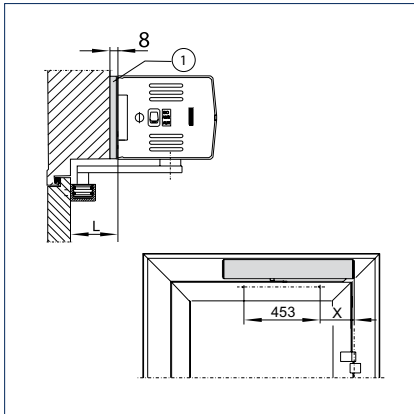
3 = GC 338 space requirement



A = Direct installation

B = Installation with mounting plate

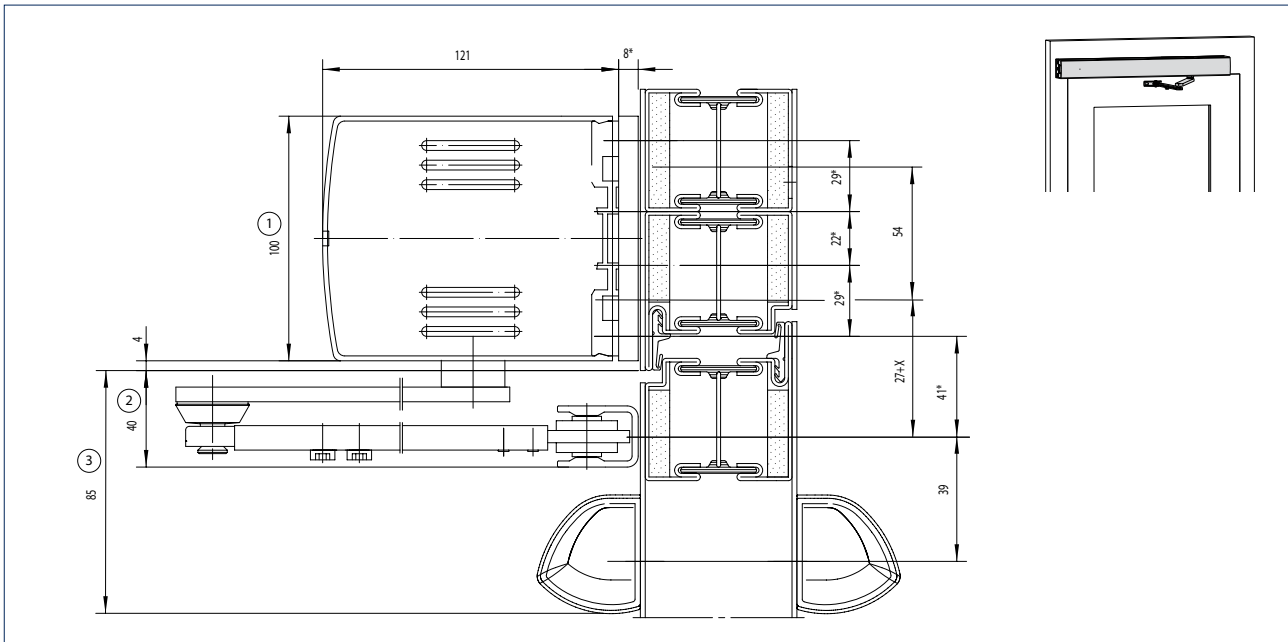
1 = Concealed line-feed



1 = Mounting plate

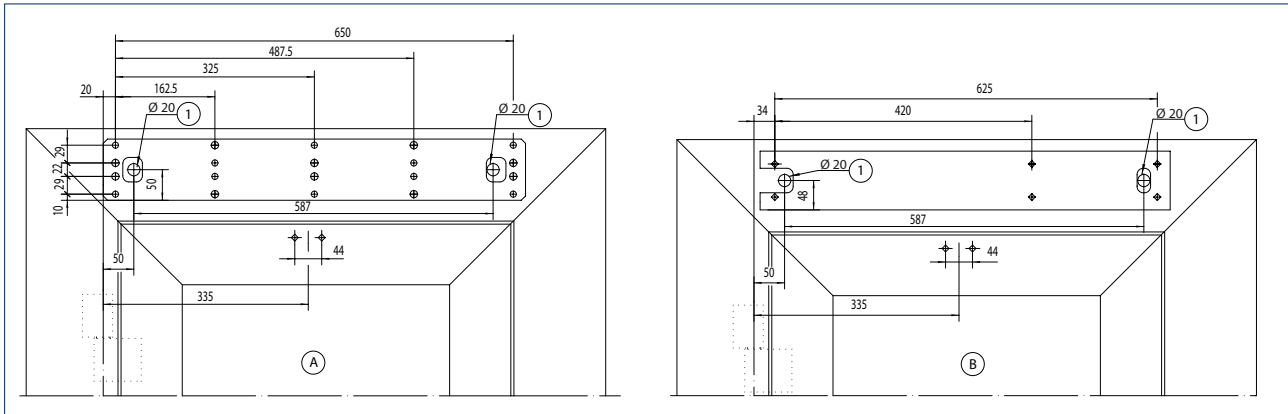
### Transom installation with link arm on the opposite hinge side, single-leaf

Drawing no. 70423-ep01



- \* = Installation with mounting plate
- 1 = TSA 160 NT space requirement
- 2 = Link arm space requirement
- 3 = GC 338 space requirement





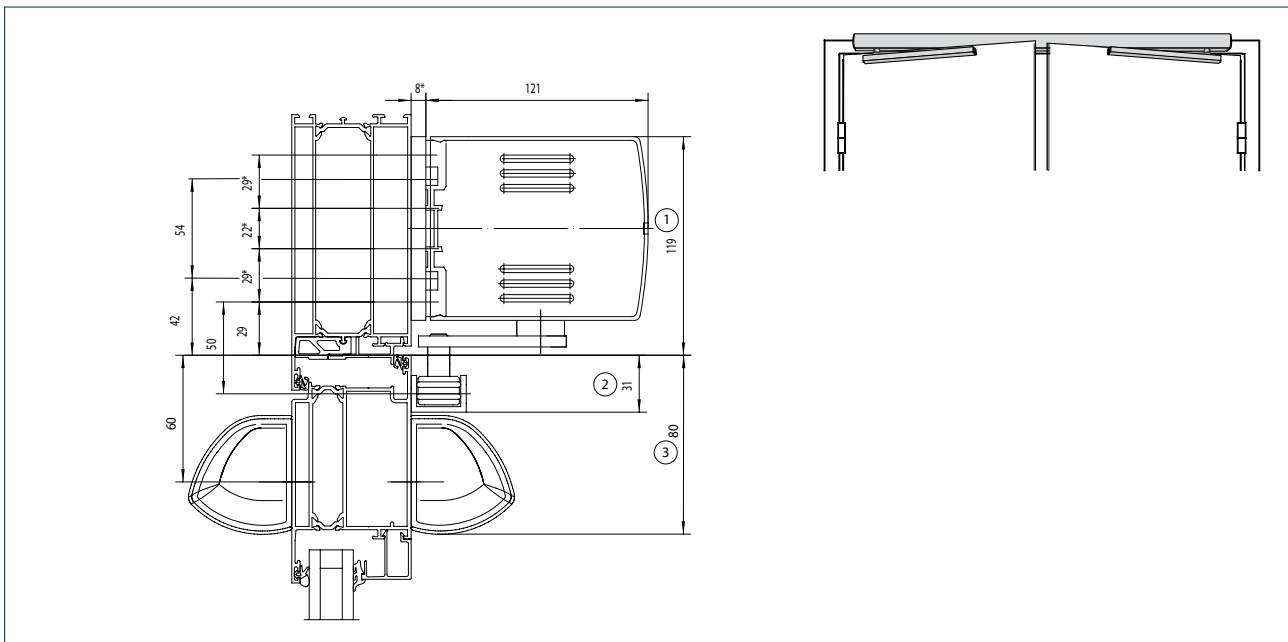
A = Direct installation

B = Installation with mounting plate

1 = Concealed line-feed

### Transom installation with guide rail on the hinge side, double-leaf

Drawing no. 70423-ep22

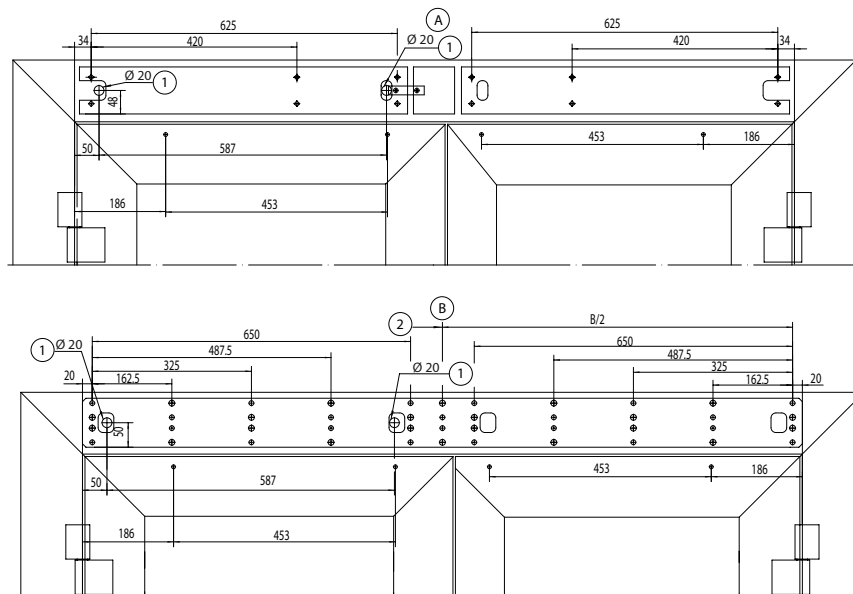


\* = Installation with mounting plate

1 = TSA 160 NT space requirement

2 = Guide rail space requirement

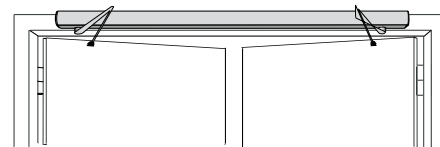
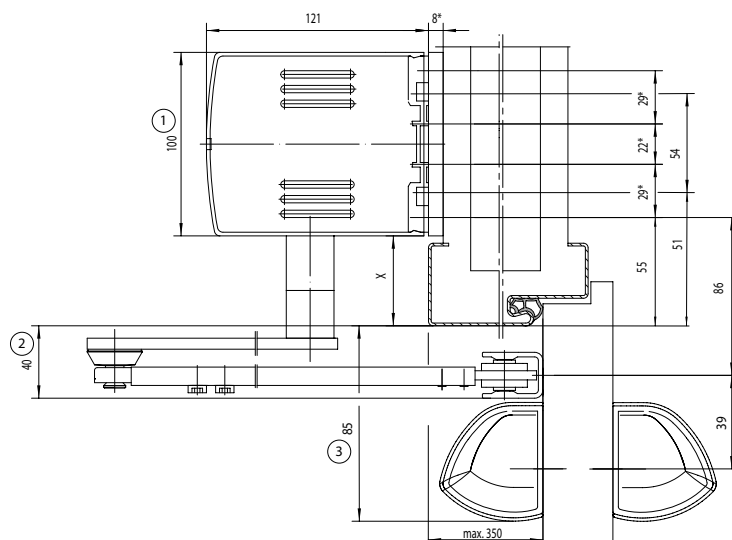
3 = GC 338 space requirement



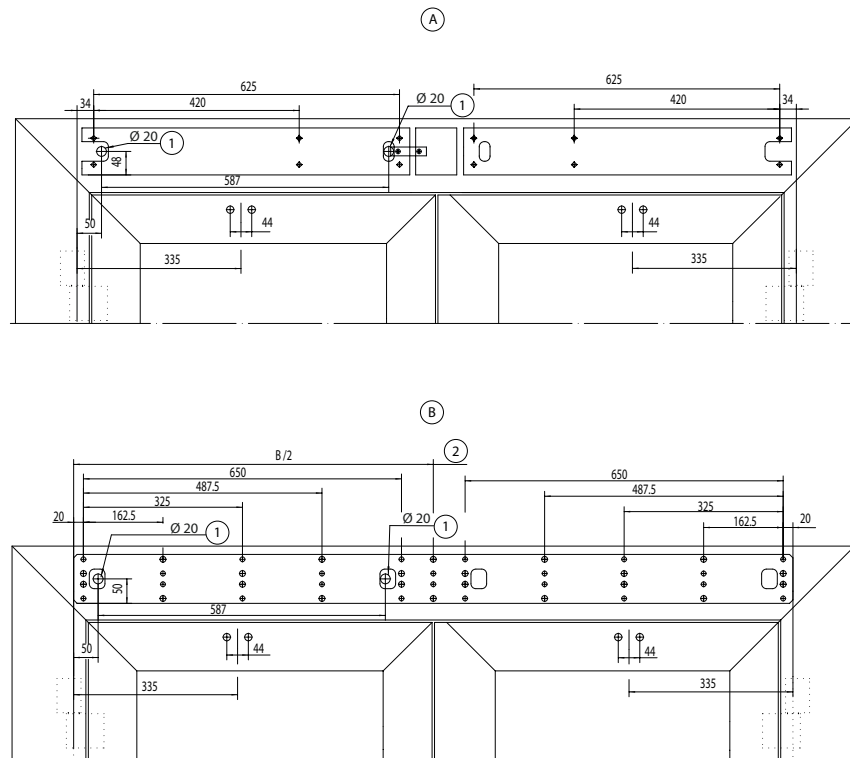
- A = Direct installation  
 B = Installation with mounting plate  
 1 = Concealed line-feed  
 2 = only required if B>2000

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

Drawing no. 70423-ep11



- X = Spindle extension  
 \* = Installation with mounting plate  
 1 = TSA 160 NT space requirement  
 2 = Link arm space requirement  
 3 = GC 338 space requirement



- A = Direct installation  
 B = Installation with mounting plate  
 1 = Concealed line-feed  
 2 = only required if B>2000

### TSA 160 NT

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

**Legend for the cable diagrams****Cable**

- 1 = NYM-J 3 x 1.5 mm<sup>2</sup>
- 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 mm<sup>2</sup>
- 6 = LiYY 4 x 0.25 mm<sup>2</sup>
- 7 = Scope of supply sensor strip or LiYY 5 x 0.25 mm<sup>2</sup>
- 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 VDE 0100
- 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 sketch A and B

3) Cable including in the scope of supply for the sensor

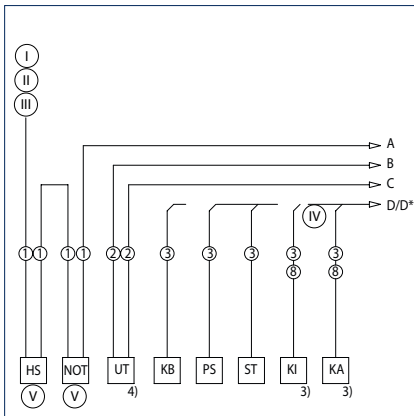
4) Install in the direct vicinity of the door

7) E.g. door transmission cable, 8-wire, art. no. 066922

8) Branch box, on site

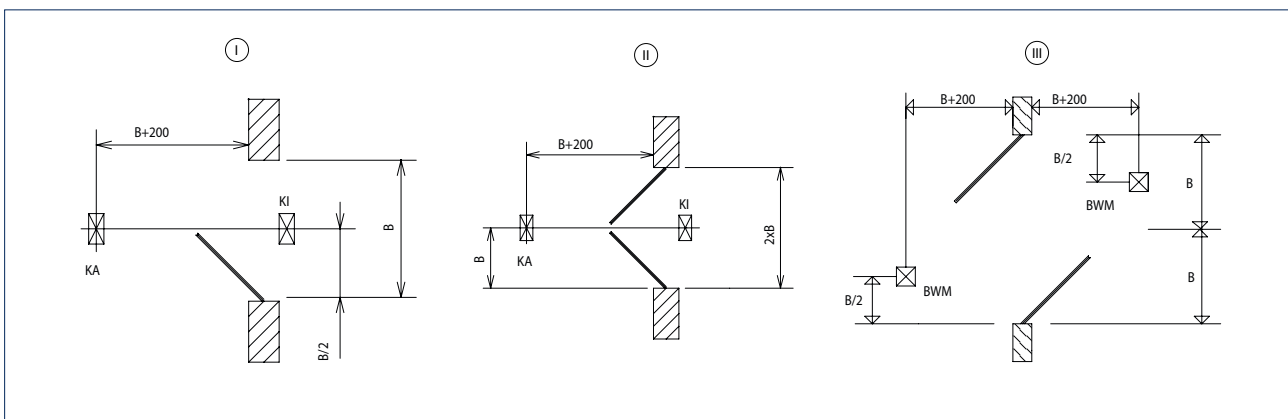
**Abbreviations**

- 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



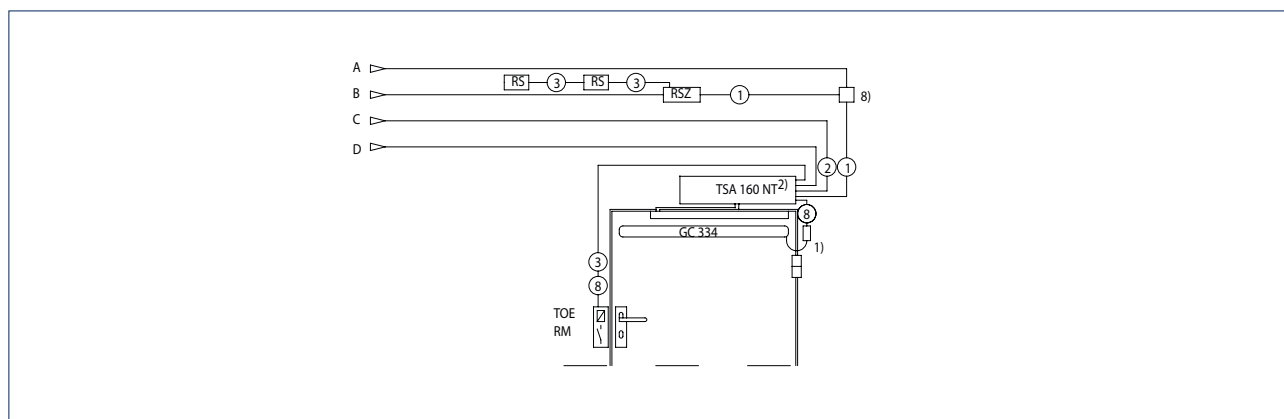
- I = Mains supply cable 230 V / 50 Hz
- II = Fuse 10 A
- III = Connected load 300 W 1.3 A for 1-leaf with manual fixed leaf Connected load 600 W 2.6 A for 2-leaf
- IV = And / Or
- V = Option

#### Positioning of the movement detectors

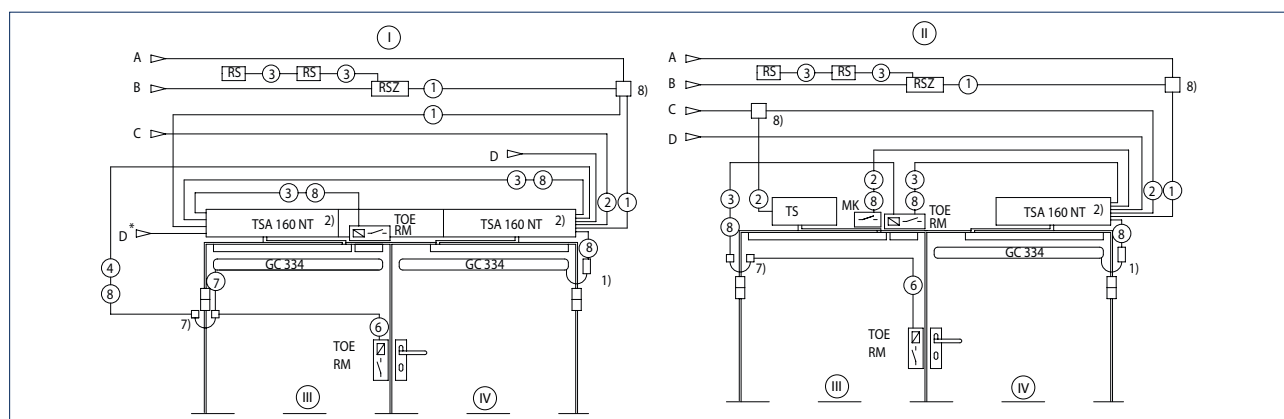


- I = Positioning of the movement detector 1-leaf
- II = Positioning of the movement detector 2-leaf
- III = Positioning of the movement detector 2-leaf, 2E

## TSA 160 NT cable plan single-leaf

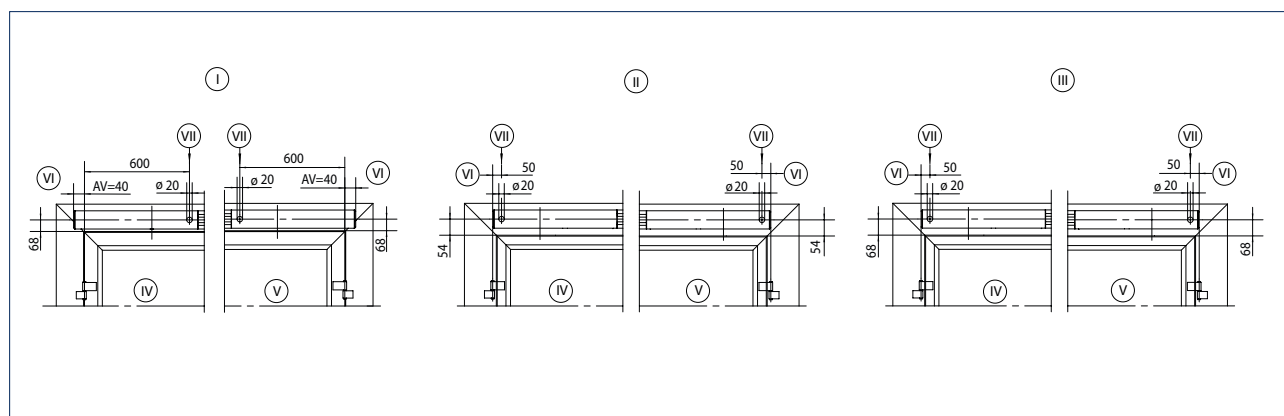


## TSA 160 NT cable plan double-leaf



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

## TSA 160 NT cable exit



- 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

## Accessories for swing door systems

### Hood, mounting plate, link arm, 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)

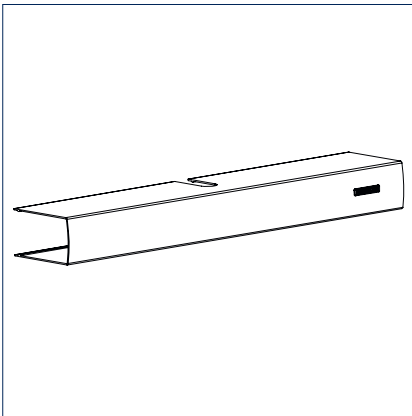
A mounting plate may be necessary, depending on the installation situation. A mounting plate is generally recommended to make installation easier. A respective mounting plate is supplied according to the hood version.

#### Link arms

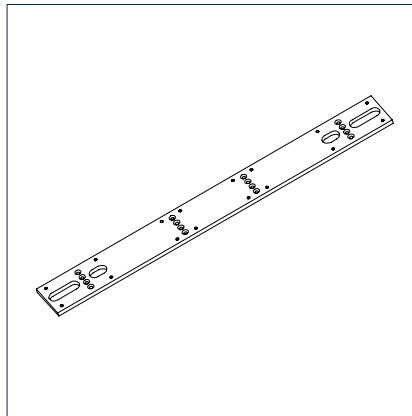
are offered for different soffit depths

#### Guide rail with lever

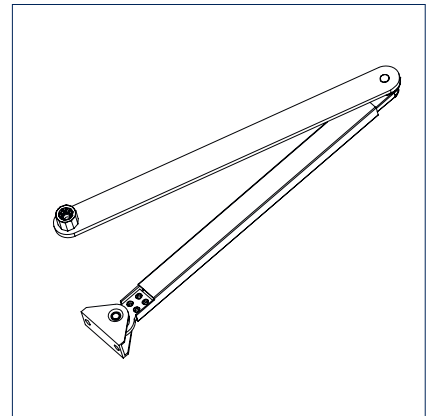
Installation depends on the type of hinge action chosen.



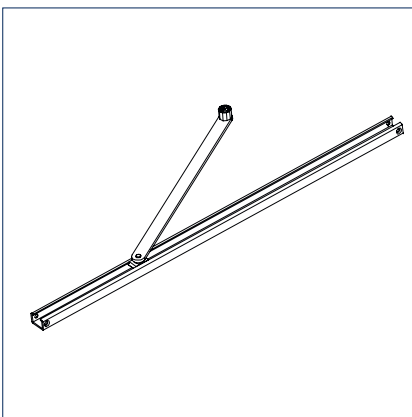
Cover



Mounting plate



Link arms



Guide rail with lever

#### Note

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

## Operating automatic swing doors

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

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.

Option: The door leaves are locked electrically to prevent forced opening.

##### “Shop closing” (one-way)

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” (only with TPS and MPS)

Drive and 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 FR variants.

### Securing the programme switches

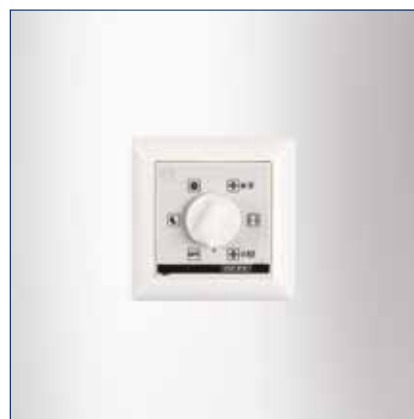
The mechanical programme switch (MPS) is also available in a lockable version. The display programme switch (DPS) and key programme switch (TPS) can be combined with a key switch. Alternatively, these programme switches can be secured using a code.



Display programme switch (DPS)



Key programme switch (TPS)



Mechanical programme switch (MPS)



## 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 cause a time-delayed reflection 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

## Manual actuation

### Push buttons

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

#### Non-contact 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. An acoustic and 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.



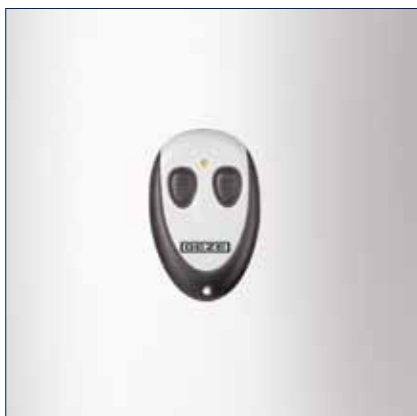
Push buttons



Non-contact capacitive push button



Non-contact infrared sensor



Radio actuation



Large-scale button made of plastic



Large-scale button made of stainless steel

## Electronic protection

### Safety sensor strips

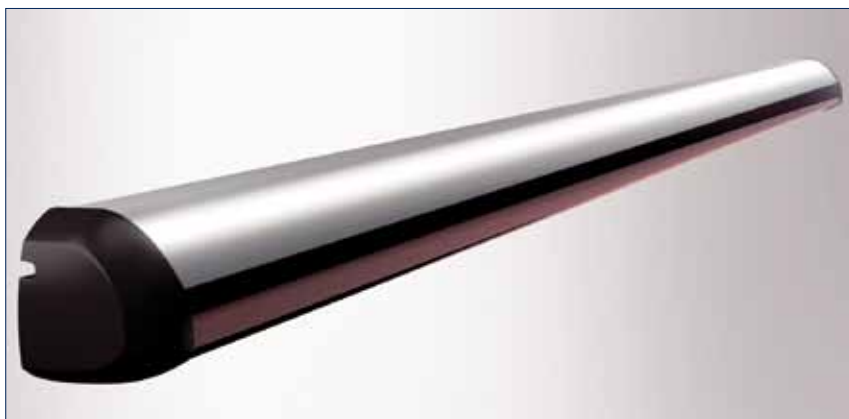
Safety sensor strips are used to monitor and safeguard the pivoting area of automatic swing door leaves. They are installed on both sides of the door, directly on the leaf. This guarantees maximum protection both during opening and closing of the door.

GEZE safety sensors work with infrared light. Electromagnetic waves which are invisible to the human eye are directed by a transmitter to 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.

### Sensor strip GC 338

The new energy and space-saving sensor strip GC 338 has a very large safety range and offers extended protection on the main and secondary closing edges. In addition, the sensor has background elimination which guarantees the greatest possible safety even where doors open against walls. Only one single sensor system is required to protect all GEZE swing door drives with door leaf widths of up to 1200 millimetres. The GC 338 not only offers advantages during installation and commissioning – the complete door system is supplied via one interface. The sensor automatically adapts to its environment. This saves teaching time and installation costs. The GEZE sensor strip GC 338 has the following features:

- Reliable function for all weather and floor conditions up to 3.5 m in accordance with DIN 18650
- A sensor system protects door leaf widths up to 1200 mm
- Background elimination: sensor can detect a wall and eliminate it automatically
- Elegant guide rail, can be realised even with slim door profiles
- Sleep mode if the sensor is not required - saves up to 50% energy in relation to comparable sensors
- Current consumption in operating mode: 200 mA
- Current consumption in sleep mode: 100 mA
- Fast and simple installation of the modules thanks to the SNAP IN mechanism which allows modules to be positioned and fixed in the profile without tools being necessary



Sensor strip GC 338

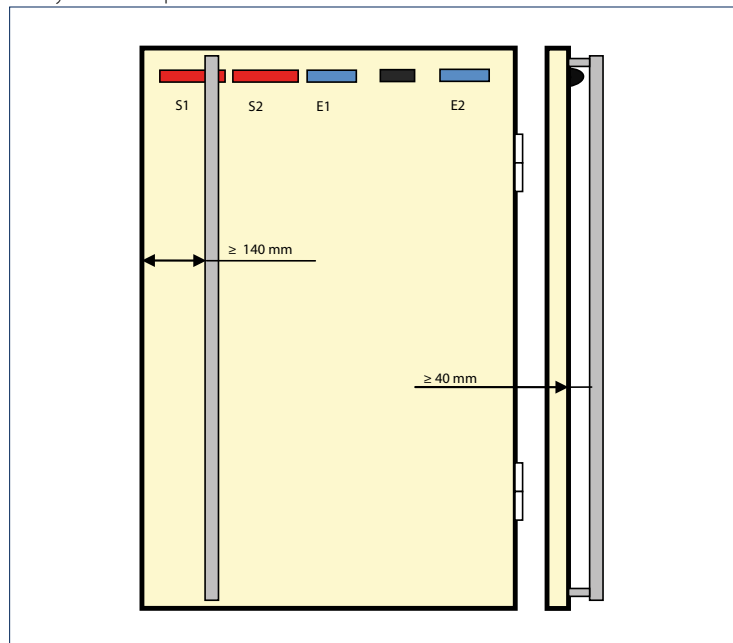


Frontal detection field



Background elimination

## Safety sensor strip with handle bar



1) Position right-hand side of the first transmitter module (S1) about 20 mm on the right of the handle bar

2) The second transmitter module (S2) is positioned directly next to this (distance: 10 to 15 mm)

3) The first receiver module (E1) is positioned directly next to the second transmitter module (S2) (distance: 10 to 15 mm)

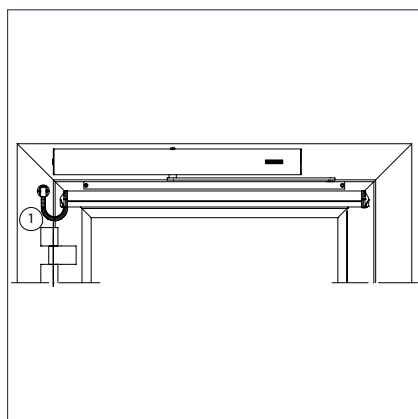
4) The door is protected in accordance with DIN 18650

5) Where the handle bar is > 50 mm away from the door, it can help to enlarge the angle adjustment or to displace S1 to the left or right a little. Note: The door can then not be protected in accordance with DIN 18650

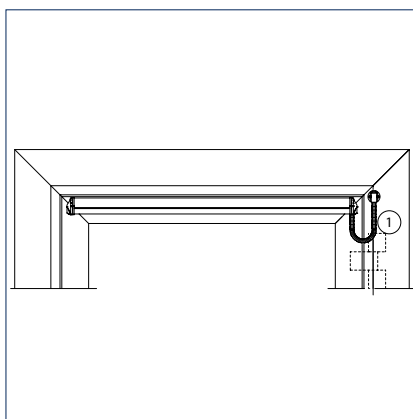
6) Where the handle bar diameter is > 45 mm, the factory must be consulted

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

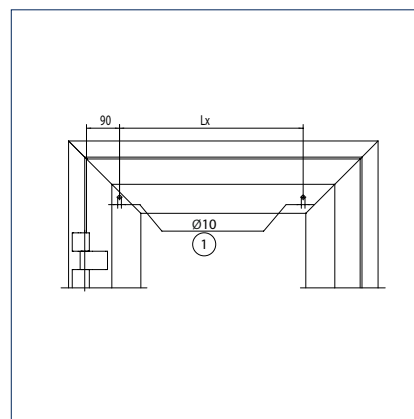
## Installation on the hinge side



„Open“ safety sensor mounted on the hinge side

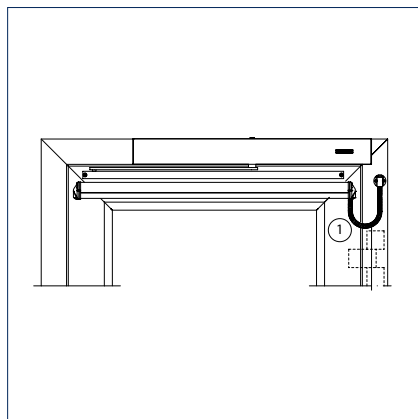


„Close“ safety sensor mounted on the opposite hinge side

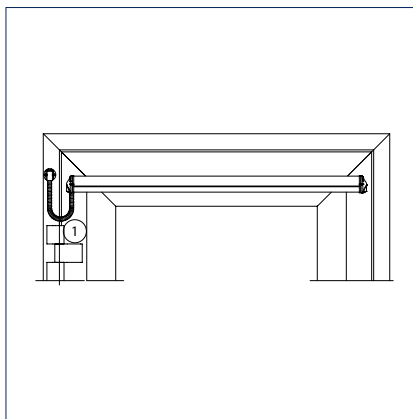


Safety sensor hole pattern, hinge side

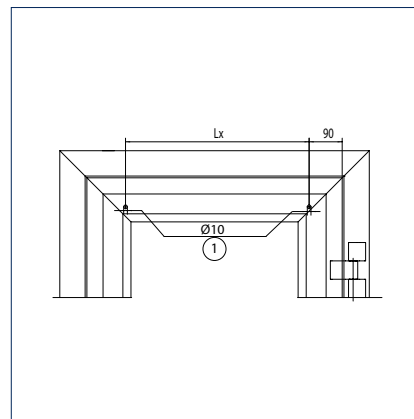
## Installation on the opposite hinge side



„Close“ safety sensor mounted on the opposite hinge side



„Open“ safety sensor mounted on the hinge side



Safety sensor hole pattern, opposite hinge side

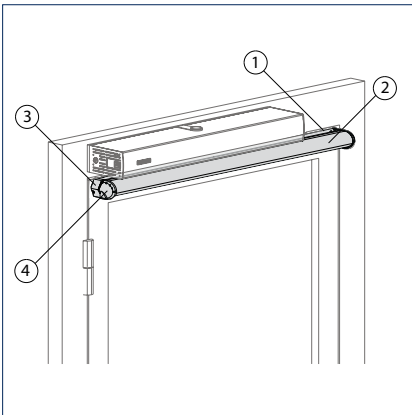
1 = optional power supply, concealed routing possible. Drillhole Ø 10 for concealed line-feed.

Lx = Profile length 1100 mm : Lx = 489 mm; profile length 1500 mm : Lx = 699 mm

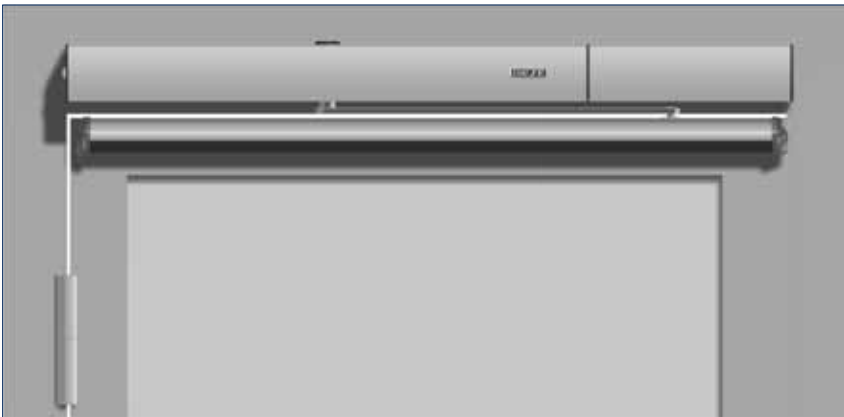
**Sensor guide rail GC GR - the ideal combination of safety and design**

The GC GR sensor guide rail is available for the complete range of Slimdrive EMD models and all the TSA 160 NT drive version, and meets the safety requirement for swing door systems specified in DIN18650. The sensor and the 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:

- Safety tested to DIN 18650
- Suitable for single and double-leaf swing door
- Available for all TSA 160 NT and Slimdrive EMD variants with guide rail
- Sensor and guide rail profile are available separately, facilitating retrofits to existing systems
- The flexible kit and a rain cover are available as accessories



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

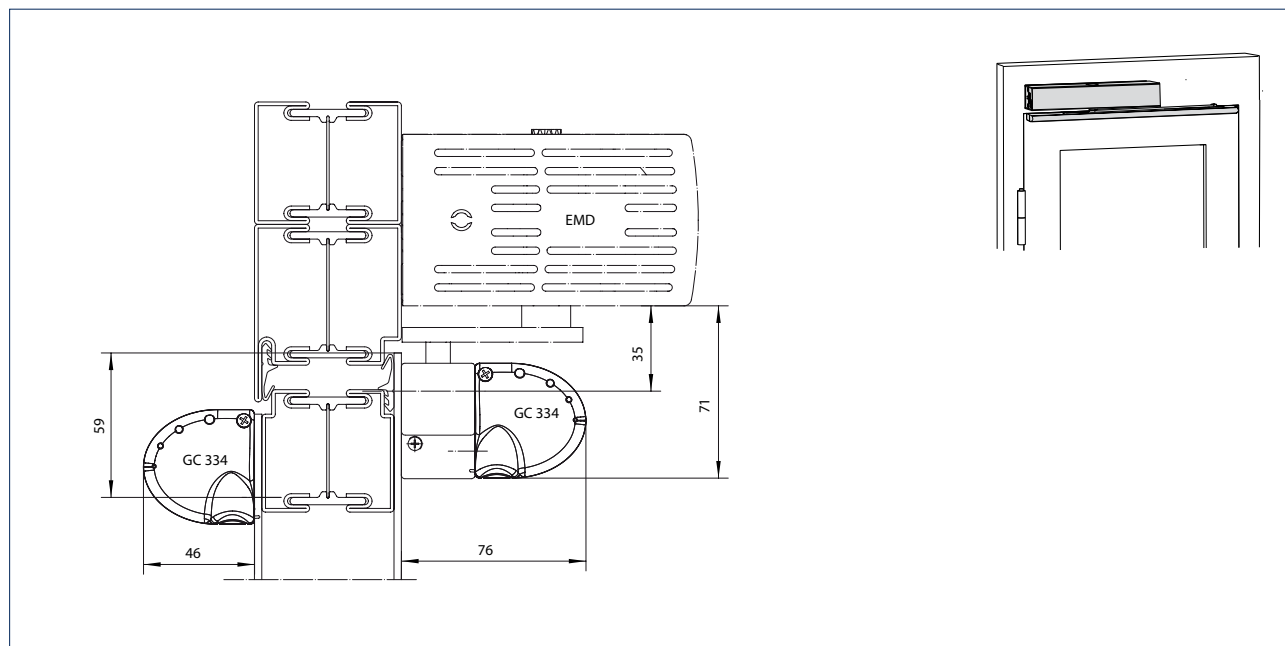


Sensor guide rail GC GR

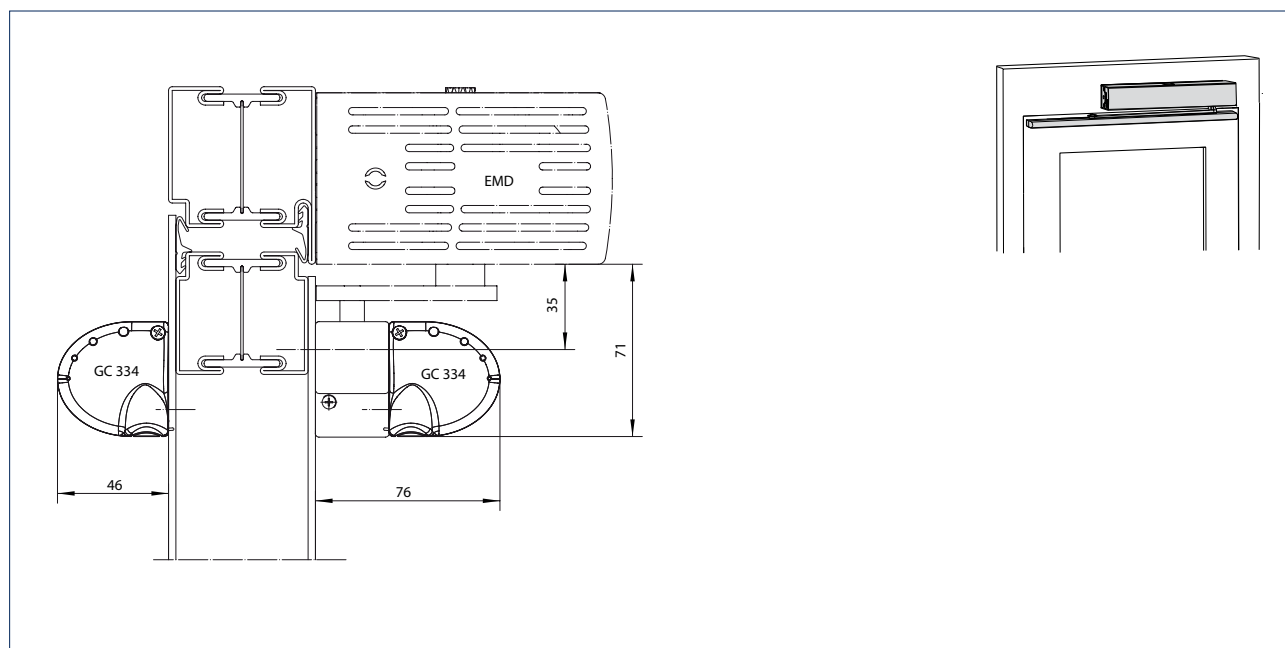


**EMD and GC GR (GC 334) transom installation with guide on the hinge side**

Drawing no. 70106-ep34

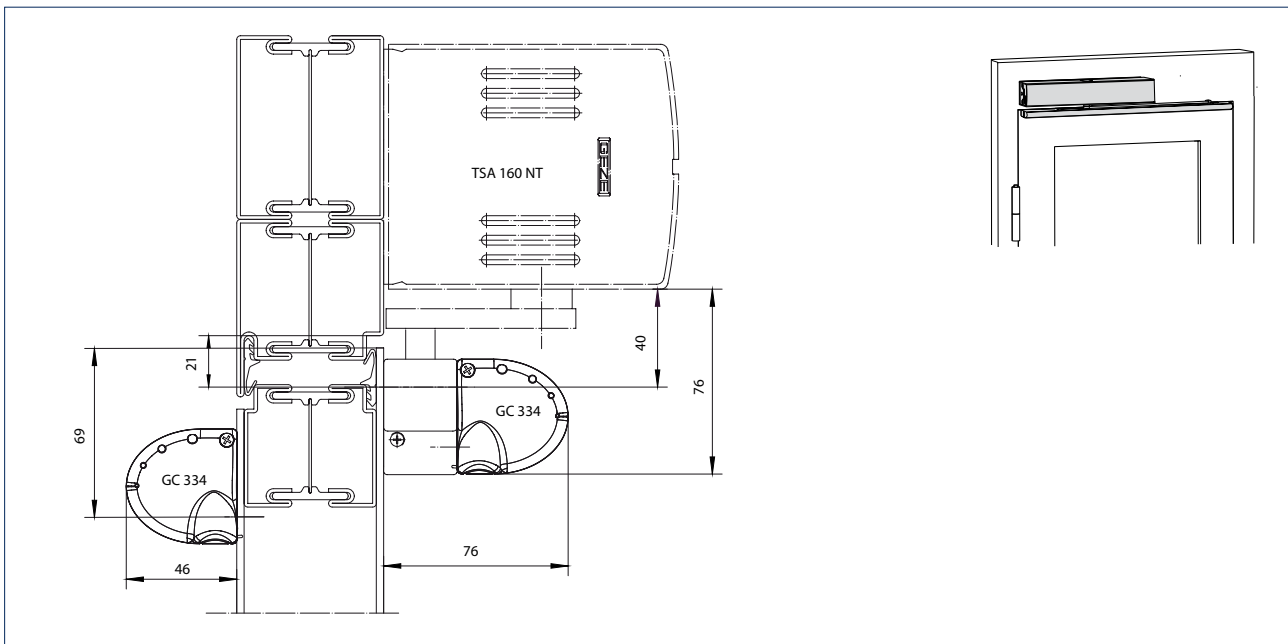
**EMD and GC GR (GC 334) transom installation with guide rail on the opposition hinge side**

Drawing no. 70106-ep34



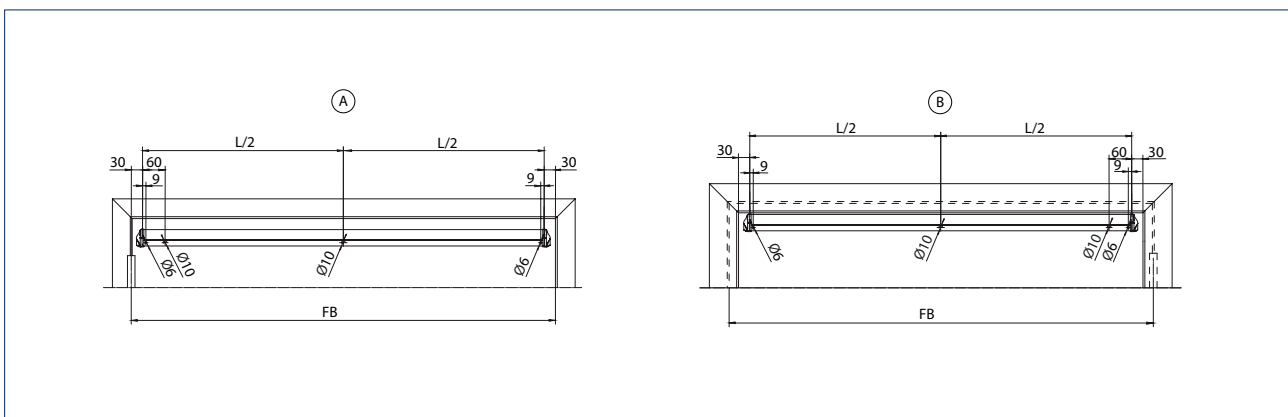
**TSA 160 NT and GC GR (GC 334) transom installation with guide rail on the hinge side**

Drawing no. 70106-ep34

**GC GR (GC 334) 1100 mm, single leaf**

Drawing no. 70106-ep34

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



- A = Hinge side
- B = Opposition hinge side
- FB = Leaf width
- 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.

#### Note

GEZE service tools are available for the Slimdrive EMD range of drives.



GEZEconnects



Service terminal ST 220



## References



GEZE TSA 160 NT, BMW World, Munich, Germany



GEZE Slimdrive EMD F-IS, Olympic Hall, Coubertin, Munich, Germany

# POTENTIAL APPLICATIONS OF GEZE PRODUCTS

You will find more product information in the relevant brochures, see ID numbers.

## Door technology

|    |  |
|----|--|
| 01 | Overhead door closers<br>ID 091593, ID 091594                                  |
| 02 | Hold-open systems<br>ID 091593, ID 091594                                      |
| 03 | Integrated door closers<br>ID 091609   |
| 04 | Floor springs<br>ID 091607   |
| 05 | Sliding door gear systems and linear guides<br>ID 123605, ID 008770, ID 000586 |

## Automatic door systems

|    |   |
|----|---|
| 06 | Swing doors<br>ID 144785                              |
| 07 | Sliding, telescopic and folding doors<br>ID 143639    |
| 08 | Circular and semi-circular sliding doors<br>ID 135772 |
| 09 | Revolving doors<br>ID 132050                          |
| 10 | Actuation devices and sensors<br>ID 142655            |

## Smoke and heat extraction and window technology

|    |  |
|----|--|
| 11 | Fanlight opening systems<br>ID 127787                        |
| 12 | Electric opening and locking systems<br>ID 127785, ID 127789 |
| 13 | Electrical spindle and linear drives<br>ID 127785, ID 127789 |
| 14 | Electric chain drives<br>ID 127785, ID 127789                |
| 15 | Smoke and heat extraction systems<br>ID 127785, ID 139075    |

## Safety technology

|    |   |
|----|---|
| 16 | Emergency exit systems<br>ID 132408     |
| 17 | Access control systems<br>ID 132158     |
| 18 | Panic locks<br>ID 132848                |
| 19 | Electric strikes<br>ID 148666           |
| 20 | Building management system<br>ID 132408 |

## Glass systems

|    |   |
|----|---|
| 21 | Manual sliding wall systems (MSW)<br>ID 104377      |
| 22 | Integrated all-glass systems (IGG)<br>ID 104366     |
| 23 | GEZE Patch fittings mono glass systems<br>ID 122521 |



# POTENTIAL APPLICATIONS OF GEZE PRODUCTS



## 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 protection 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 protection, 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 in to 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.

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