dormakaba

ED 100
ED 250

Swing door
operators

Swing door operator in modular design

With their ED 100 and ED 250, dormakaba offers electromechanical swing door operators for various fields of application. Simply select the suitable version according to your prevailing door-leaf width and weight: While the ED 100 is suitable for doors with a weight of up to 160 kg or a door width of 1,100 mm, the ED 250 is designed for doors with a width of 1,600 mm or a door weight of 400 kg.

Apart from the extended cover, dormakaba also provides an easy-to-install integrated door coordinator. With the aid of the dormakaba Upgrade Cards, the system's functional range may be adapted to various door versions. The large scope of integrated functions furthermore ensures that the majority of possible applications may easily be realized.

Benefits

- Flexible configuration: Customers only pay for the functions they actually require.
- Cheap transport and easy mounting thanks to the system's reduced weight.
- Low-noise application due to multi-stage gear.
- Elegant visual appearance: dormakaba Contur design provides a operator height of only 70 mm.
- Various functions as standard.
- **New:** with integrated smoke detector

Fields of application

- For single- or double-leaf swing doors. Choose between the ED 100 and the ED 250 in accordance with your prevailing door-leaf width and weight.
- The pull-version with slide channel and the push-version with standard arm are suitable for application at fire and smoke doors.
- Thanks to its low- and full-energy version, the system is suitable to automate both rarely and heavily frequented internal and external doors.
- High torque for full-automatic swing doors with radar motion control.
- For interior and exterior doors.

Application: ED 100/ED 250

Door weight (kg)
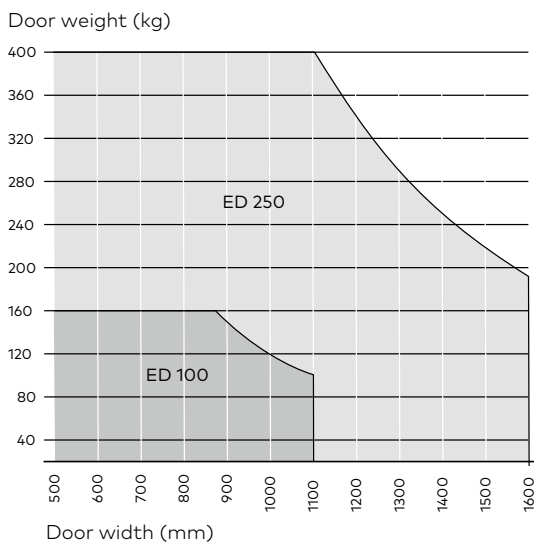
Door width (mm)

The operators ED 100 and ED 250 are suitable for most swing doors provided that the combination of door width and door weight lies within the defined functional area.

This diagram allows you to determine the maximum values for the door width or door weight or to determine the suitable operator for existing doors. All values apply to an ideal door. The achievable speed is to be lowered for heavy doors in order to ensure the safety of people.

Additional door components such as door hinges, seals, locks or other mechanical components may restrict the functional area.

The specifications are valid up to a lintel depth of 300 mm; at a depth > 301 mm the door panel weight of the ED 250 is reduced to 160 kg irrespective of the door width.

Our Sustainability Commitment

We are committed to foster a sustainable development a long our entire value chain in line with our economic, environmental and social responsibilities to ward currentand future generations.

Sustainability at product level is an important, future-oriented approach in the field of construction. In order to give quantified disclosures of a product's environmental impacts through its entire life cycle, dormakaba provides Environmental Product Declarations (EPD), based on holistic life cycle assessments.

The full EPD is available for download at www.dormakaba.com.

Required operating conditions

Ambient temperature	–15 to +50 °C
Only suitable for dry environments	Relative humidity max. 93 % (non condensing)
Power supply	230 V AC 50 Hz +/– 10 %
Class of protection	IP 20

General specifications

Dimensions (W x H x D)	685 x 70 x 130 mm
Dimensions with integrated smoke detector (W x H x D)	735 x 70 x 130 mm
Min. clearance between hinges (double systems)	1,400 mm
Min. clearance between hinges for ESR (double systems)	1,450 mm
Weight of single version	12 kg
Power supply for external accessories	24 V DC +/– 10 %, 1.5 A
Opening angle	Max. 110°
Manufactured to ISO 9001	yes
Environmental product declaration in accordance with ISO 14025 Programme holder: Institute Construction and Environment e.V. Declaration number: EPD-DOR-2012211-E	yes

Integrated functions

Hold-open time		30 s, 180 s (optional)
Blocking behavior		Reversing/Door closer function
Locking feedback contact		Motor lock
Wind load control		up to 150 N
Voltage-independent braking circuit		Adjustable via potentiometer
Electronic latching action pulse		Force adjustable
LED status indicator	green	Operating voltage indicator
	red	Malfunction indicator
	yellow	Service interval indicator
Integrated program switch		OFF
		AUTOMATIC
		PERMANENT OPEN
		EXIT ONLY (only for single-leaf systems)
User interface with information display		Status indicator and parameterisation
Slot for dormakaba Upgrade Cards		Extension of functional range
Update interface		Firmware update
TMP – Temperature Management Program		Temperature-related overload protection
IDC – Initial Drive Control		Driving phase optimisation
Cycle counter		0 – 1,000,000 (reasonably subdivided)
Power Assist function		Servo-supported when opened manually
Push & Go function		Door opens when moved manually by 4°

Inputs, terminals max. 1.5 mm^2

Potential-free activator	Inside and outside (NO contact)
Energized activator	8 – 24 V DC/AC + 10 %
Night-/Bank (key switch)	NO contact/NC contact
Safety sensor	Hinge side and opposite hinge side (NC contact)
Test signal for safety sensor	Hinge side and opposite hinge side
Emergency-Off pushbutton/ Lock switch	NC contact/NO contact

Outputs, terminals max. 1.5 mm^2

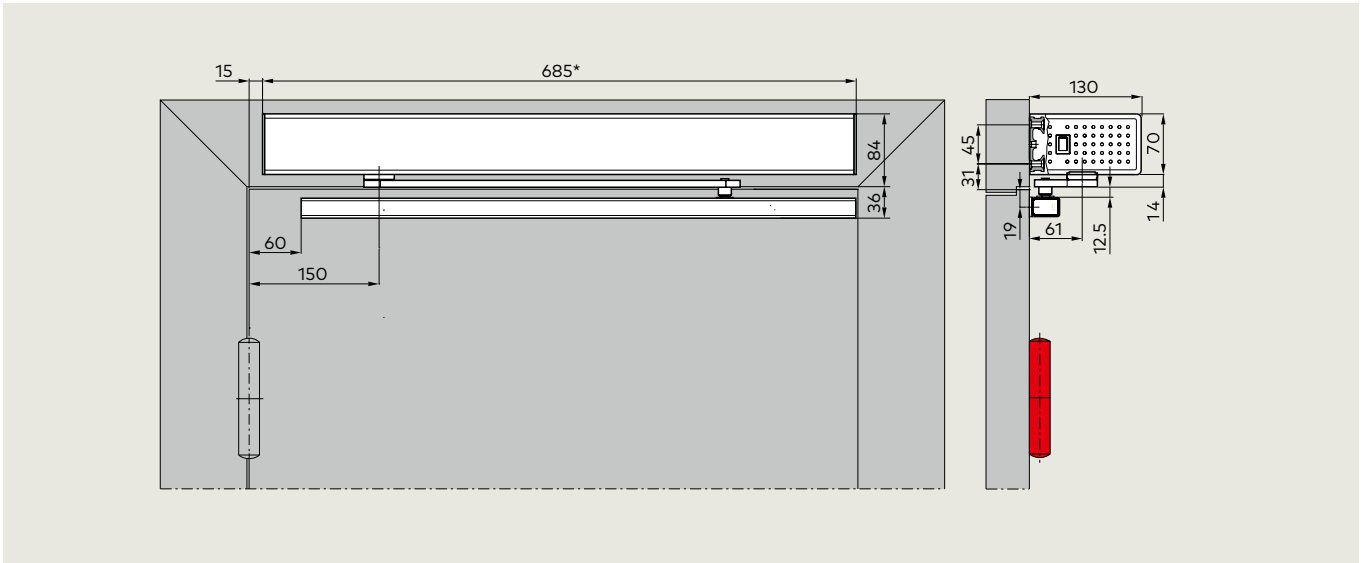|	
Potential-free door status contact, alternatively	Door closed
	Door open
	Malfunction

ED 100

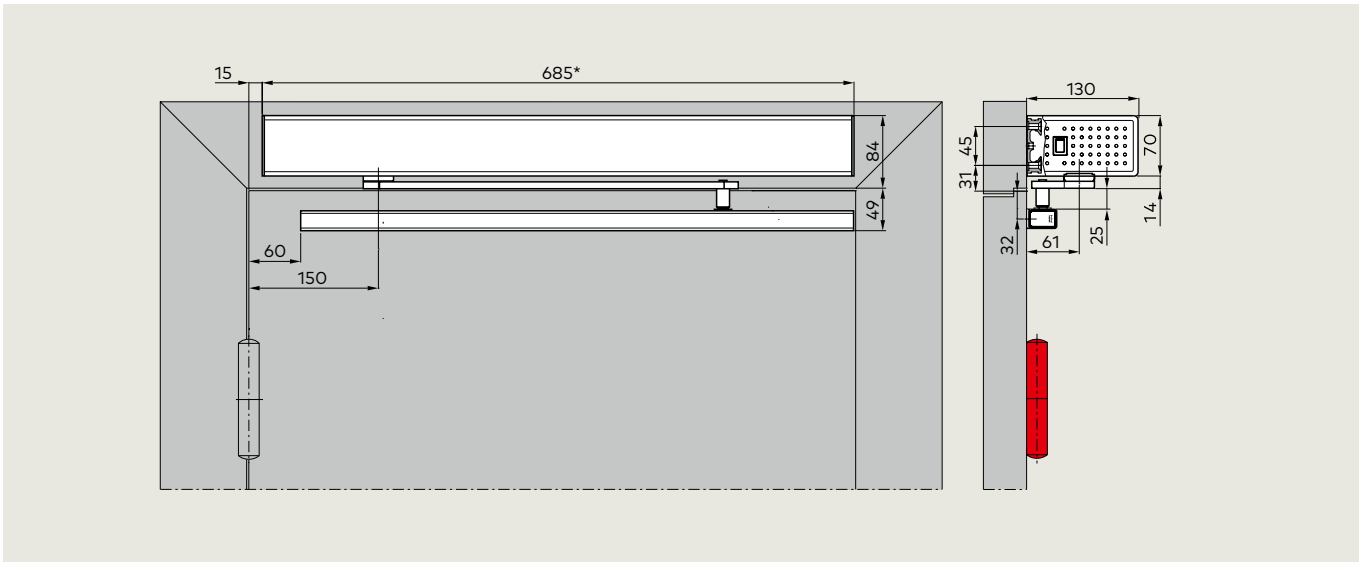|	
Max. power consumption	120 Watts
Closing force EN 1154	EN 2 – 4, adjustable
Max. door-leaf weight for reveal depths of up to 300 mm	160 kg depending on the door width
Door-leaf width	700 – 1,100 mm
Opening speed 0 – 90°	4* – 12 seconds
Closing speed 90 – 0°	5* – 21 seconds
Axle extension	20/30/60 mm
Reveal depth for slide channel	+/– 30 mm
Reveal depth for slide channel CPD	30 – 60 mm
Reveal depth for standard arm	0 – 300 mm

ED 250

Max. power consumption	240 Watts
Closing force	EN 4 – 6, adjustable
Max. door-leaf weight for reveal depths of up to 300 mm	400 kg depending on the door width
Max. door-leaf weight for reveal depths from 301 mm to 500 mm	160 kg
Door-leaf width	700 – 1,600 mm
Door-leaf width for fire protection doors	700 – 1,400 mm
Opening speed 0 – 90°	3* – 12 seconds
Closing speed 90 – 0°	4* – 21 seconds
Axle extension	20/30/60/90 mm
Reveal depth for slide channel	+/– 30 mm
Reveal depth for slide channel CPD	30 – 60 mm
Reveal depth for standard arm	0 – 500 mm
For reveal depths standard arm for fire protection	0 – 350 mm

* Depending on the door leaf weight, it is automatically limited in the low-energy operating mode according to EN 16005 or DIN 18650, BS 7036-4 and ANSI 156.19. Max. speeds are achieved only in the full-energy mode, with a low door panel weight and a taught opening angle of at least 95°.

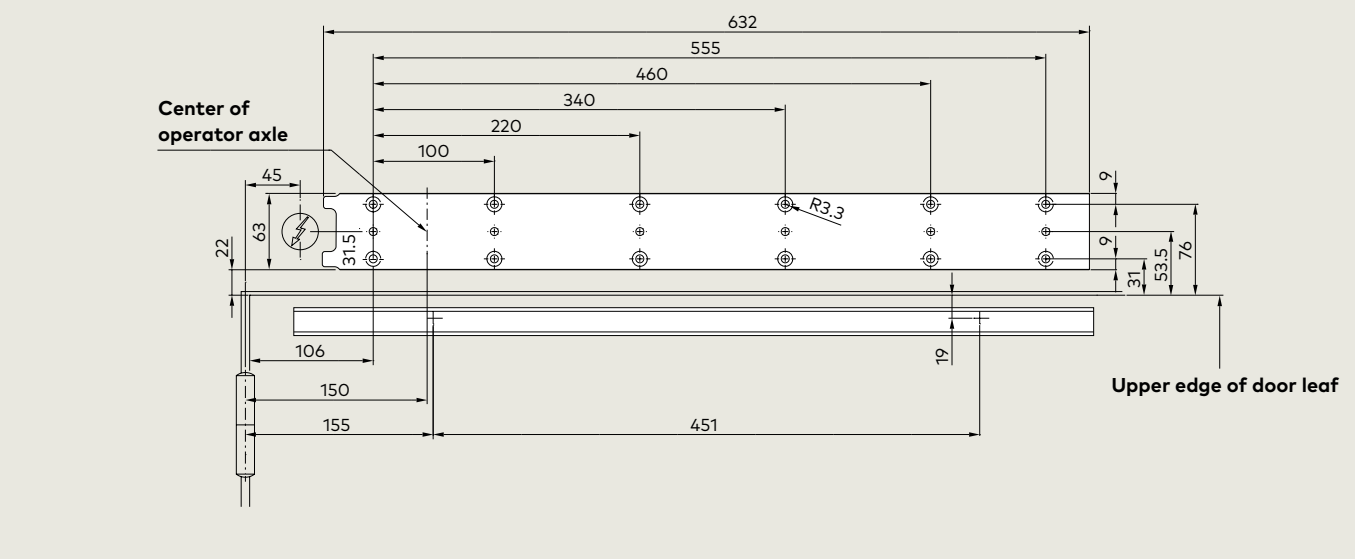**View: BASIC cover, pull-version, 12.5 mm pivot pin, standard axle extension**

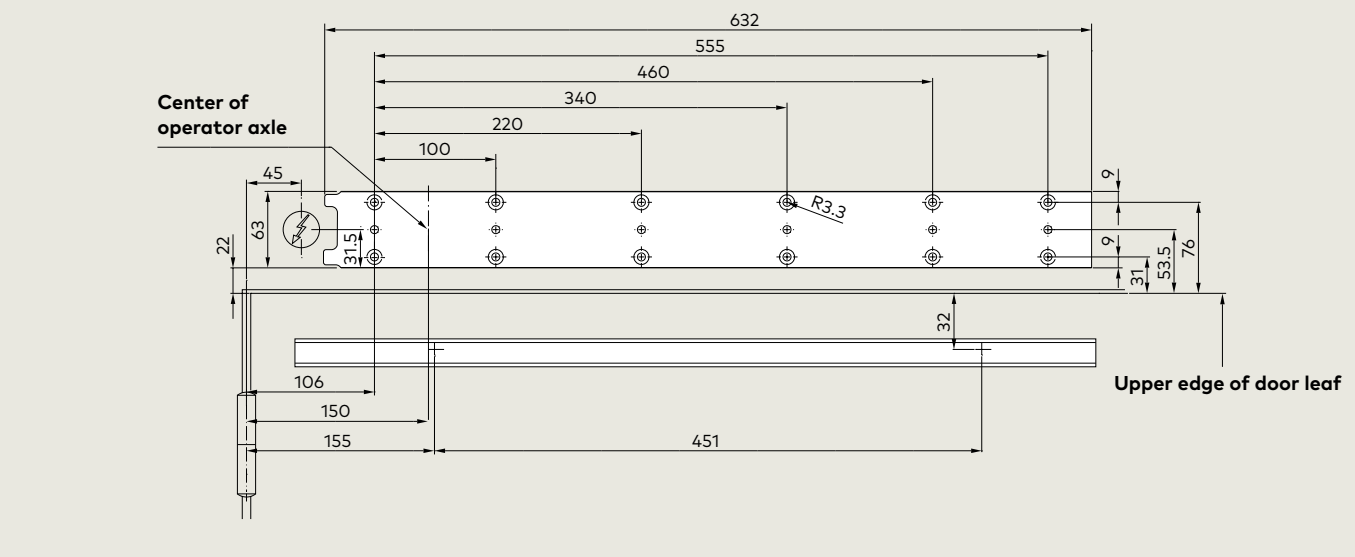**View: BASIC cover, pull-version, 25 mm pivot pin, standard axle extension**

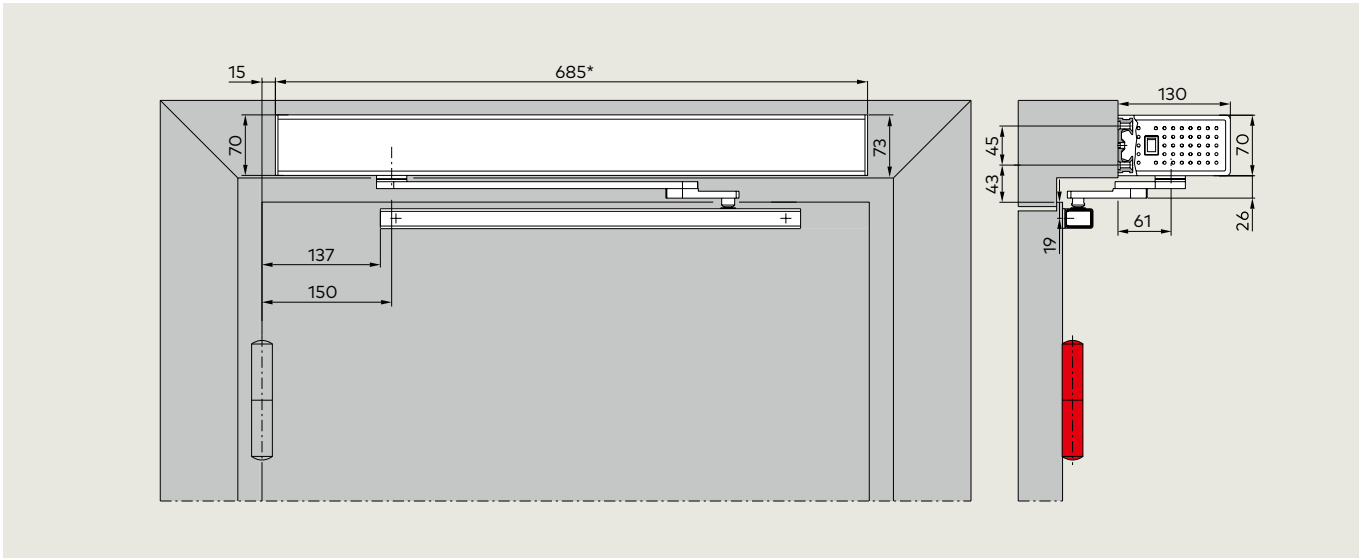*Dimension for cover BASIC RM: 735 mm

Drilling template: BASIC/BASIC RM cover, pull-version, 12.5 mm pivot pin, standard axle extension
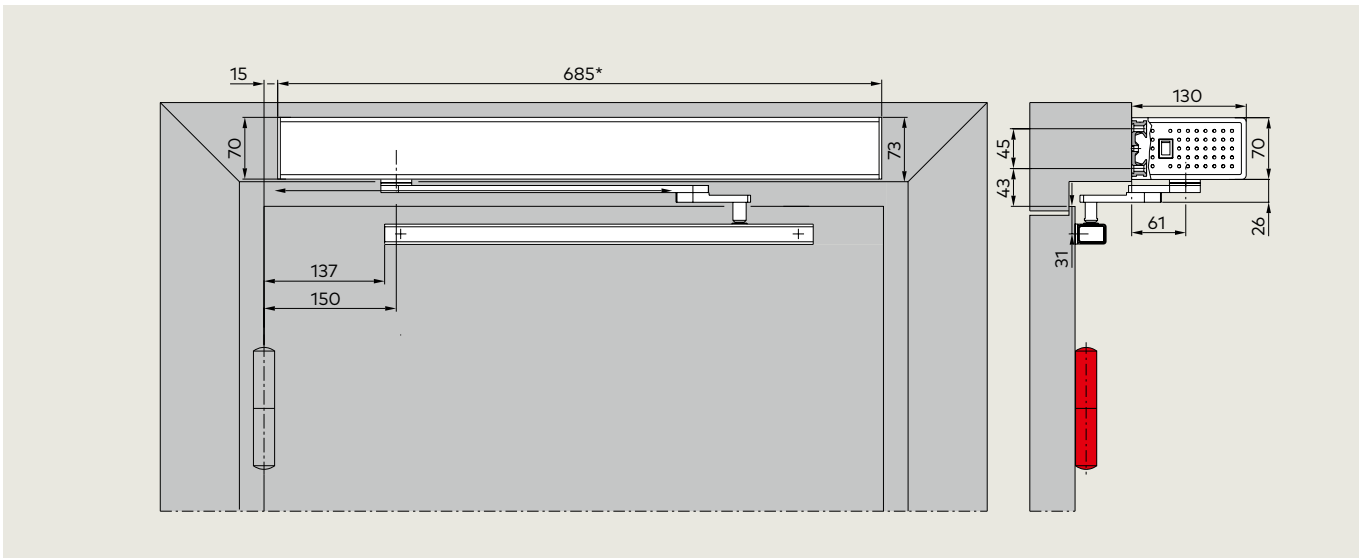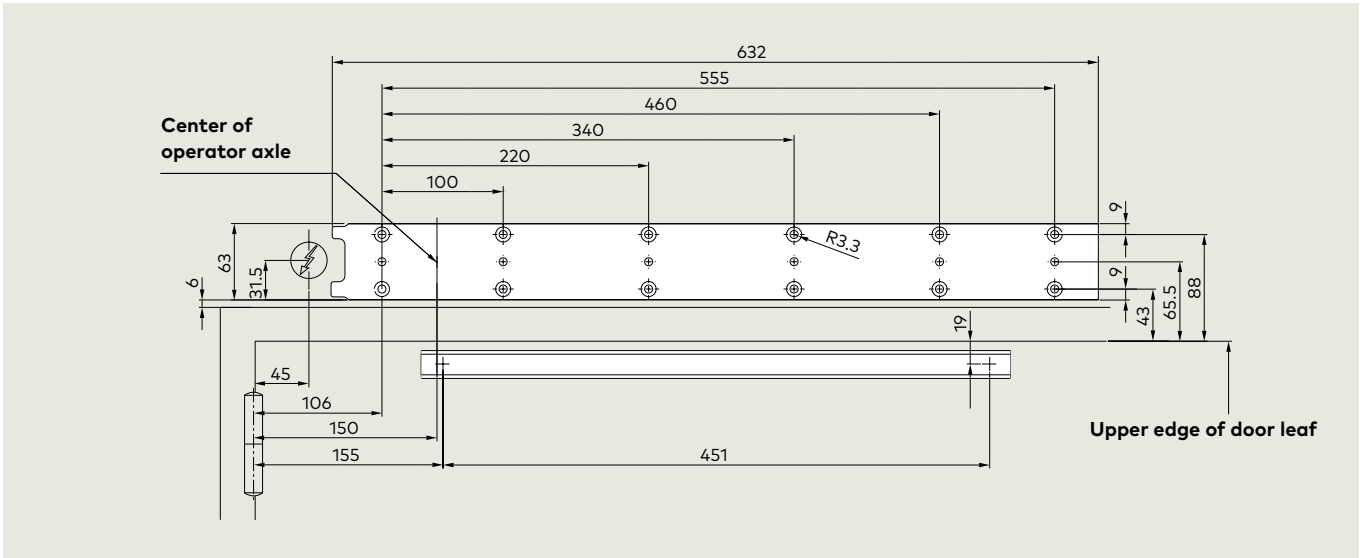
Center of operator axle

Upper edge of door leaf

Drilling template: BASIC/BASIC RM cover, pull-version, 25 mm pivot pin, standard axle extension

Center of operator axle

Upper edge of door leaf

View: BASIC cover, pull-version, CPD arm, 12.5 mm pivot pin, standard axle extension

View: BASIC cover, pull-version, CPD arm, 25 mm pivot pin, standard axle extension
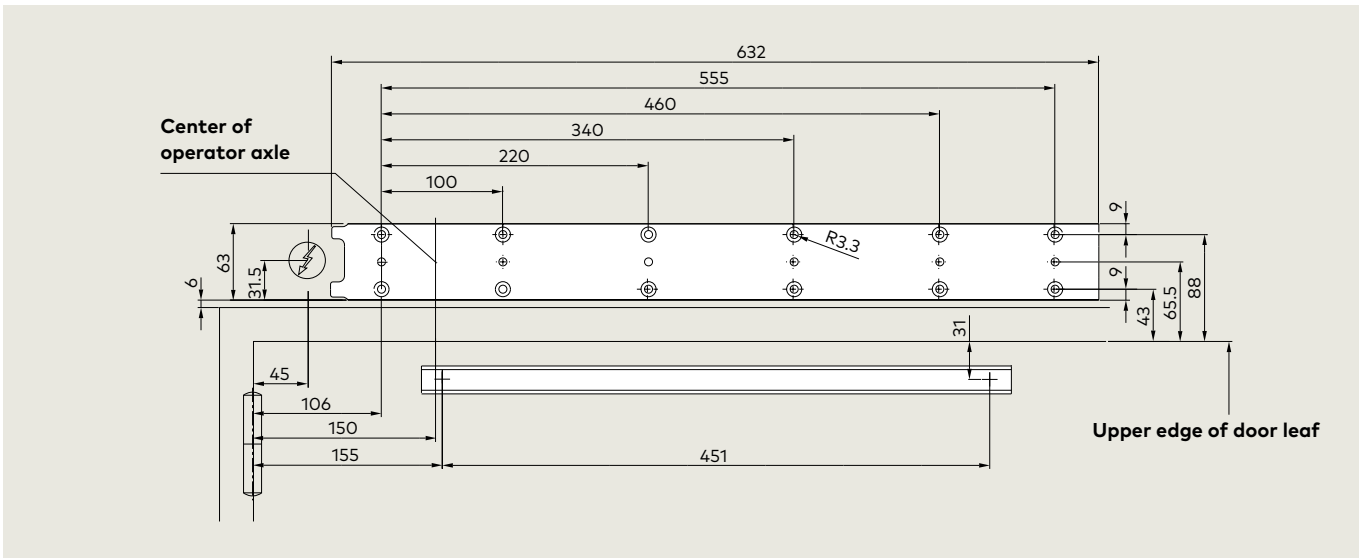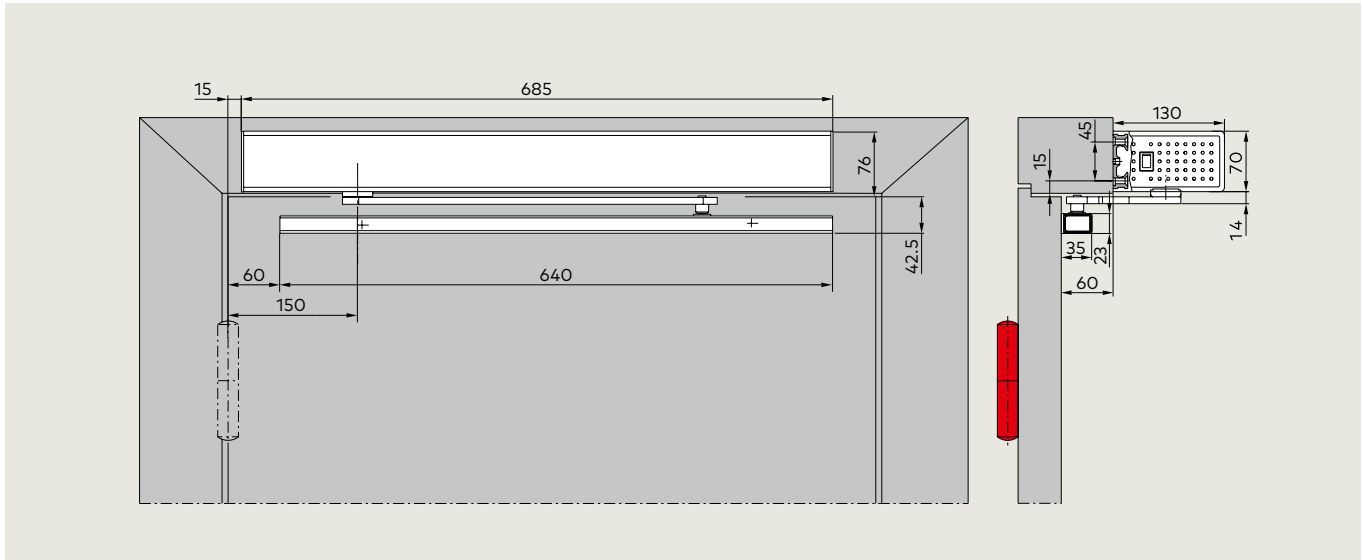

*Dimension for cover BASIC RM: 735 mm

Drilling template: BASIC/BASIC RM cover, pull-version, CPD arm, 12.5 mm pivot pin, standard axle extension

Drilling template: BASIC/BASIC RM cover, pull-version, CPD arm, 25 mm pivot pin, standard axle extension
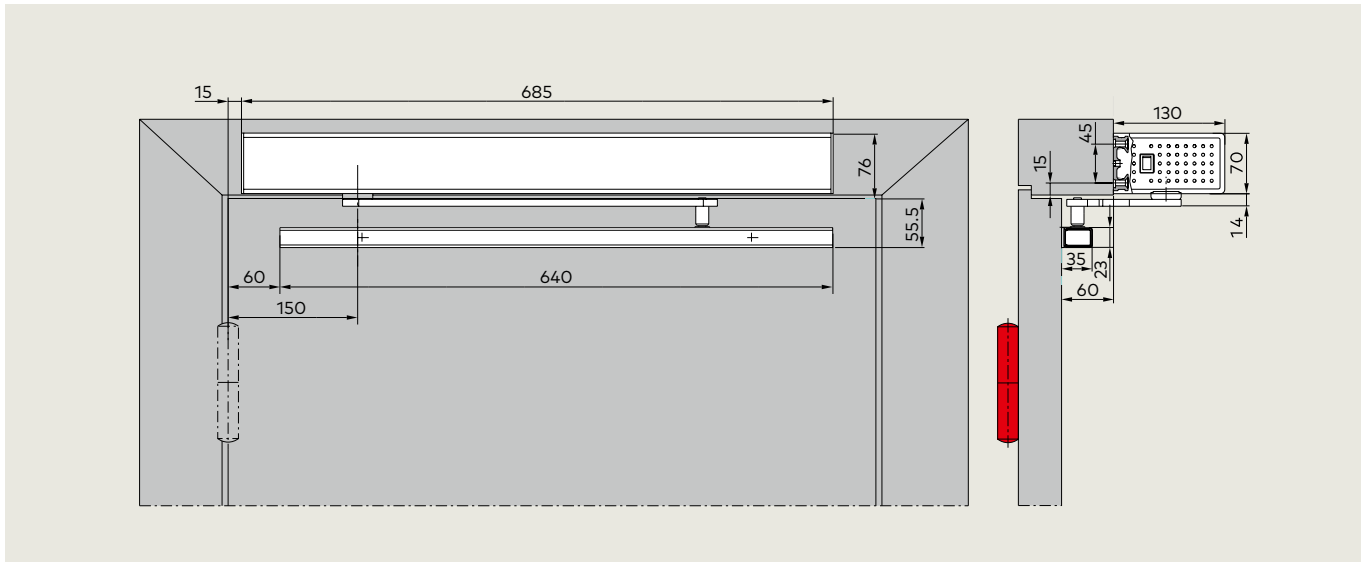
View: BASIC cover, push-version, 12.5 mm pivot pin, standard axle extension
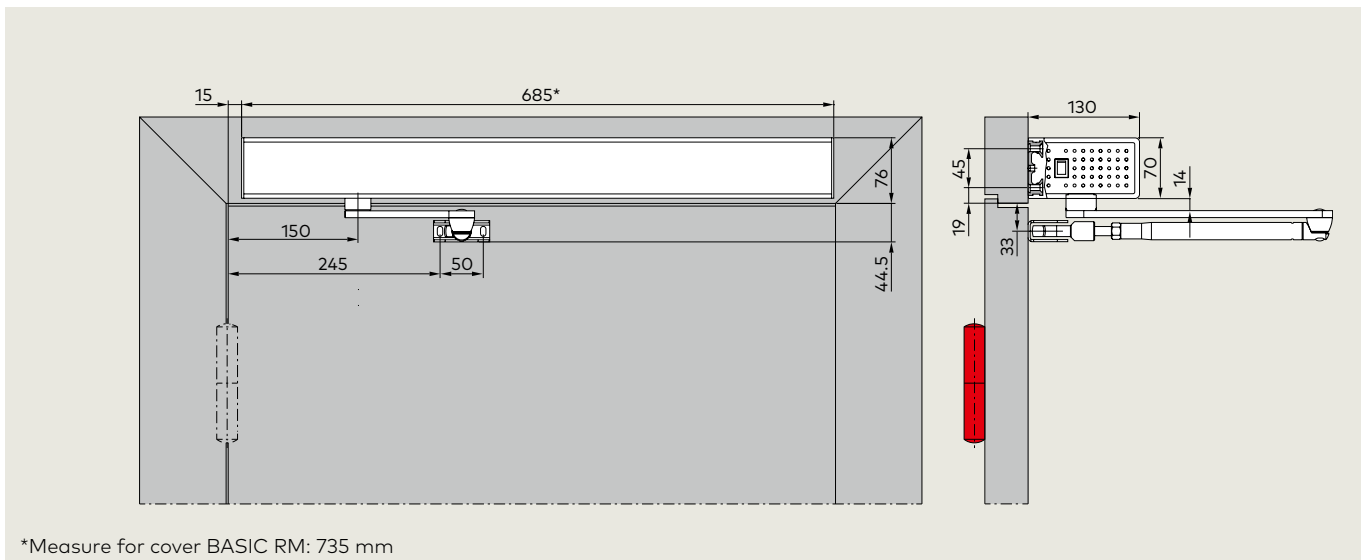

The push-version with slide channel is not suitable for fire doors

View: BASIC cover, push-version, 25 mm pivot pin, standard axle extension
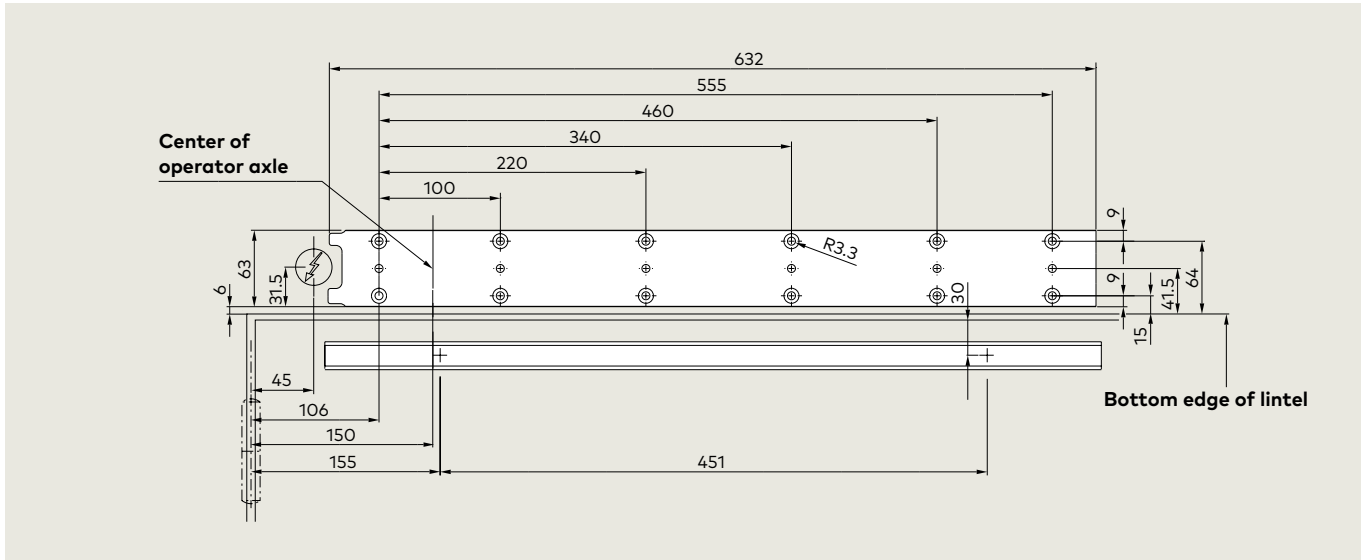

The push-version with slide channel is not suitable for fire doors

View: BASIC cover, push-version, standard axle extension
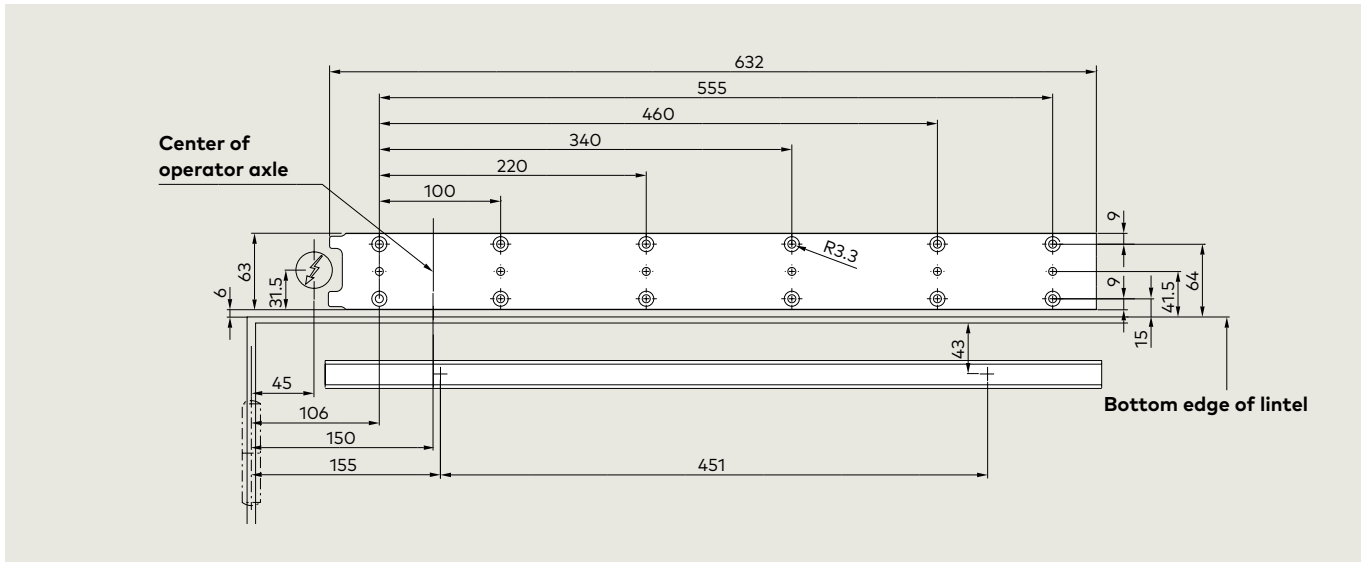

*Measure for cover BASIC RM: 735 mm

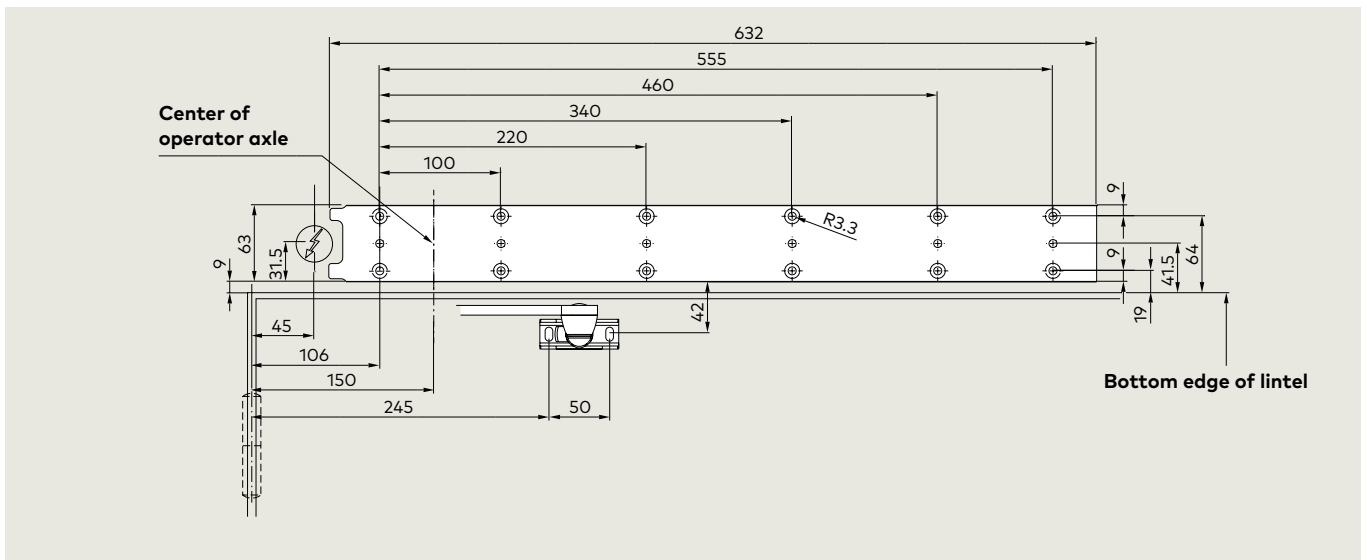**Drilling template: BASIC cover, push-version, 12.5 mm pivot pin, standard axle extension**

The push-version with slide channel is not suitable for fire doors

Drilling template: BASIC cover, push-version, 25 mm pivot pin, standard axle extension
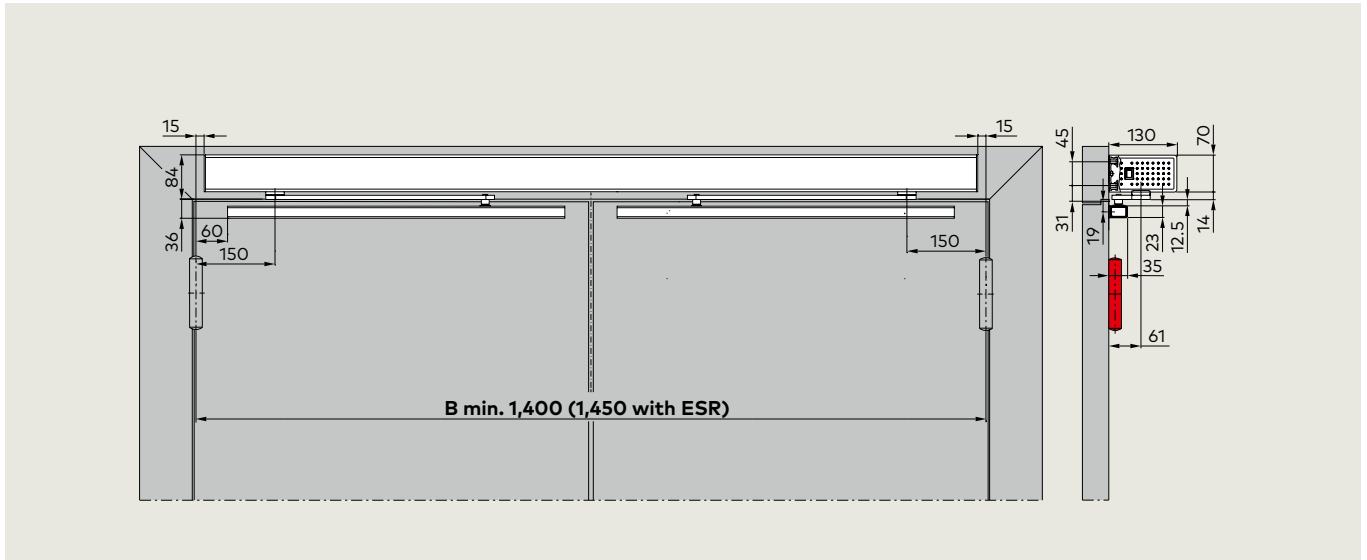

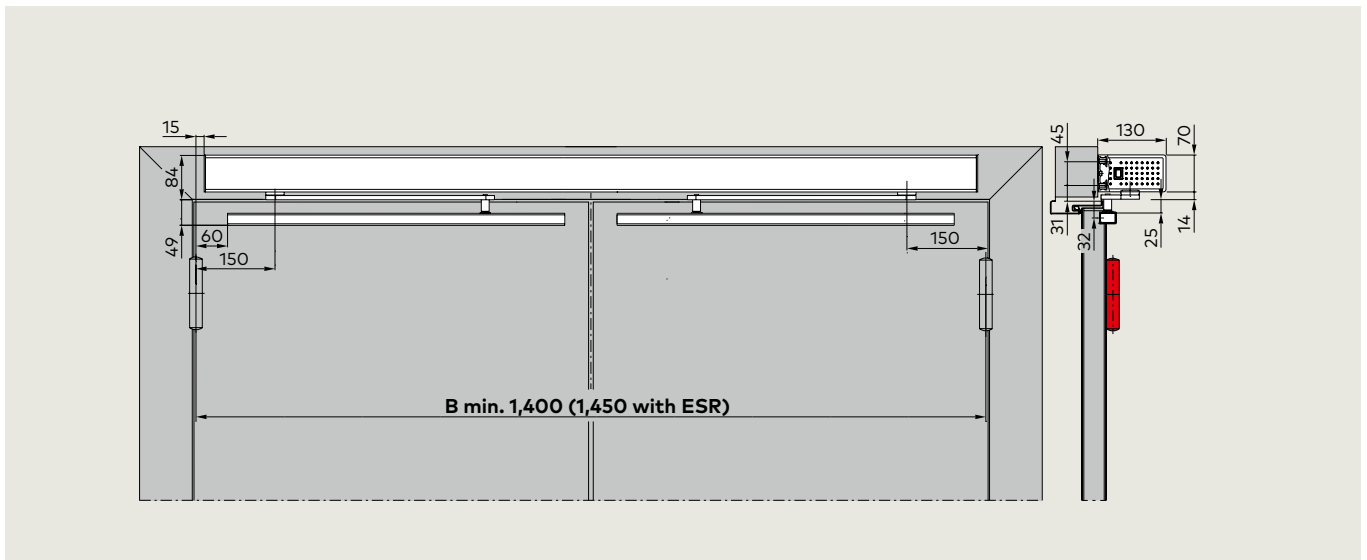The push-version with slide channel is not suitable for fire doors

Drilling template: BASIC/BASIC RM cover, push-version, standard axle extension
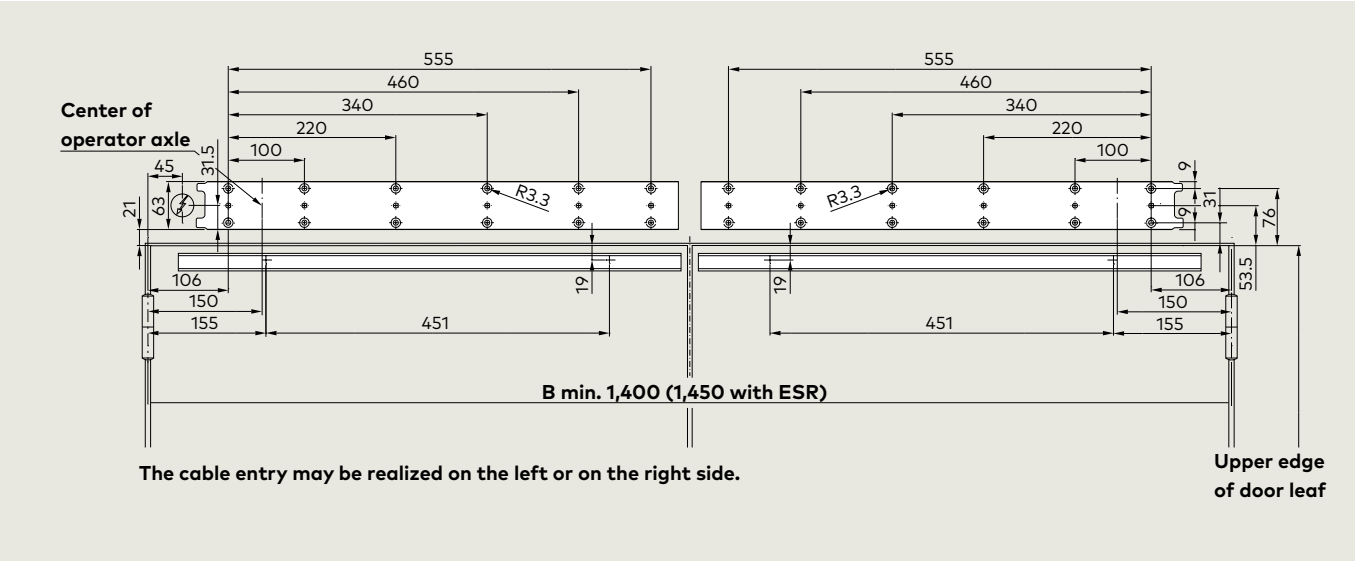
View: PROFESSIONAL cover, pull-version, 12.5 mm pivot pin, standard axle extension

B min. 1,400 (1,450 with ESR)

View: PROFESSIONAL cover, pull-version, 25 mm pivot pin, standard axle extension

B min. 1,400 (1,450 with ESR)

Drilling template: PROFESSIONAL cover, pull-version, 12.5 mm pivot pin, standard axle extension

555
460
340
220
100

Center of operator axle

45
31.5
21
63
R3.3
R3.3

9
31
76

106
150
155
19
19
451
53.5
106
150
155

B min. 1,400 (1,450 with ESR)

The cable entry may be realized on the left or on the right side.

Upper edge of door leaf

Drilling template: PROFESSIONAL cover, pull-version, 25 mm pivot pin, standard axle extension

555
460
340
220
100

Center of operator axle

45
31.5
21
63
R3.3
R3.3

9
31
76

106
150
155
32
32
451
53.5
106
150
155

B min. 1,400 (1,450 with ESR)

The cable entry may be realized on the left or on the right side.

Upper edge of door leaf

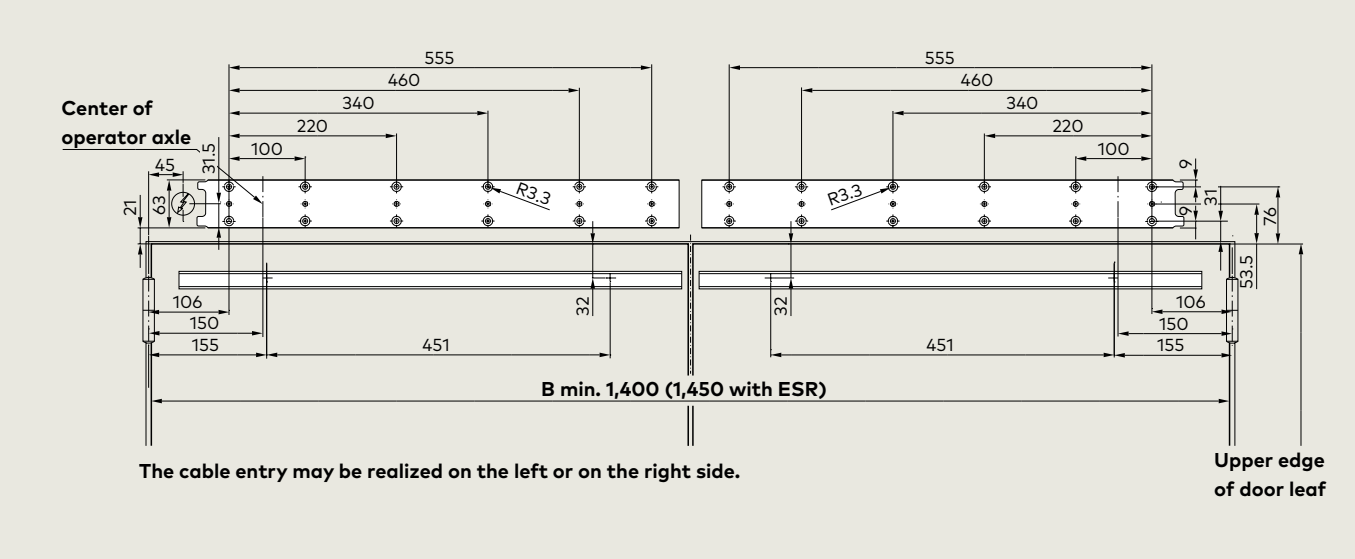**View: PROFESSIONAL cover, push-version, CPD arm, 12.5 mm pivot pin, standard axle extension**

View: PROFESSIONAL cover, push-version, CPD arm, 25 mm pivot pin, standard axle extension
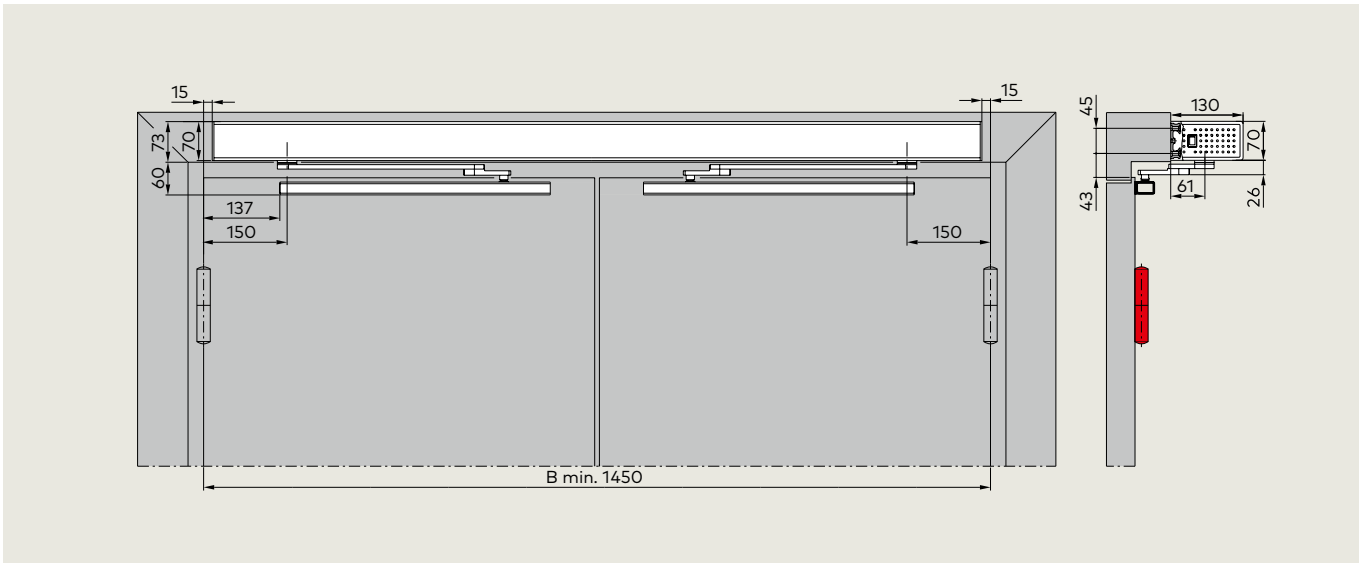
Drilling template: PROFESSIONAL cover, push-version, CPD arm, 12.5 mm pivot pin, standard axle extension
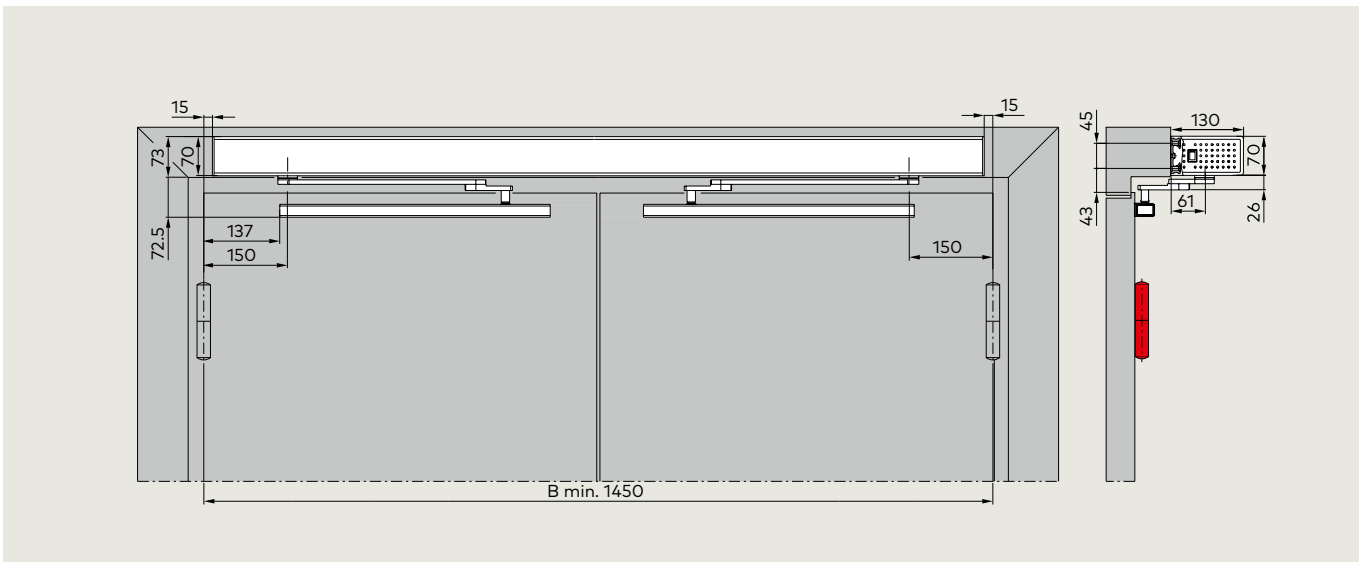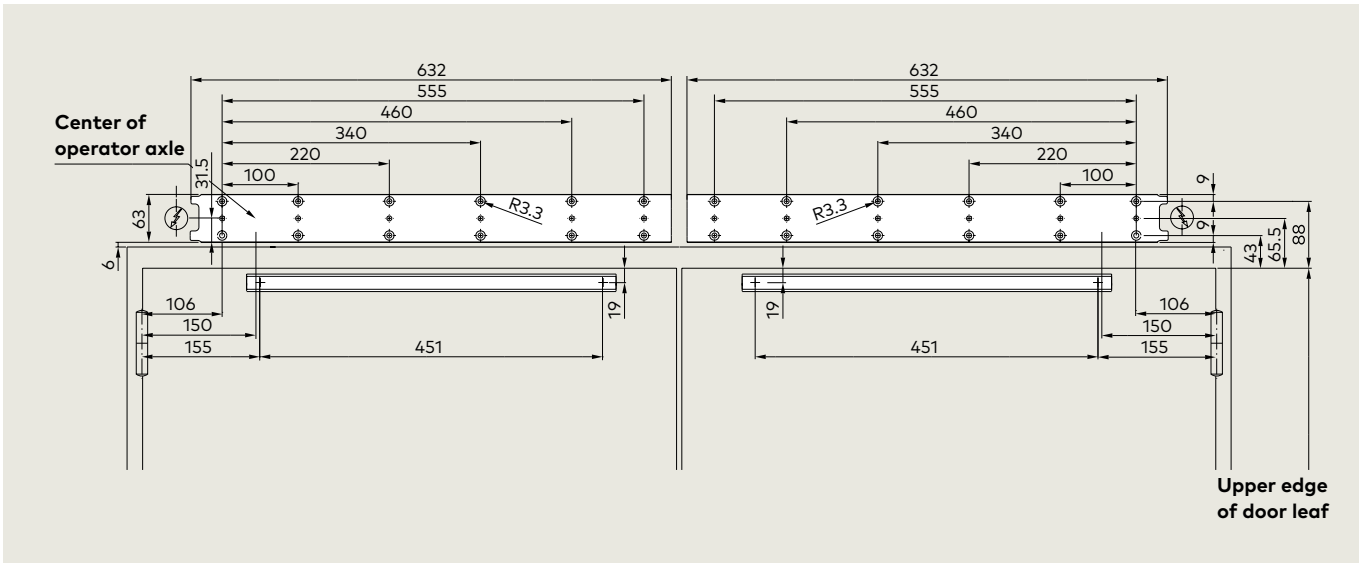

Drilling template: PROFESSIONAL cover, push-version, CPD arm, 25 mm pivot pin, standard axle extension

View: PROFESSIONAL cover, push-version, 12.5 mm pivot pin, standard axle extension

The push-version with slide channel is not suitable for smoke control doors and fire doors

View: PROFESSIONAL cover, push-version, 25 mm pivot pin, standard axle extension

The push-version with slide channel is not suitable for smoke control doors and fire doors

View: PROFESSIONAL cover, push-version, standard axle extension

B min. 1,400 (1,450 with ESR)

Drilling template: PROFESSIONAL cover, push-version, 12.5 mm pivot pin, standard axle extension

Center of operator axle

632
555
460
340
220
100
31.5
63
R3.3
6
45
106
150
155
30
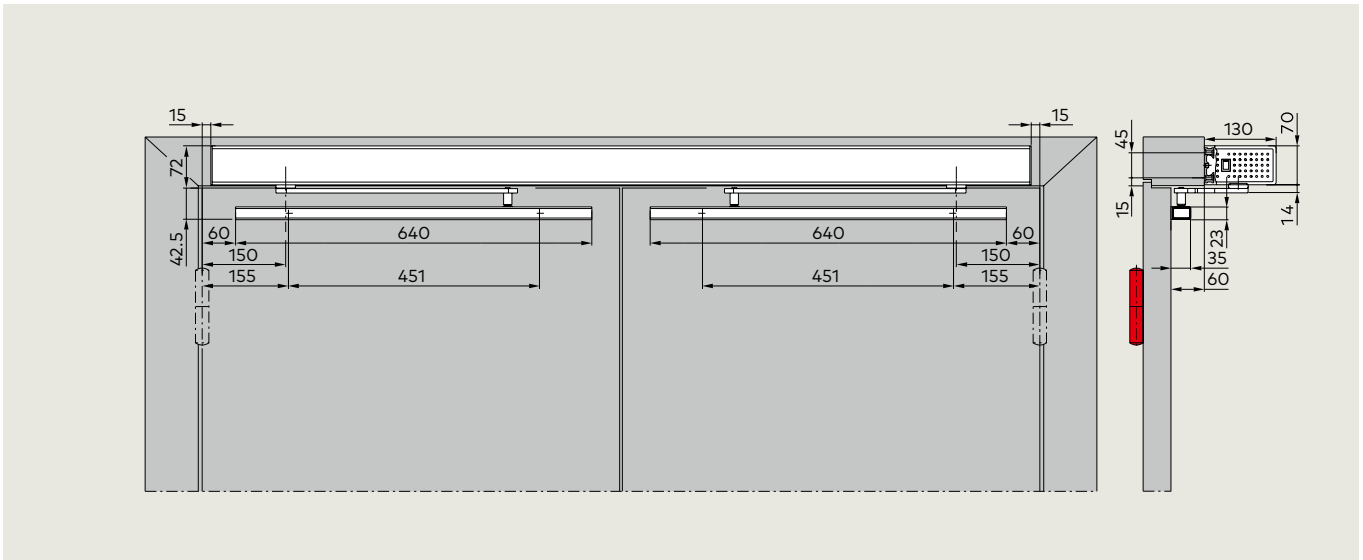451

Bottom edge of lintel

The push-version with slide channel is not suitable for fire doors

Drilling template: PROFESSIONAL cover, push-version, 25 mm pivot pin, standard axle extension

Center of operator axle

632
555
460
340
220
100
31.5
63
R3.3
6
45
106
150
155
43
451

Bottom edge of lintel
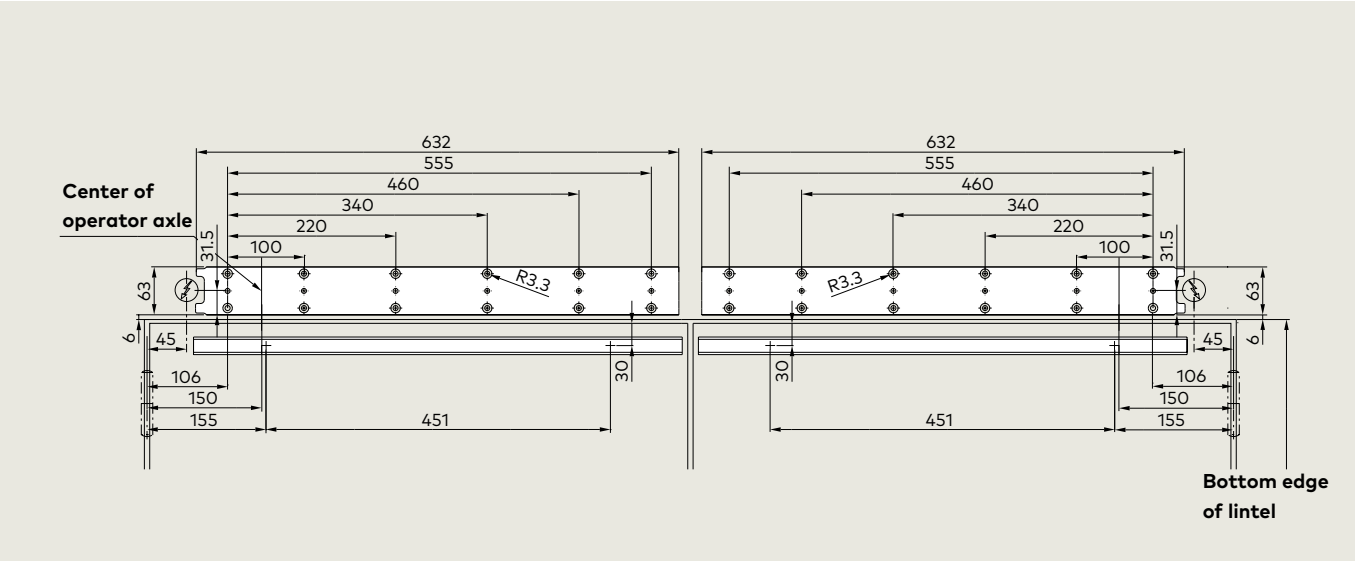
The push-version with slide channel is not suitable for fire doors

Drilling template: PROFESSIONAL cover, push-version, standard axle extension

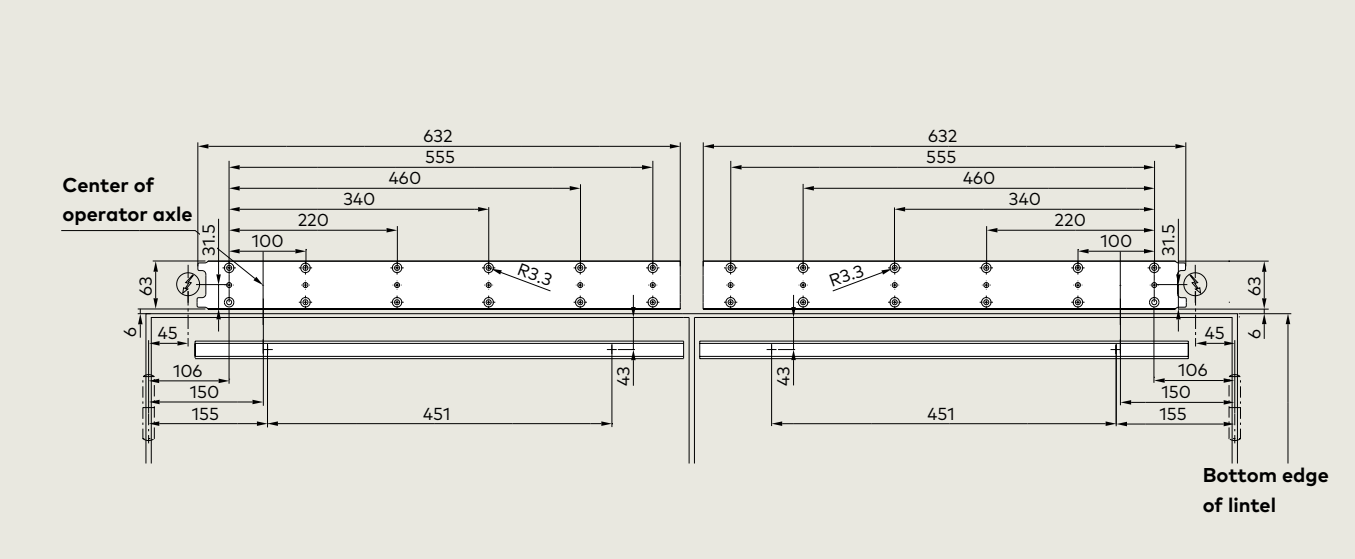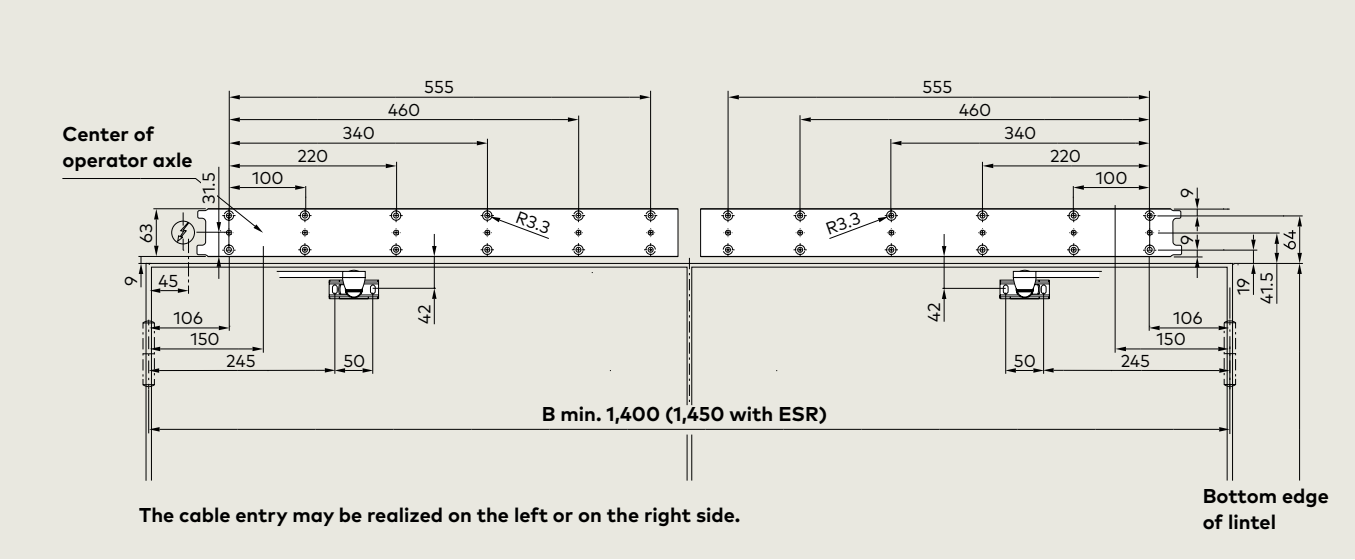Center of operator axle

555
460
340
220
100
31.5
63
R3.3
9
45
106
150
245
42
50
9
9
64
19
41.5

B min. 1,400 (1,450 with ESR)

The cable entry may be realized on the left or on the right side.

Bottom edge of lintel

15

System setup

The example system is equipped with all available components. It is selected in accordance with the door-leaf width and the door-leaf weight.

01 Mains connection
02 Connection unit
03 Axle connection on both sides
04 Operator system (motor/gear/spring)
05 Adjustment of closing force
06 Control unit
07 Switching power supply unit
08 Slot for dormakaba Upgrade Cards
09 User interface with information display
10 Internal program switch
11 Slide channel (set)*
12 Slide channel CPD (set)*
13 Standard arm*
14 Complete cover*
15 Cover BASIC RM
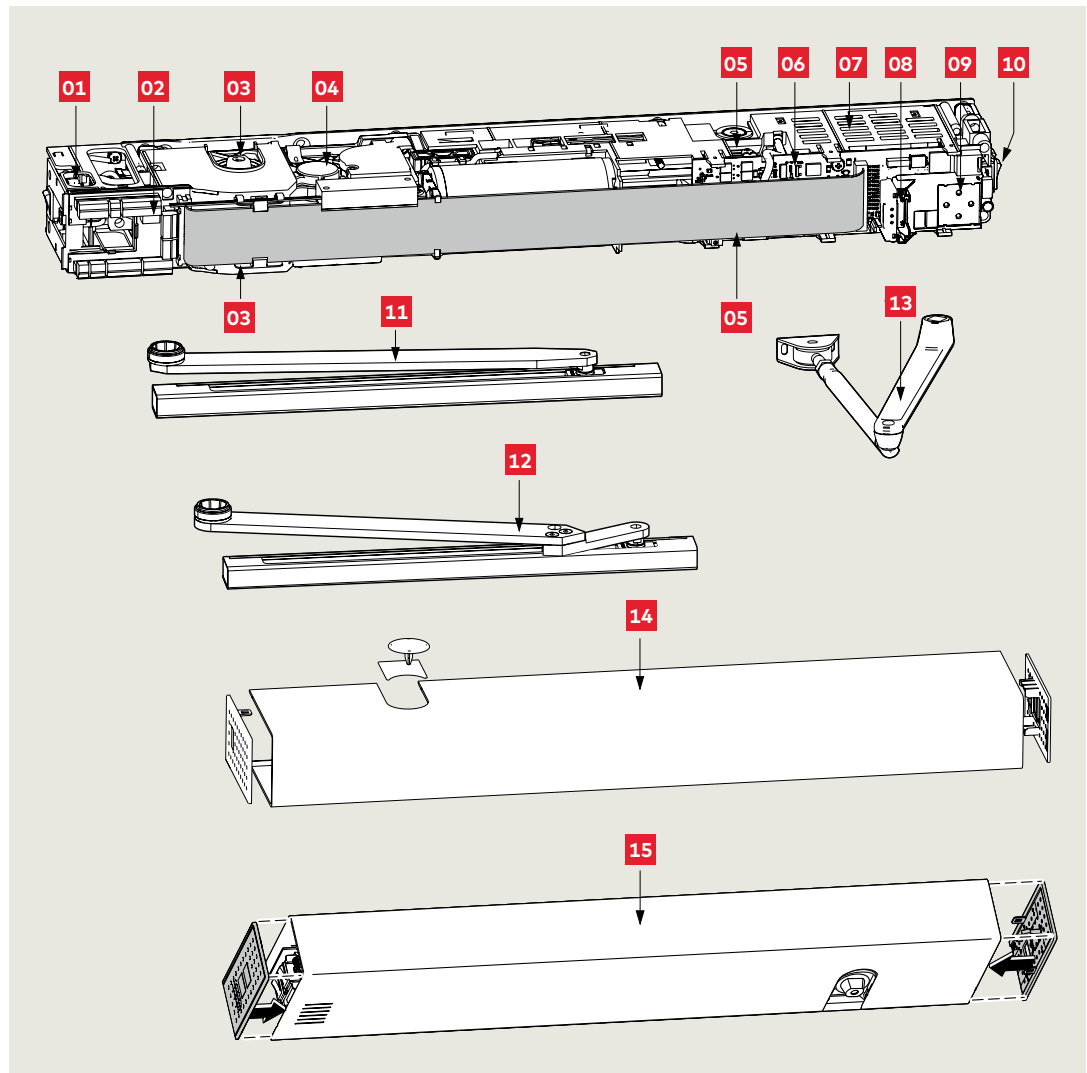
*supplied separately

System	Specification	Order No.
ED 100 swing door operator 230 V	EN 2 - 4, push-version, fire protection; EN 2 - 4, pull-version, fire protection	29222301
ED 250 swing door operator 230 V	EN 4 - 6, push-version, fire protection; EN 4 - 6	29202301
	EN 4 - 6; pull-version; fire protection	29202302
	EN 4 - 5; pull-version; fire protection	29202303
ED 250 swing door operator PA	EN 4 - 6, push-version, fire protection; EN 4 - 6, pull-version, fire protection	29202305

Partly automated double doors with ED 250 Power-Assist (PA)

In case of double doors, both door leaves are usually automated. However, it is often sufficient to have only one door leaf automated for passenger traffic. In that situation, the ED 250 PA in combination with a standard ED 100 or ED 250 will come into play and offer a cost-effective solution. The ED 250 PA is used on the inactive leaf in case of double doors. While the active leaf can open fully automatically, the inactive panel is opened only manually and functions as a door closer. Optionally, the Power Assist function allows for an easy opening. However, the integrated locking device allows you to lock both door panels to a permanent open state without the use of any additional components. The ED 250 PA is suitable for fire and smoke control doors and be combined with the ED ESR set for an ED ESR 1/2 for double doors. An upgrade card is not required for the ED 250 PA.

Opening and closing forces

Way of mounting	Lintel mounting on hinge side with slide channel (pull-version)				Lintel mounting on opposite hinge side with standard arm (push-version)/ slide channel (push-version)			
	ED 100		**ED 250**		**ED 100**		**ED 250**	
	minimum	maximum	minimum	maximum	minimum	maximum	minimum	maximum
Closing force EN 1154	EN 2	EN 4	EN 4	EN 6	EN 2	EN 4	EN 4	EN 6
Manual closing force (N)***	13	34	26	65	13	37	26	70
Closing force in AUTOMATIC mode (N)**	20	FE: 150 LE: 67	20	FE: 150 LE: 67	20	FE: 150 LE: 67	20	FE: 150 LE: 67
Manual opening force (N)	30	50	55	85	35	55	60	90
Opening force in AUTOMATIC mode (N)**	20	FE: 150 LE: 67	20	FE: 150 LE: 67	20	FE: 150 LE: 67	20	FE: 150 LE: 67
Opening force with activated Power Assist function (N)*	23	23	23	23	23	23	23	23

FE = With Full-Energy or Fire Protection Upgrade Card,   **LE** = Low-Energy standard operator without upgrade card
*   Power-Assist function is adjusted to maximum (function is activated at 0° opening width)
**   The force is activated by an automatic opening in AUTOMATIC mode.
***   By installing the push-version with slide channel, the forces are reduced by approx. 33%

Door closer mode & AUTOMATIC mode

Users may choose between two operation modes: door closer and AUTOMATIC mode. While adjusted to door closer mode (parameter Hd = 1), the system is optimized for manual operation. With its optional Power-Assist function, the door closer mode is tailored to predominantly manually-operated doors where a door closer function is desired.
The AUTOMATIC mode (parameter Hd = 0) in turn is especially suitable for mainly automatic access via motion detector or pushbutton.

In addition, the door reverses as soon as it runs into an obstruction while closing. On activation of the AUTOMATIC mode, also the wind load control is available. Although in AUTOMATIC mode, the doors are still ready for manual access. In this case we would recommend the Push & Go function.

Wind load control

ED 100 and ED 250 operators are especially suitable for applications at exterior doors that are subject to varying wind loads and for interior doors separating rooms where different pressure prevails. While the system is in AUTOMATIC mode, the wind load control monitors the driving speed and adjusts the speed correspondingly if it exceeds or falls below the adjusted value.

In conjunction with the Full-Energy Upgrade Card, the operator provides a force of up to 150 N at the main closing edge – which is then used to compensate environmental influences.
The electronic latching action is activated during the last 5° of the closing cycle in order to support the closing action.
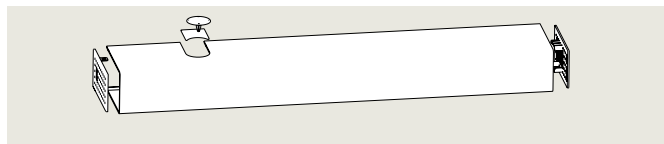
Power-Assist function

The Power-Assist function may be activated while the door is in door closer mode (parameter Hd = 1). As soon as a user opens the door by some degrees, the servofunction supports the manual opening cycle. In addition, the servo support automatically adapts to the adjusted size of the door closer. The level of servo support is adjustable in order to meet the requirements of DIN 18040, DIN Spec 1104, CEN/TR 15894, BS 8300/2100 and document "M", even up to class EN 6. The smallest adjustable opening torque amounts to 23 Nm/5 lbf – unless the hold-open device is triggered or in the event of a power failure. With the aid of the Power-Assist function, the system meets

the requirements of the European standard EN 1154 and provides barrier-free access during standard operation. However, it is not possible to use the system in conjunction with the Push & Go function or the wind load control as these functions may affect the easy manual opening of the door.
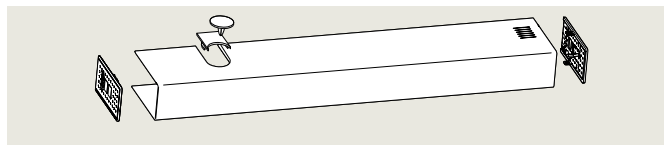
Covers

The covers are packed separately from the operator system, which makes it easy to select the respectively required cover. dormakaba provides covers for single and double systems. All covers are designed for on-site mounting. They are furthermore suitable for both the ED 100 and the ED 250 version.
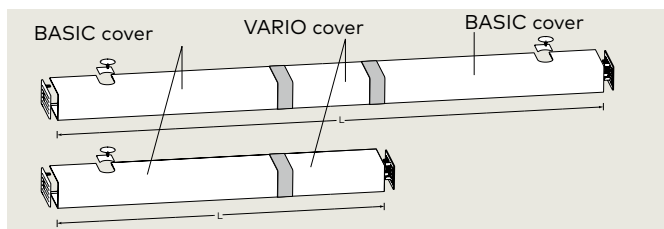
When creating double systems, the four-position internal program switch has to be replaced by a three-position switch, which means that the exit only function is only available in combination with the external program switch. Double-leaf systems are required for doors where the clearance between the hinges exceeds 1,400 mm (1,450 mm with ESR).

ED BASIC cover – Aluminum cover for single swing door systems

ED BASIC RM cover – Aluminum cover for single swing door systems

	Color	Order No.
ED BASIC cover	silver	29241001
	white	29241002
	special color	29241003
ED BASIC RM cover with integrated smoke detector RM-ED	silver	29241011
	white	29241012
	special color	29241013

ED VARIO cover

This aluminum cover is designed to create a continuous cover for double swing door systems. In addition to the VARIO cover, you will require two ED BASIC covers, which are mounted on the right and on the left of the operator system. The ED VARIO cover is designed to hide the gap between the two covers and may be sawed to the appropriate size on site. With the aid of the VARIO cover, you may also increase the length of single-leaf operator. The cover may be installed on the left or on the right side and can be sawed to the appropriate size on site. The VARIO cover is silver-colored and available in two versions.

ED VARIO RM cover with integrated smoke detector

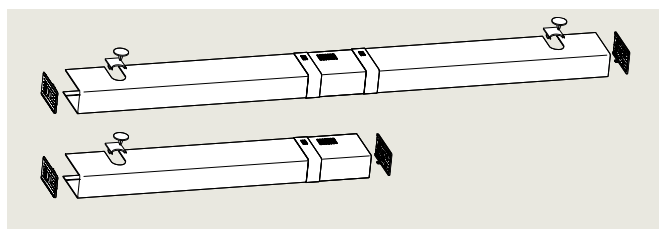| Number of door leaves	Silver	Order No.
single version		
800 mm – 1,600 mm	2,200 mm	29242001
single version with integrated smoke detector		
900 mm – 1,600 mm	2,200 mm	29242011
double version		
1,500 mm – 2,200 mm	2,200 mm	29242001
1,500 mm – 2,800 mm	2,800 mm	29242002
double version with integrated smoke detector		
1,610 mm – 2,200 mm	2,200 mm	29242011
1,610 mm – 2,800 mm	2,800 mm	29242021

ED PROFESSIONAL cover

This aluminum cover is designed to create double-leaf swing door systems. The ED PROFESSIONAL cover is a continuous and seamless cover and available in lengths from 1,400 mm (1,450 mm with ESR) to 3,200 mm. With the PROFESSIONAL cover, also single operator may be extended to a length of up to 3,000 mm towards the main closing edge.

	Color	Order No.
ED PROFESSIONAL cover	siver-colored or as special color	29243003

Arms

ED slide channel set

ED 100 and ED 250: For reveal depths +/– 30 mm

Mounting version	Color	Order No.
Pull- and push-version*	silver	29275001
	white	29275002
	special color	29275003

*The push-version is not suitable for smoke control doors and fire doors
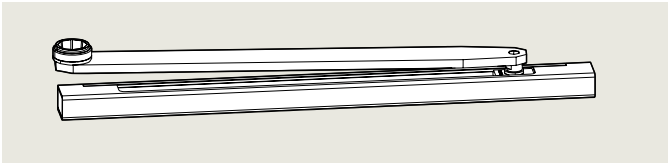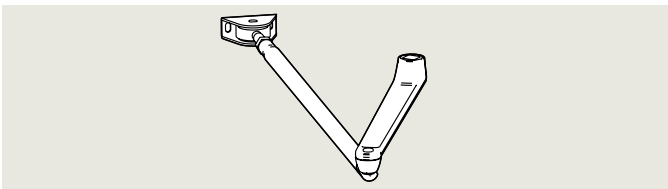
ED slide channel set CPD

ED 100 and ED 250: For reveal depths 30 - 60 mm

Mounting version	Color	Order No.
Pull-version	silver	29276001
	white	29276002
	special color	29276003
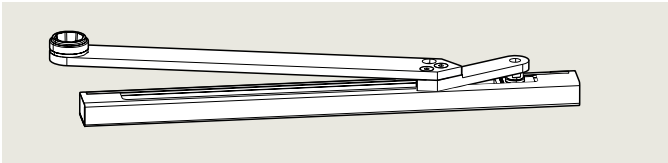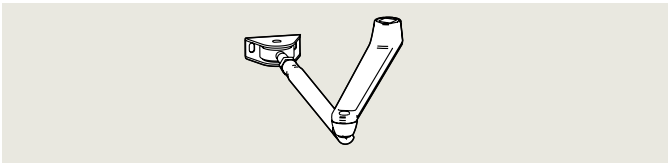
ED standard arm 225

ED 100 and ED 250: For reveal depths 0 – 225 mm

Mounting version	Color	Order No.
Push-version	silver	29271001
	white	29271002
	special color	29271003

ED standard arm 500

ED 100: For reveal depths 226 – 300 mm
ED 250: For reveal depths 226 – 300 mm and 250 kg
        For reveal depths 301 – 500 mm and 160 kg

| Mounting version	Color	Order No.
Push-version	silver	29272001
	white	29272002
	special color	29272003

ED axle extensions

The axle extensions 20, 30 and 60 mm are suitable for all arm versions of the ED 100 & ED 250. The axle extensions 90 mm is only suitable for all arm versions of the ED 250.

The axle extensions are available in chromated black.

| ED axle extension	Order No.
20 mm	29278301
30 mm	29278001
60 mm	29278101
90 mm	29278201

dormakaba Upgrade Cards

dormakaba Upgrade Cards are designed to increase the functional range of our swing door operators. The installation of the cards is very easy: Just insert the respective Upgrade Card into the proper slot at the control unit and the software will be transferred automatically. dormakaba offers different Upgrade Cards, which may either be combined or installed as individual components. Please note that the respective function of the Upgrade Card is only available as long as the card is connected to the control unit.
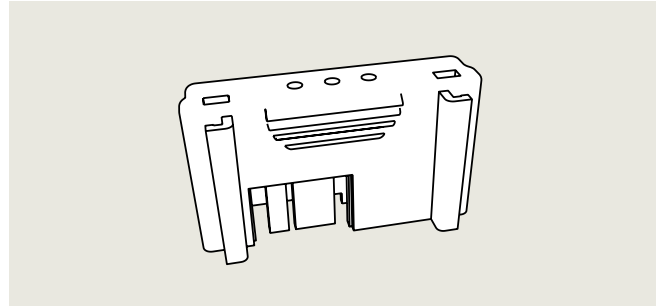
Upgrade Card Full-Energy – blue

All operators are supplied as Low-Energy version, which means that the adjustable opening and closing speed range is restricted to a certain limit. The respective limits depend on the prevailing door-leaf width and door-leaf weight and may vary between 1° and 27° per second. These limits furthermore comply with DIN 18650 and EN 16005 (German Industrial Standard), ANSI 156.19 (American Standard) and BS 7036 (British Standard). Depending on their field of application, such swing door operator might not require safety sensors when operated in Low-Energy Mode. If you need a higher driving speed, you will require the respective Full-Energy Upgrade Card. The driving speed may then be increased to a maximum of 50°/second with the ED 100 and to 60°/second with the ED 250. In this case the swing path has to be monitored by safety sensors (mounted onto the door leaf).

Recommended weight/dimensions for the installation of the Full-Energy Upgrade Card
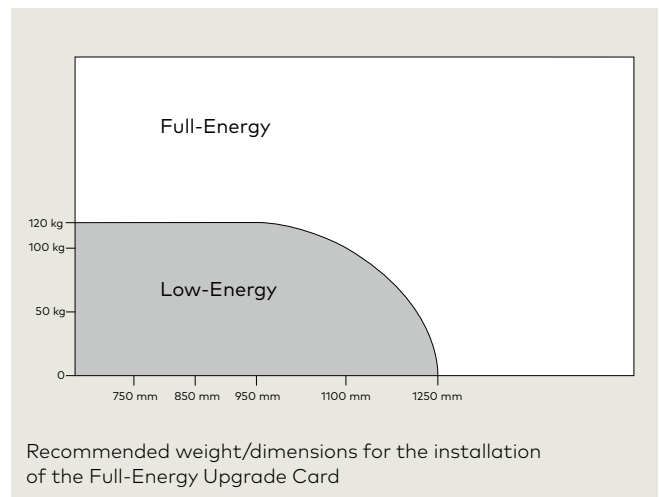
ED Upgrade Card Full-Energy	Color	Order No.
ED 100	blue	29251022
ED 250	blue/ transparent	29251020

Upgrade Card Fire Protection ED 100 – red

When the ED 100 is installed on fire doors with hold open requeirents and a stand alone smoke detector, the Upgrade Card Fire Protection is required for compliance with the guidelines for hold-open devices. Apart from its smoke detector connection (as monitored current loop), the card also offers a manual reset function (by opening the door), a full-energy function and the system may be triggered at the door leaf. Thanks to the card's integrated full-energy function, no additional Full-Energy Upgrade Card is required.

ED Upgrade Card Fire Protection	Color	Order No.
ED 100	red	29252022
ED 250	red/ transparent	29252020

Manual reset by opening the door
A triggered hold-open system has to be reactivated manually. As soon as the function has been activated, it suffices to open the door until it has almost reached the adjusted opening width.

Triggering at door leaf
It must be possible to trigger a hold-open device manually in order to close the door. With ED 100 & ED 250, users may deactivate the hold-open function by a slight push against the door leaf.
So no pushbutton is required to trigger a closing cycle; however, it is still available as an option.

Upgrade Card Professional

The Upgrade Card Professional provides functions for swing door operators that used to be realized with the aid of external components.

Extended hold-open time of 180 s

The hold-open time of up to 30 seconds, which is already integrated in the basic system, is sufficient for most applications. However, an extended hold-open time of up to 180 seconds may easily be realized with the aid of the Full-Energy Upgrade Card.

Flip-Flop function

In standard mode, the operator opens the door after a Night-/Bank pulse has been triggered (via the key switch) and closes it on expiry of the hold-open time. When the flip-flop function is activated, the door opens and remains in PERMANENT OPEN position as soon as the Night-/Bank function is triggered at the respective input. The door will close when the Night-/Bank function is activated again. The hold-open period in PERMANENT OPEN position is not limited, and the standard hold-open time is available at all other activator inputs. Please note that smoke detectors always have priority to the PERMANENT OPEN function.

Nurse-Bed function

(only for double-leaf door systems) As soon as a pulse is triggered, both door leaves of the double-leaf system will open. Sometimes this may not be necessary, as the full passage width is not required. Whenever this is the case, the nurse-bed function is perfectly suitable to control the two door leaves separately.
The activator that is connected to the external detector only institutes the active door leaf to open. The resulting passage width is sufficiently big to allow people to use the door.
The other activator (the one that is connected to the internal detector) is used to open the door to the full opening width. In this case, both door leaves open so that the full passage width is accessible.
This function reduces the energy consumption and may help to avoid draughts and thus heat loss.

	Color	Order No.
ED Upgrade Card Professional ED 100 & ED 250	green	29253001

Upgrade Card DCW®

The Upgrade Card DCW® provides the operator with a DCW® Bus connection. The integrated DCW® operator supports the following accessory:

Emergency exit motor lock with self-locking action SVP DCW®

The required procedure is controlled by the operator while the operator and the motor lock communicate via the DCW® bus.

ST 32 DCW®

The key switch to trigger the Night-/Bank function is suitable for application as activator outside the secured area (if you turn the key clockwise). When the key switch is used in conjunction with the DCW® program switch: the program switch is adjusted to OFF by turning the key counter-clockwise in order to deny access after closing of business or during work breaks. Turn the key to the right for more than 3 seconds in order to trigger the AUTOMATIC function.*

	Color	Order No.
ED Upgrade Card DCW® ED 100 & ED 250	yellow	29254001

* Depending on regional standards, provisions and regulations regarding the safeguarding of buildings, further measures to shut off the building may be required.

Upgrade Card barrier-free toilet

With the aid of the Upgrade Card, the required special functions are allocated to the in- and outputs of the control unit to facilitate the connection of the respective components.

System overview
The system requires an electric strike, a motor lock or similar devices to keep the door closed. Furthermore, the door is equipped with a lever handle on the inside and a knob on the outside so that the door may only be opened from the inside and the outside with the corresponding key. In addition, large-surface pushbuttons are installed on the inside and on the outside of the toilet while a status indicator (vacant/occupied) on the outside and an occupied light indicator on the inside of the toilet indicate the current status. As an option, we provide an emergency pushbutton (to be mounted on the outside), which allows to open the door immediately in the event of an emergency.
Please note that dormakaba recommends connecting the barrier-free toilet to an additional emergency call system (by others).
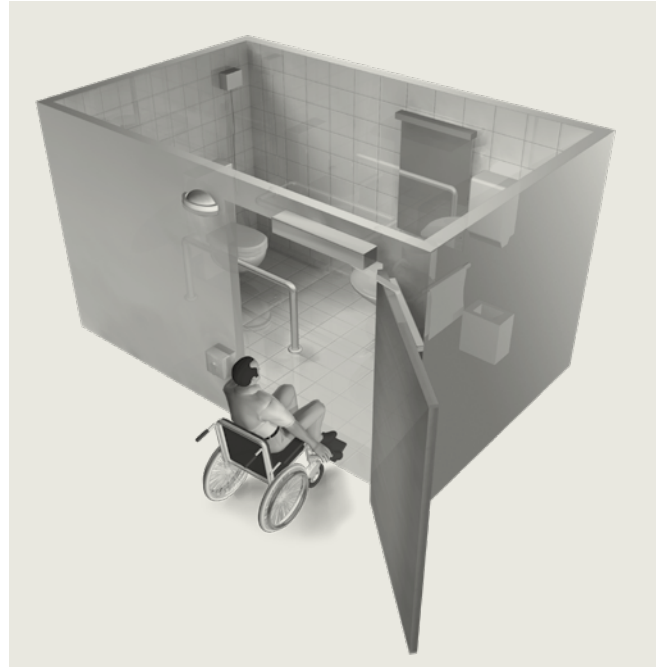
Entering the barrier-free toilet
While the toilet is vacant, the status indicator on the outside is green. Use the pushbutton on the outside to trigger an automatic opening cycle. The door will close automatically on expiry of the adjusted hold-open time. As soon as the door is fully closed, users may deactivate the external pushbutton via the pushbutton on the inside so that the door is no longer accessible from the outside. At the same time, the external status indicator switches from green to red in order to indicate that the toilet is occupied. Also the internal status indicator turns red to show the user inside the toilet that the door is now locked.

Leaving the barrier-free toilet
Users may open the door either automatically via the internal pushbutton or manually by using the lever handle. At the same time, the system emits a 24 V DC message, which may be used to flush the toilet automatically. The door closes on expiry of the adjusted hold-open time. The status indicator on the outside switches from red to green and the light indicator on the inside goes out as soon as the door has reached its "closed" position.

Emergency opening from the outside
The system is ready for connection of an emergency pushbutton so that, in the event of an emergency, users may deactivate the locking function and the door can only be opened by hand. In this case the door not longer operates automatically.
As an alternative, the door may be opened with the aid of a key from the outside (in the event of an emergency). In both cases, the status indicator on the outside switches from red to green and the light indicator on the inside goes out.

	Order No.
Upgrade Card Barrier-Free Toilet	29253002

# Hold open device application for fire doors

Functional characteristics

In the event of a fire, the ceiling-mounted or lintel-mounted smoke detectors detect emitted smoke and deactivate the automatic opening of the door. In this case, the operator will close the door via the integrated spring and can no longer open it automatically. Apart from the automatic activation via smoke detector, the system may also be triggered manually via the optional manual release pushbutton or when the door is closed by hand. In order to reactivate the system, the door has to be opened manually.
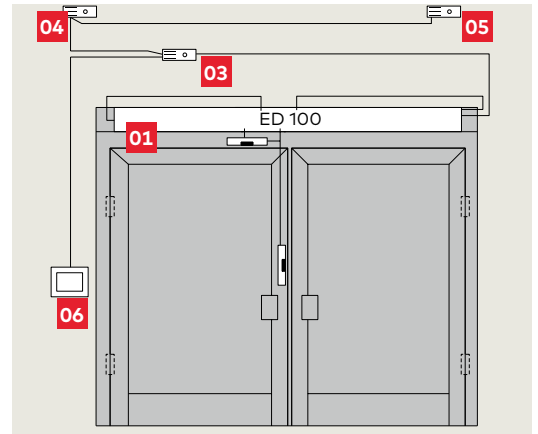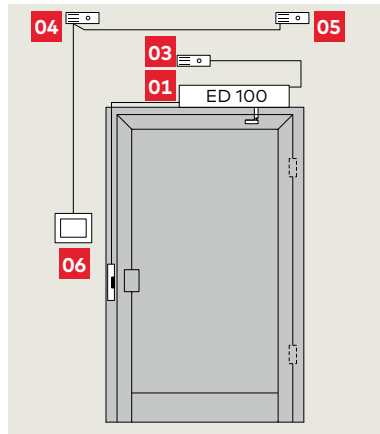
01 ED 100/ED 250
02 ED 100/ED 250 with continuous cover
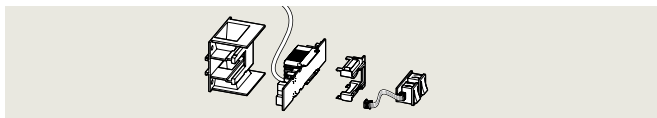**03** RM-ED smoke detector with own casing or integrated

04 RM-N smoke detector, opposite hinge side
05 RM-N smoke detector, hinge side
06 Optional manual release pushbutton "Tür zu" (German for "close door")
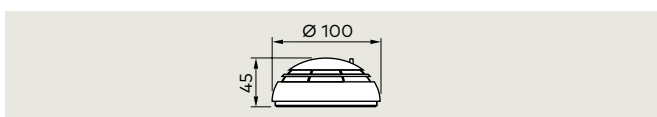
RM-ED lintel-mounted smoke detector
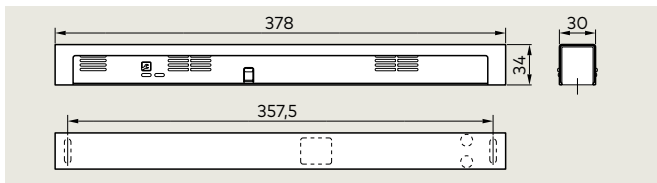
		Color	Order No.
RM-ED		silver	64840001
		white	64840011
		special color	64840009

Smoke detector RM integrated

		Color	Order No.
RM-ED integrated*			

RM-N ceiling-mounted smoke detector

Ø 100
45

		Color	Order No.
2 x RM-N		white	64830900

HT manual release pushbutton

Tür schließen
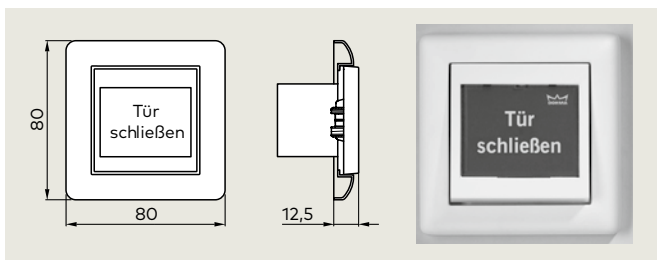
		Color	Order No.
Flush-mounted version		white	19144601175
Box for surface-mounting for HT (No picture)		white	05158533332

ESR – Integrated door coordinator

The ESR set is installed inside the double-leaf operator on site. It is available as individual component and easy to install. The system works similar to a drum brake and thereby ensures the proper functioning of the system. Its brake works on the motor shaft of the operator on the active door leaf and transfers the switching signal via a shaft. The system does not require any maintenance.

	Order No.
ED ESR set	29261001

*Components are included in cover, order no. please refer to page 18

Wiring diagrams

ED 100 & ED 250   single doors

ED 100 & ED 250   double doors

ED 100 & ED 250   single doors, barrier-free toilet

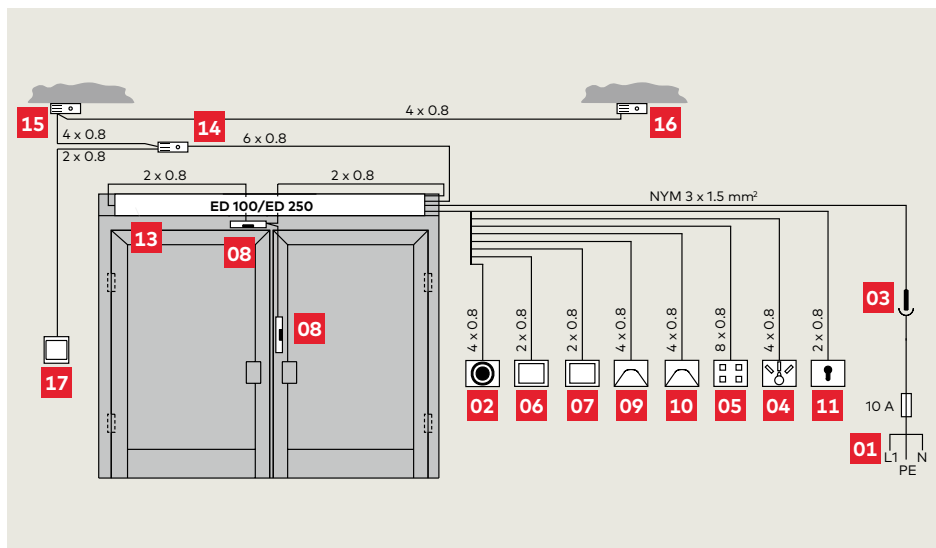**Connections**
01 Power supply
02 Emergency pushbutton, function: Emergency Off
03 Two-pole-and-earth socket
04 External PGS, mechanical
05 External PGS, electronic
06 Pushbutton, inside
07 Pushbutton, outside
08 Locking device
09 Radar motion detector, inside
10 Radar motion detector, outside
11 Key switch
12 ED 100/ED 250
13 ED 100/ED 250 with continuous cover
14 RM-ED smoke detector*
15 RM-N smoke detector, opposite hinge side
16 RM-N smoke detector, hinge side
17 Optional manual release pushbutton "Tür zu" (German for "close door")
18 Red-green-display

*not necessary with integrated smoke detector

Program switches

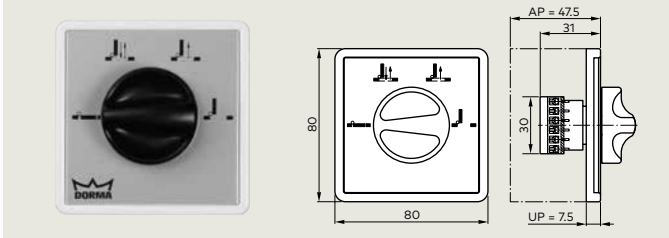External program switches are available in different designs and have been conceived for all kinds of demands. They offer various options, from a mechanical to a full-electronic version, alternatively also lockable via profile half-cylinder or in a full-electronic way via code. These switches are designed to replace the internal program switch.
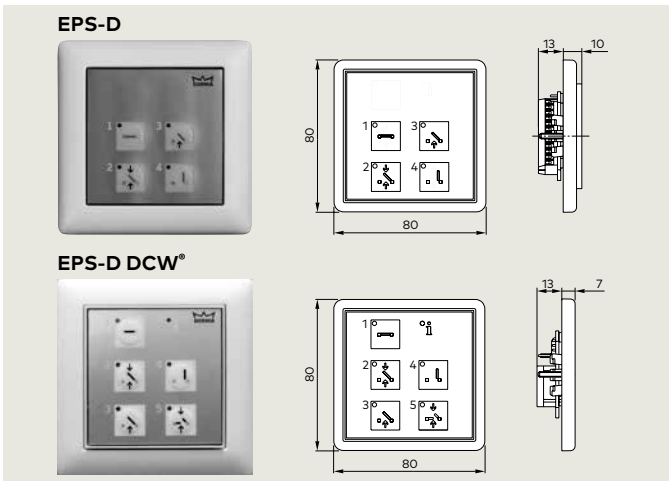
Mechanical

Program switch	Color	Order No.
4-position, aluminum, flush-mounted version	white, Gira S-Color	19135404150
Box for surface-mounting		5080531332

Mechanical and lockable
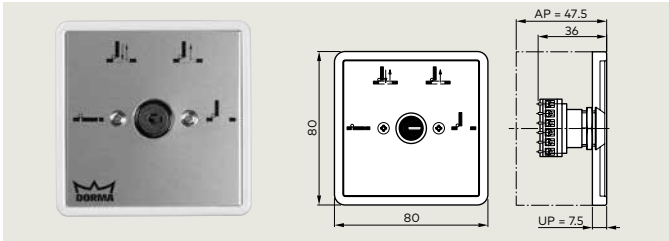
Program switch	Color	Order No.
4-position, lockable, aluminum, flush-mounted version	white, Gira S-Color	19135604150
Box for surface-mounting		5080531332

Electronic

EPS-D

EPS-D DCW®

Full-electronic Program switch	Color	Order No.
... control up to 5 different functions of the automatic door: Off, automatic, exit only (closing time), partial open (1-panel opening in case of 2-panel doors), permanent open. Electronically operated via push buttons. Lockable via numerical code or an additional key switch. DCW® model can be controlled centrally, e.g. from a PC, function display is simultaneously visualized on the program switch. System 55, flush-mounted		
EPS-D	white	16557001150
EPS-D DCW®	white	16577301150
Box for surface-mounting		5158533332

Mechanical with profile half-cylinder
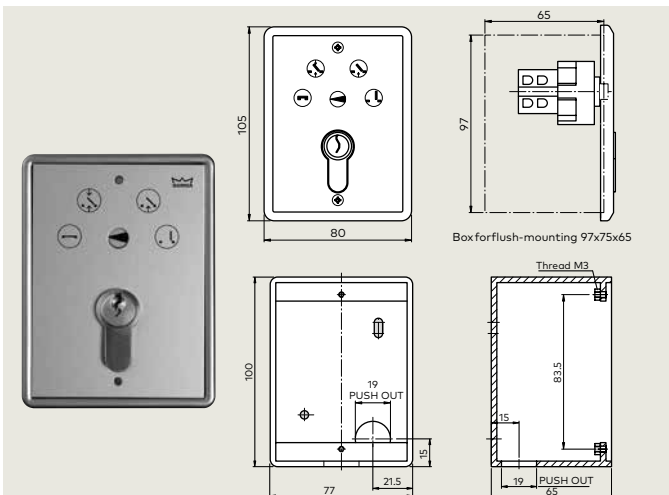
Program switch	Color	Order No.
4-position, lockable via profile half-cylinder, white, flush-mounted version	white	19141801170
Box for surface-mounting		19142201170

Pushbuttons

Pushbutton
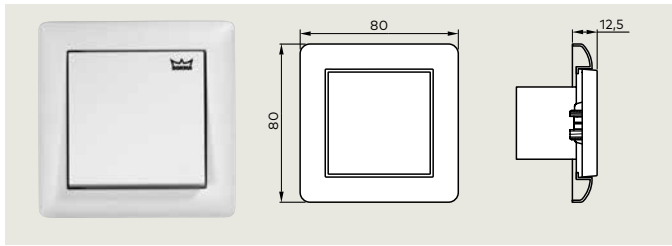
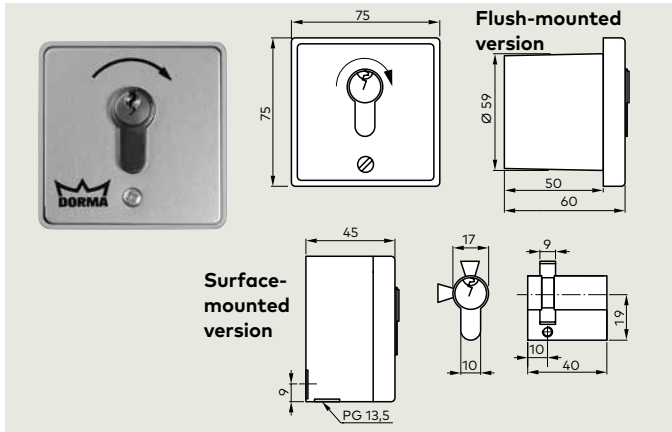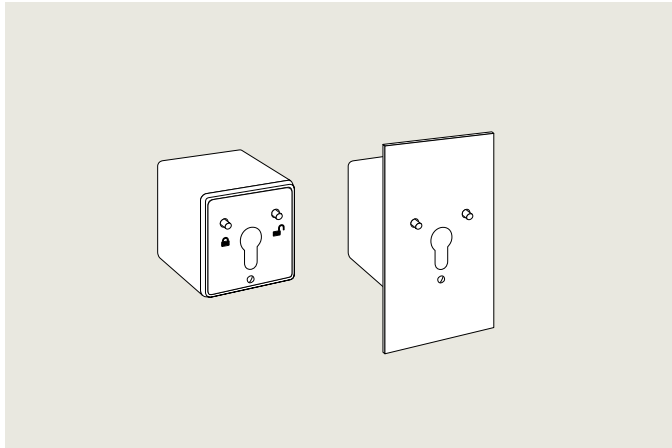|	Color	Order No.
Single-pole changeover contact, standard frame, flush-mounted version, System 55	white	19144701170

Key switches KT 3-1 surface-mounted version/flush-mounted version

	Order No.
1 NO contact, with profile half-cylinder (may be replaced by any standard profile half-cylinder), key only retractable in neutral position, aluminum, metal, 75 x 75 x 60 mm	
KT 3-1 flush-mounted version	05054531332
KT 3-1 surface-mounted version	05054631332

Key switches ST 32 DCW®

	Order No.
Tamper-proof key switch with LED display (red/green), silver-colored LM housing with front plate, suitable for surface-mounted and flush-mounted installation, for controlling the door management system TMS. Adjustable and restrictable functions of the key switch ST 3x DCW® can be programmed via the parameterization software, TMS Soft. Connection to the door management system TMS via DCW® system bus. Protection class IP 54. Dimensions (W x H x D) (approx.): Housing: 75 x 75 x 50 mm Front plate (flush-mounted installation): 90 x 100 x 2 mm.	56343200

CT 4/1 code keypad as control for locking devices
(keypad and electronic module have to be combined)

The code keypad does not require optional software for simple access authorizations. The water resistant metal keypad is also suitable for installation in the exterior of a building. Thanks to Plug & Play, the 4- or 6-digit code may be changed directly with the aid of the keypad.
The respective control unit is installed within the security zone and may be connected to all dormakaba operators. Surface-mounted version, 230 V/50 Hz, 1.5 V A, 1 x UM potential-free relay contact 8 A, 250 V, connections: max. 2.5 mm, 75 x 75 x 11.5 mm

	Color	Order No.
MTB 4/1 metal keypad to enter the activation code (to open the door) and for programming purposes, surface-mounted version 75 x 75 x 11.5 mm		05079331332
EB 4/1 Electronic module, incl. 2 m connection cable, plastic cover, surface-mounted version	black	05063431332

Pushbuttons (elbow)

Large-sized pushbutton (elbow)
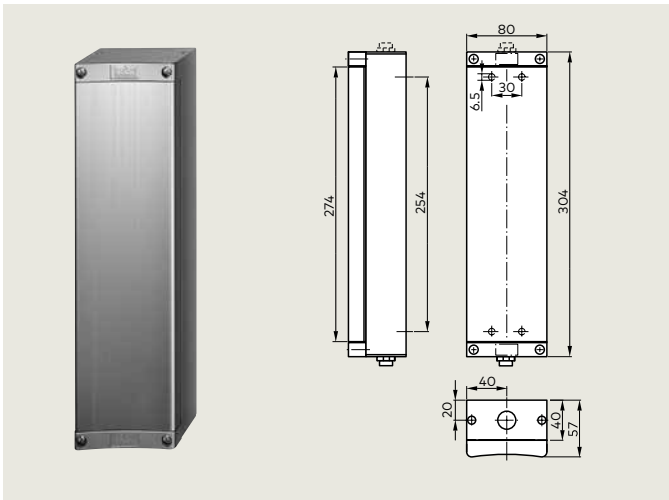
	Color	Order No.
Flush-mounted version/ surface-mounted version, 304 x 80 mm	silver-colored	90410015
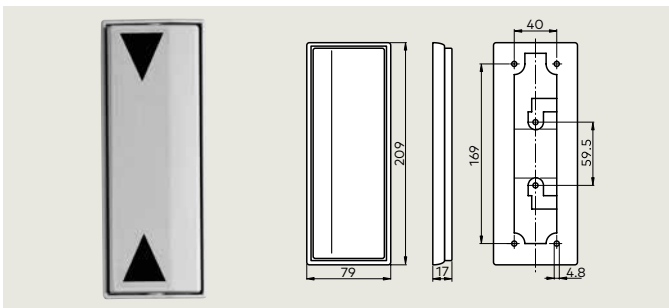
	Color	Order No.
Surface-mounted version, flat design, plastic, 209 x 79 x 17 mm	grey	05080231332

Large-sized pushbuttons

surface-mounted version
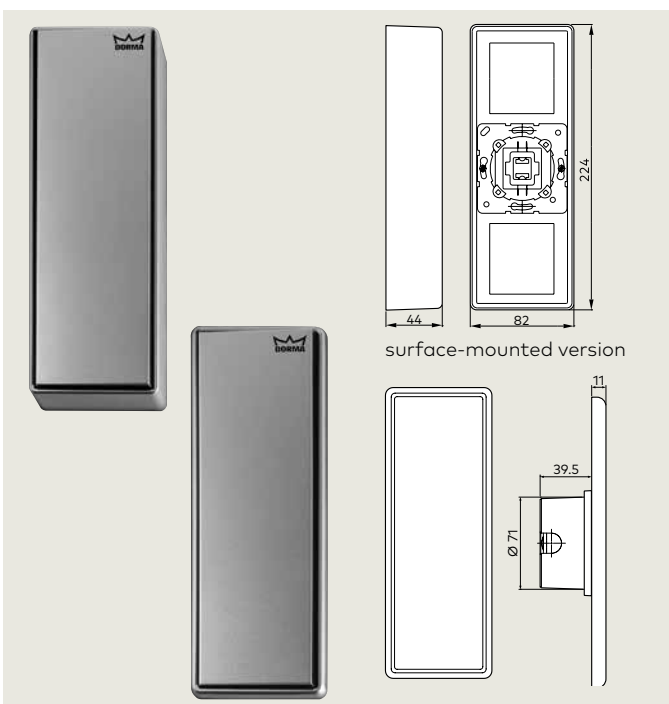
Large-sized pushbuttons	Color	Order No.
With box for flush-mounting, without switch pad, incl. switch, 224 x 82 mm	silver-colored	05095531332
With box for surface-mounting, without switch pad, incl. switch, 224 x 82 x 44 mm	silver-colored	05095231332

Switch pad	Order No.
Stainless-steel, suitable for surface-mounted version/ flush-mounted version, 214 x 70 mm	05095431332
Stainless-steel, suitable for surface-mounted version/ flush-mounted version, 214 x 70 mm, lettering "Tür auf" (German for "open door") (No picture)	05095331332

BRC remote system

The new BRC system operates with a bi-directional BidCoS wireless protocol. In contrast to unidirectional systems, the receiver sends a message to the hand-held transmitter that the signal has been received. The hand-held transmitter indicates the prevailing status via a LED. Thus a short keystroke is enough to trigger an opening pulse in a reliable way within the system's typical field range of

100 meters. The BRC-W and BRC-T transmitters are also of bi-directional design; however, the status indicator is not visible as the transmitters are integrated in pushbuttons.
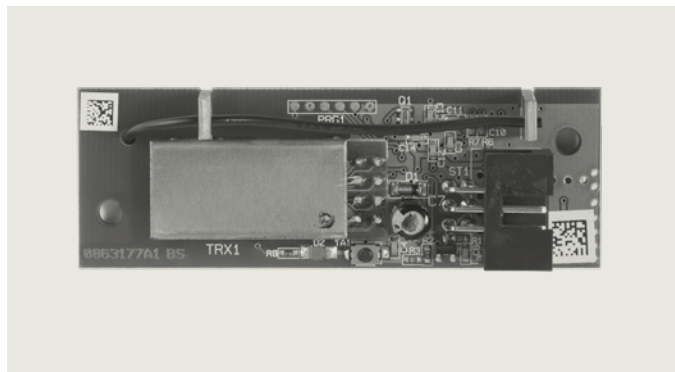
BRC-R

The BRC-R radio receiver may easily be installed inside the operator as its size is adapted to the available space. Simply fix it on the motor-gear-unit with two screws.
We offer three different types of transmitters. Up to 1024 transmitters may be allocated to a BRC-R.

	Order No.
Receiver	29302002

BRC-W

The battery-operated wall-mounted transmitter can easily be glued or screwed to the wall.

The push button can also be installed without the frame into existing switch series System 55. Suitable for the interior under lighter conditions.

	Order No.
Wall transmitter	29301002

required battery type: 2 x 1.5 V LR03 (AAA)

BRC-H 3

Bidirectional hand-held transmitter BRC-H, battery-operated, 4 channels, LED for feedback purposes, shockproofdesign.

	Order No.
Hand-held transmitter	29304001

required battery type: 1 x 1.5 V LR03 (AAA)

BRC-T

Battery-operated transmitter, designed for installation into a pushbutton with deep box for flush-mounting or into a surface-mounted large-sized pushbutton. In connection with the dormakaba stainless-steel large-sized pushbutton it is also suitable for heavier conditions.

	Order No.
Battery-operated transmitter	29301003

Motion detectors

Motion detectors	Designation	Specification	Color	Order No.
	Prosecure Easy Motion Mono	Full-automatic access on pulse activation; adjustable inclination angle, inclined field of view and field size, LED status indicator, not in accordance with EN 16005 Ambient temperature –20 °C to 60 °C	black silver colored white	86001000 86002000 86003000
	Prosecure Easy Motion Stereo	Adjustable inclination angle, inclined field of view and field size, direction recognition, cross-traffic suppression, immunity, LED status indicator, not in accordance with EN 16005 Ambient temperature –20 °C to 60 °C	black silver colored white	86011000 86012000 86013000
	Prosecure Opti Motion Mono	Adjustable inclination angle, inclined field of view and field size, direction recognition, immunity, LED status indicator Ambient temperature –20 °C to 60 °C	black silver colored white	86101000 86102000 86103000
	Prosecure Opti Motion Stereo	Adjustable inclination angle, inclined field of view and field size, direction recognition, cross-traffic suppression, Slow Motion function, immunity, LED status indicator Ambient temperature –20 °C to 60 °C	black silver colored white	86111000 86112000 86113000

Accessories	Designation	Specification	Order No.
	Rain protection cover	For Easy Motion detectors	86031900
	Rain protection cover/ ceiling angle bracket	For Opti Motion detectors	86131900
	Prosecure Remote Control	Remote control for programming Prosecure Opti Motion detectors or products from other brands, for the convenient and exact adjustment of high-mounted sensors, self-explaining menu navigation, LCD display, ambient temperature -20 °C to 60 °C	86991900
	Magic Switch	Contactless mircowave sensor Flush mounting incl. flush can Dimensions: 84,2 x 84,2 mm Sticker included in delivery incl. mounting adapter for system 55	05076831332

Safety Sensors

Safety
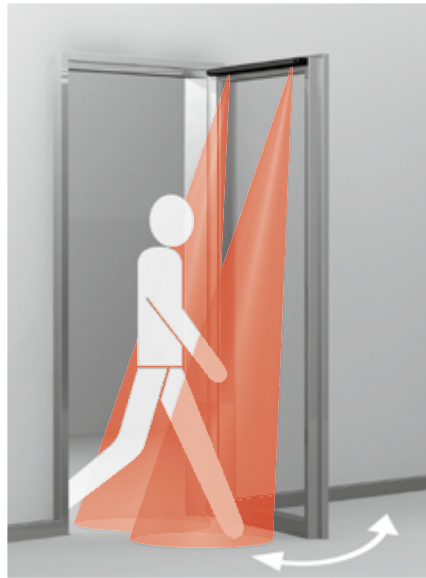
Reversing

Stop

Safety sensors are contact-free protection devices which are mounted to the door panel and designed to monitor the swivel range. The sensors can detect static as well as moving objects and the automatic swing door operator reacts accordingly to prevent a collision with the object.

When the door closes and the sensor detects an object on the closing side (opposite hinge side), the door will reverse and open again. The hold-open time will start over. The sensor can also be used as an activator on the closing side. On the opening side (hinge side), the automatic opening movement will be stopped if the sensor detects an object. As soon as the set hold-open time has expired, the door will close again. There are sensors with various technologies available that can be connected to the automatic swing door operators ED 100 and ED 250.

Depending on the application, the automatic swing door operators ED 100 and ED 250 can be operated without safety sensors in the low-energy mode (low energy operation). However, safety sensors can additionally be used in the low energy mode if a contact with the door is not desired. Safety sensors have to be used in the full-energy mode.

Safety sensors with infrared technology

The **Prosecure Opti Save** and **IRS-4** are safety sensors based on infrared technology to safeguard the swivel range of automated swing doors in accordance with DIN18650/EN16005.

The sensors are installed inside an aluminum profile in the upper area of the door. The resolution of the infrared sensors is typically 10 measurement points per meter of door width. Depending on the size of the door, a different number of sensors will be required. The maximum assembly height for Prosecure Opti Safe is 3.5m, for IRS 4 3.0 m, the maximum door panel width in each case is 1.6 m.

The detection field can be easily adjusted so that the grey zone in which the detection is no longer possible due to the physical limits of the technology does usually not exceed 20 cm. In case of infrared-optical sensors, the quality of the swivel range monitoring depends in each case on the characteristics of the floor. Both options allow you to guard both normal floors and floors with low reflectance, grates or dirt-trap mats that are usually difficult to detect.

If a door opens against a wall, the wall will be suppressed during the operation by the operator depending on the opening angle. If fixed installations such as handle bars are continuously within the detection range, the sensor modules must be adjusted so that the installed objects do not interfere with the detection.

A sufficient safeguarding of the swivel range can be achieved by adjusting the detection field. Depending on the risk potential that can be deduced from the risk assessment, the secondary closing edge must be protected by further measures.

Safety sensor Prosecure Opti Safe
incl. 2.5 m connecting cable and transition tube (dimensions: HxD 44 mm x 38 mm)

	Description	black	silver	white	special color
Prosecure Opti Safe 700	2 sensor bars with 1 transmitter & 1 receiver module each, length 700 mm	86501070	86502070	86505070	86504070
Prosecure Opti Safe 900	2 sensor bars with 1 transmitter & 1 receiver module each, length 900 mm	86501090	86502090	86505090	86504090
Prosecure Opti Safe 1200	2 sensor bars with 1 transmitter & 1 receiver module each, length 1200 mm	86501120	86502120	86505120	86504120
Prosecure Opti Safe 1600	2 sensor bars with 2 transmitters & 2 receiver modules each, length 1600 mm	86501160	86502160	86505160	86504160

Safety sensor IRS-4
incl. 2.5 m connecting cable and transition tube (dimensions: HxD 47 mm x 45 mm)

	Description	silver	white	special color
IRS-4 350	1 sensor bar with 1 combined transmitter / receiver module, length 350 mm	294350	294343	294351
IRS-4 1200	1 sensor bar with 2 combined transmitter / receiver modules, length 1200 mm	294110	294113	294111
IRS-4 1600	1 sensor bar with 3 combined transmitter / receiver modules, length 1600 mm	294160	294163	294161

Safety sensors with laser technology

The **Flatscan SW** is a safety sensor based on laser technology to safeguard the swivel range of automated swing doors in accordance with DIN18650/EN16005.

The sensors are installed in the upper corner area of the door. The resolution of the sensor is 70 measurement points for the swivel range and 100 measurement points for the secondary closing edge. A single sensor module on each side is sufficient to safeguard the entire door up to a diagonal of 4 m.

The detection field of the sensor can be precisely adjusted so that the grey zone on the floor in which the detection is no longer possible due to the physical limits of the technology usually does not exceed 10 cm. The floor characteristics do not influence the sensor. The strength of the system becomes evident when difficult to capture floors with grates and grooves or shiny coats are involved.

If the door opens against a wall or if a fixed installation such as handle bars is continuously within the detection range, the sensor will detect them during the teach-in operation and automatically suppresses them during the operation without affecting the detection quality. The wall suppression of the operator can be used additionally.

A sufficient safeguarding of the swivel range can be achieved by adjusting the detection field. During the movement of the door, the detection field can even be dynamically expanded beyond the door panel and thus increase the operational reliability. In addition, the sensor offers a significantly improved protection on the secondary closing edge. Compared to the standard infrared sensors and depending on the risk potential deduced from the risk assessment, this can be sufficient to safeguard the secondary closing edge. You may take other additional measures to safeguard the secondary closing edge.

Safety sensor Flatscan SW
incl. 2.5 m connecting cable and transition tube (dimensions: WxHxD 142 mm x 85 mm x 23 mm, mounting base 7 mm)

	Description	black	silver	white
Flatscan Kit	1 sensor DIN left & 1 sensor DIN right	86501300	86502300	86503300
Flatscan left	1 sensor DIN left	86501301	86502301	86503301
Flatscan right	1 sensor DIN right	86501302	86502302	86503302

Further accessories

Red-green display
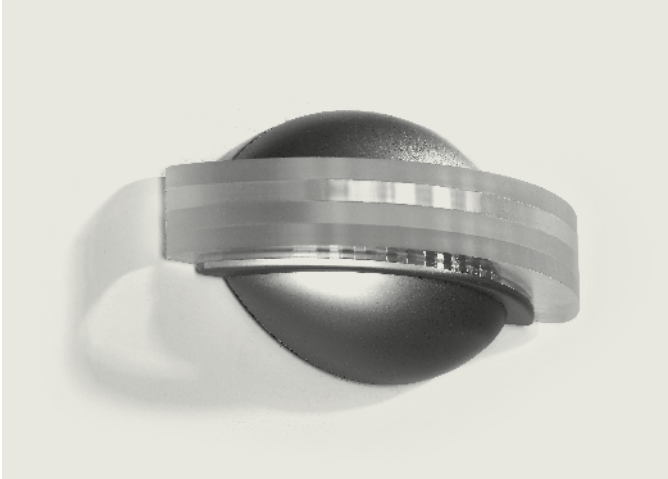
The red-green display indicates the status of the door system. The extravagant, semicircular designer light indicator is made of acryl, manufactured according to the latest LED technology and equipped with a high-grade LED display (24 V, brilliancy according to DIN VDE 0834, part 1).
Its light signals are visible from both sides and the front – even from a large distance.

Light indicator, 24 V DC,
LED display (red, green, white).

Order No.
05111631332

Emergency power supply unit MTD 700

In order to offer the visitors of a building a high degree of safety, the existing door systems must remain fully functional even in case of a power failure.
This is ensured by MTD 700 , the system for the emergency power supply. Depending on the features, the operation can be maintained to up to one hour. In the meantime, the entire door system will be supplied with emergency power. There is therefore sufficient time available for taking counter measures and to protect the building.

Emergency power supply MTD 700 230 V AC, output: 700 VA, scope of delivery incl. 1 x relay card for fault messages
Dimensions (W x H x D): 238 x 160 x 360 mm
Color: black

Order No.
5013632332

**Door
Hardware**

**Entrance
Systems**

**Electronic
Access & Data**

**Interior Glass
Systems**

**Mechanical
Key Systems**

Service

**dormakaba
International Holding AG**
Hofwisenstrasse 24
CH-8153 Rümlang
T +41 848 85 86 87
info@dormakaba.com
www.dormakaba.com