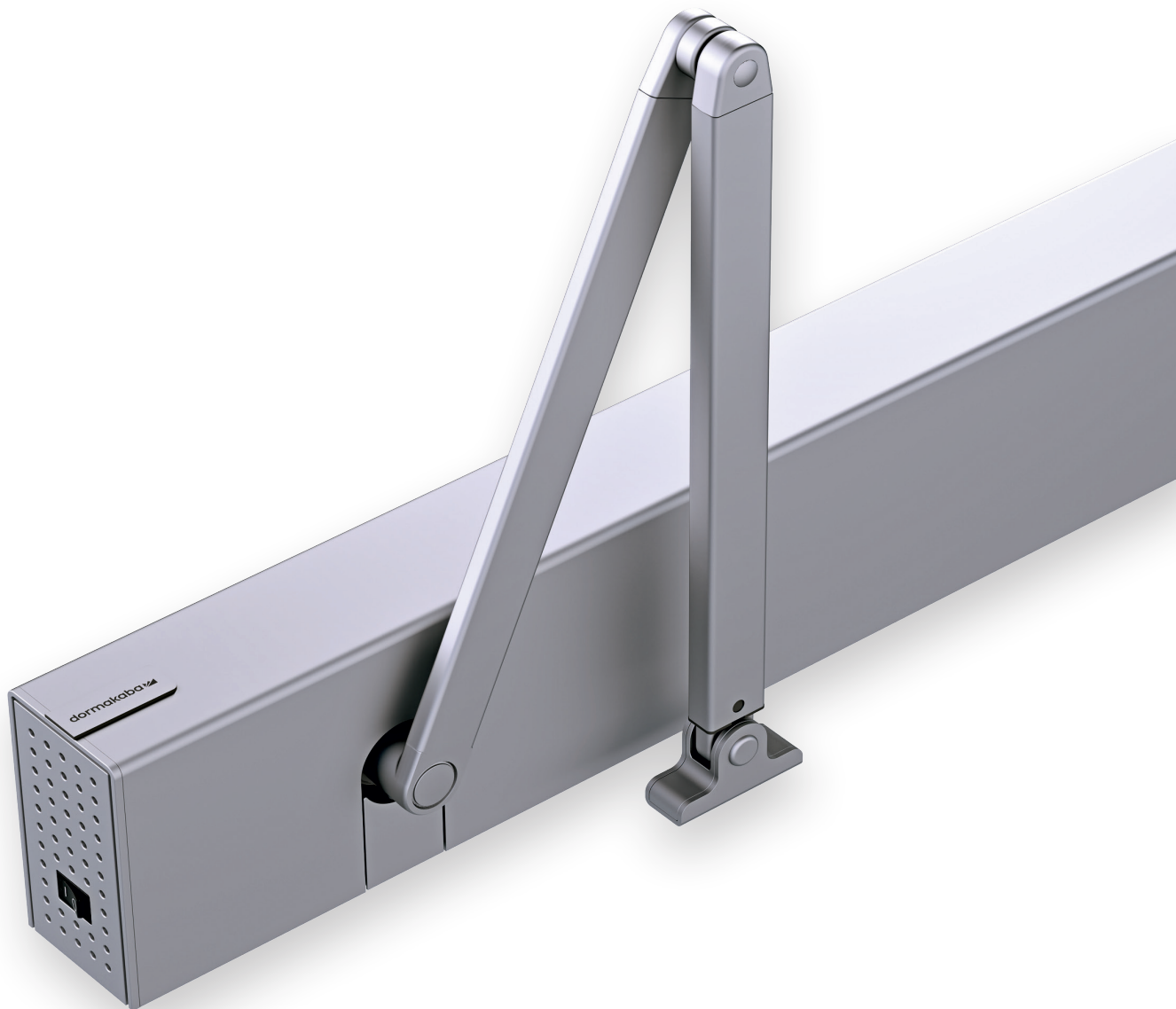


# ED 100 / ED 250

## Swing door operators



# Swing door operators with force balancing technology\*

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.

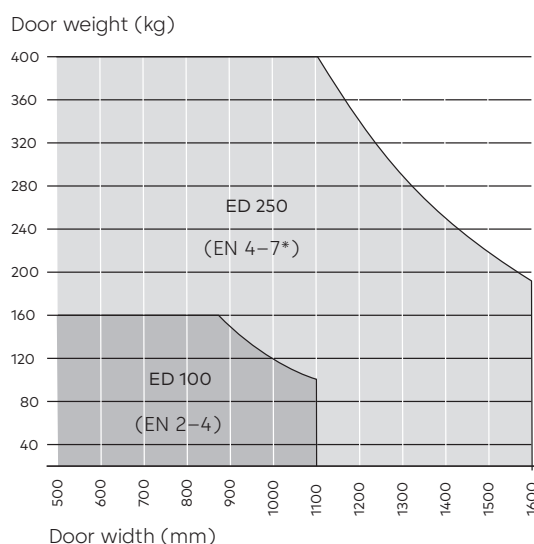
## Benefits

- Flexible configuration: Customers only pay for the functions they actually require.
- Low-noise application due to multi-stage gear.
- Elegant visual appearance: dormakaba design provides a operator height of only 70 mm.
- Various functions as standard.
- With integrated smoke detector
- Technically revised arm system in a new design.
- Better durability of the gear due to the use of the force balancing technology.
- **New:** EVAC function: The operator does not switch off completely in the event of an alarm and can be passed barrier-free via Power-Assist or via Night/Bank.
- **New:** SPV function: Additional parameter level to optimally adapt the drive parameters to the pressure conditions prevailing in the event of an alarm.

## 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 version with slide channel as well as the 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.
- **New:** EVAC / SPV function: Heavy doors, staircases with smoke extraction and pressure ventilation systems.

## Application: ED 100/ED 250



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.

\*EN 7: lintel depth max. 125 mm

\* Self-aligning gear components during operation, whereby a much better distribution of internal forces can be achieved.

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 circuit
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<sup>2</sup>

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<sup>2</sup>

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

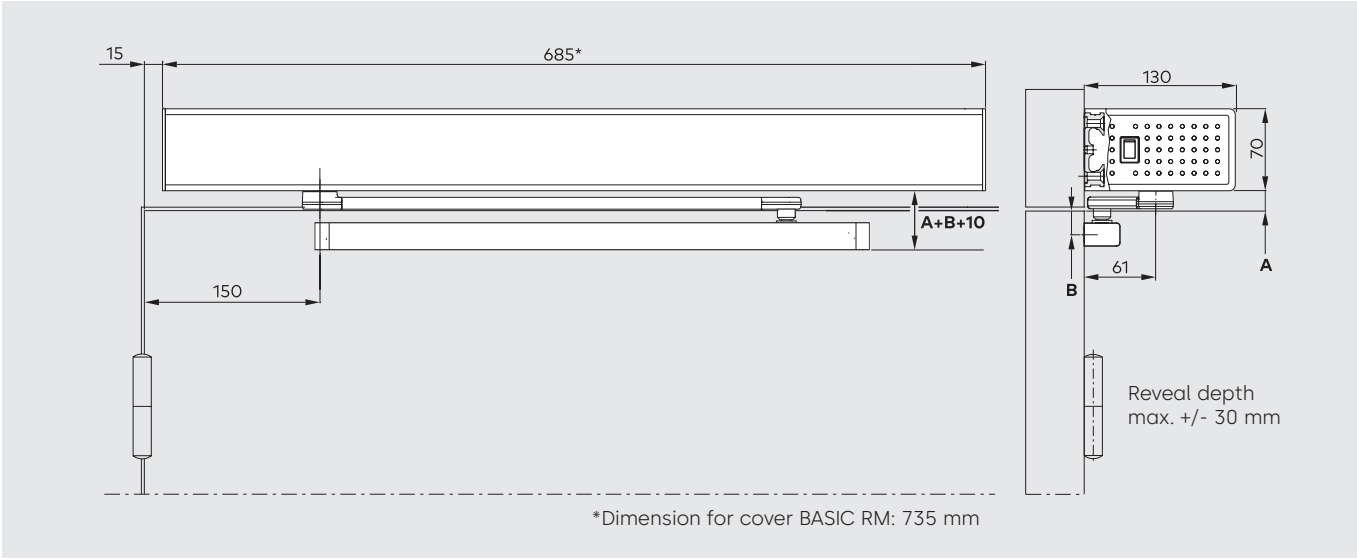
#### ED 250

Max. power consumption	240 Watts
Closing force	EN 4-7**, 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
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

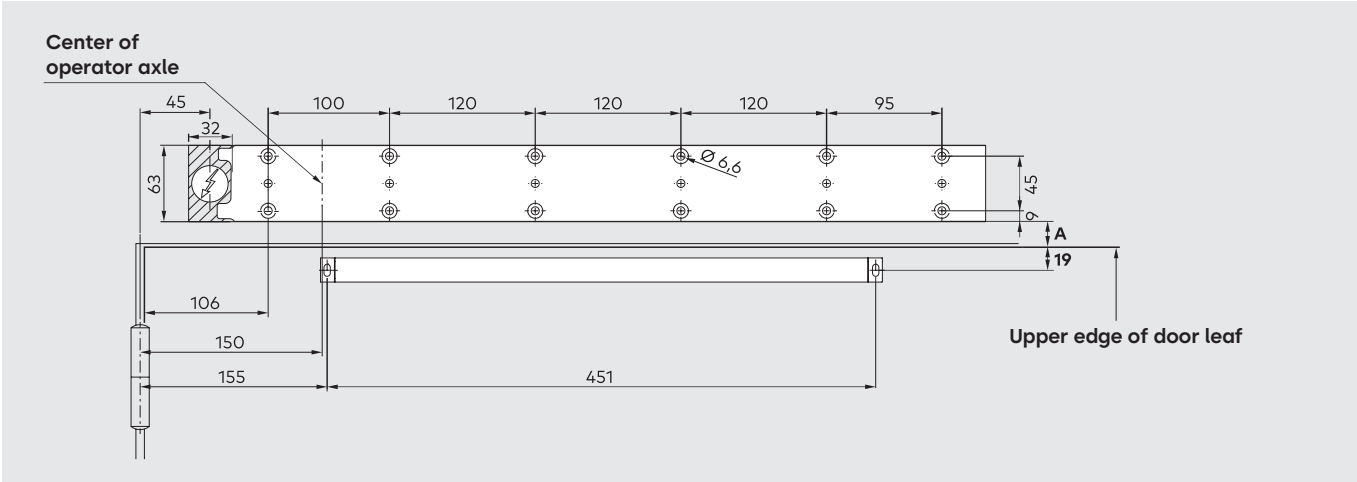
\* Depending on the door leaf weight, it is automatically limited in the low-energy operating mode according to EN 16005 or DIN 18650, BS 7036-4 and ANSI 156.19. Max. speeds are achieved only in the full-energy mode, with a low door panel weight and a taught opening angle of at least 95°.

\*\* EN 7: lintel depth max. 125 mm

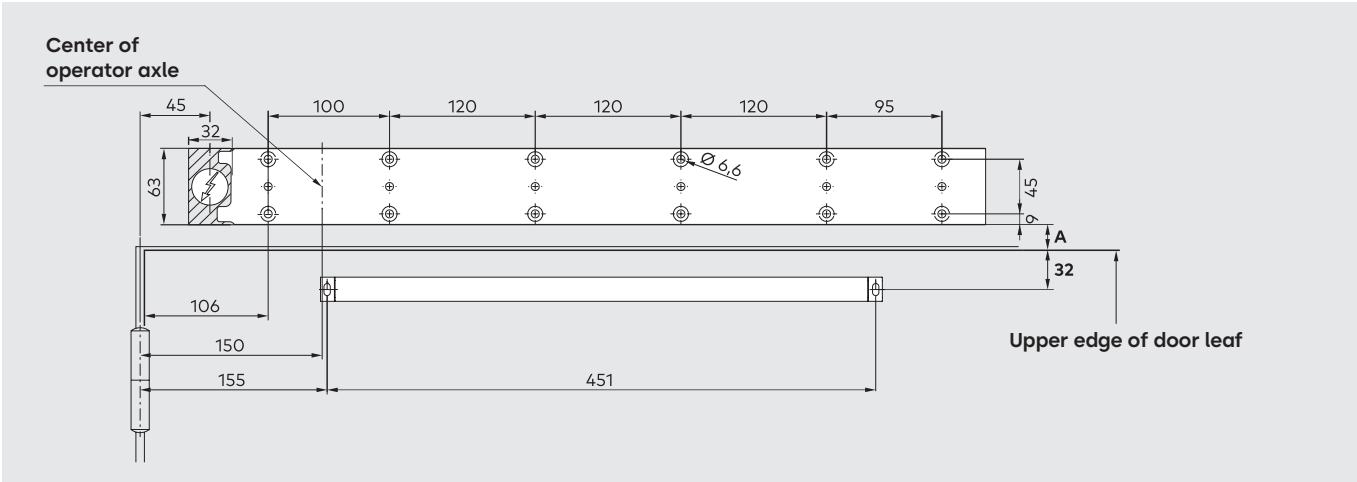
Mounting on hinge side, pull-version with slide channel, cover BASIC, standard axle extension



Drilling template: pivot pin short 12.5 mm



Drilling template: pivot pin long 25 mm



Axle extension	Standard	20 mm	30 mm	60 mm	90 mm*	Pivot pin	12.5 mm	25 mm
A	22 mm	42 mm	52 mm	82 mm	112 mm*	B	19 mm	32 mm

\* only for ED 250

Technical drawing of the BASIC RM door handle. The drawing includes a front view and a side view with the following dimensions:

- Front view:
  - Overall width: 685\*
  - Distance from left edge to center: 150
  - Distance from left edge to mounting hole: 15
  - Height: A+B+10
- Side view:
  - Width of handle body: 130
  - Height of handle body: 70
  - Distance from mounting hole to handle body: 61
  - Height of mounting plate: A
  - Height of handle body: B

\*Dimension for cover BASIC RM: 735 mm

Technical drawing of a door frame assembly. The drawing includes a side view of the door leaf and a cross-section of the frame. Key dimensions and components are labeled:

- Center of operator axle:** Indicated by a dashed line and an arrow pointing to the center of the operator axle in the cross-section.
- Dimensions:**
  - 45: Distance from the center of the operator axle to the first vertical support.
  - 100: Distance between the first and second vertical supports.
  - 120: Distance between the second and third vertical supports.
  - 120: Distance between the third and fourth vertical supports.
  - 120: Distance between the fourth and fifth vertical supports.
  - 95: Distance between the fifth and sixth vertical supports.
  - 63: Height of the door leaf.
  - 32: Width of the door leaf.
  - 45: Distance from the center of the operator axle to the first vertical support.
  - 106: Distance from the center of the operator axle to the first vertical support.
  - 150: Distance from the center of the operator axle to the first vertical support.
  - 195: Distance from the center of the operator axle to the first vertical support.
  - 451: Total width of the door leaf.
  - 31: Distance from the center of the operator axle to the first vertical support.
  - 45: Distance from the center of the operator axle to the first vertical support.
- Components:**
  - Door leaf: The main part of the door.
  - Operator axle: The axle that connects the door to the operator.
  - Vertical supports: The supports that hold the door in place.
  - Horizontal supports: The supports that hold the door in place.
  - Upper edge of door leaf: The top edge of the door.

Center of operator axle

45 100 120 120 120 95

32 63

$\varnothing 6,6$

45 9

A

44

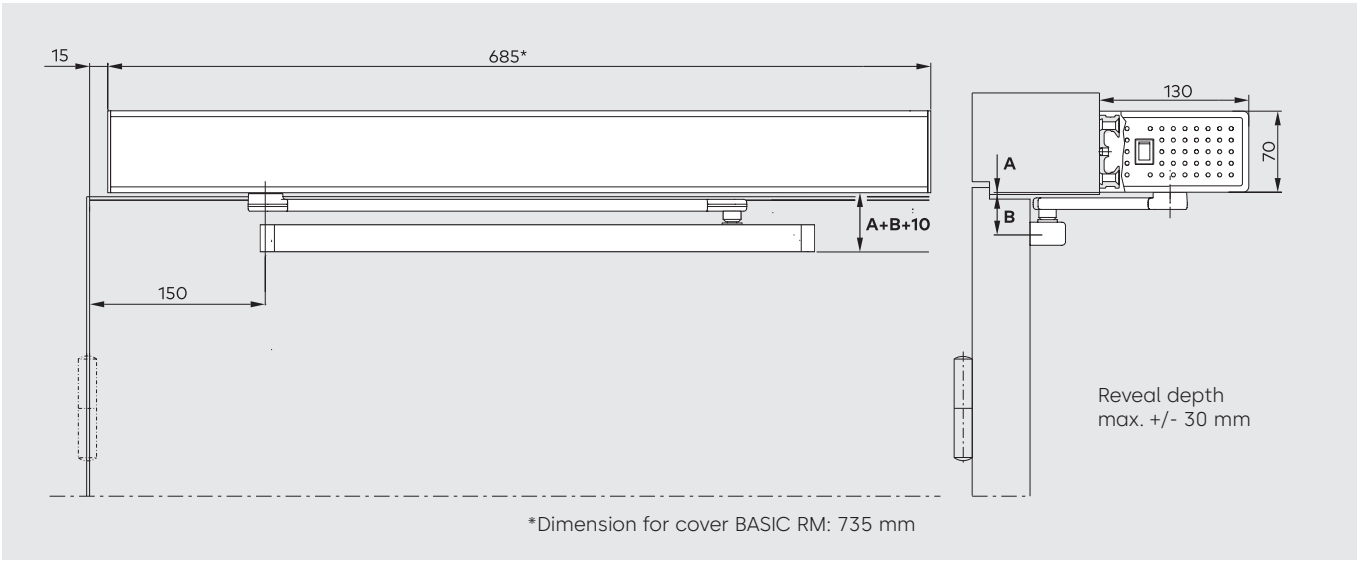
106 150 195 451

Upper edge of door leaf

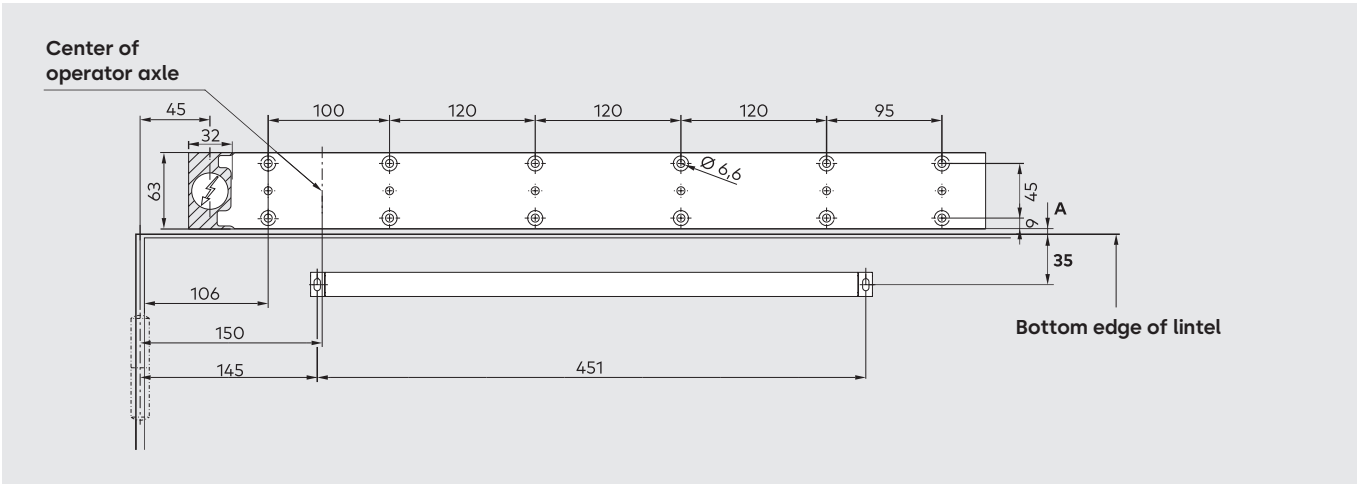
Axle extension	Standard	20 mm	30 mm	60 mm	90 mm*	Pivot pin	12.5 mm	25 mm
A	22 mm	42 mm	52 mm	82 mm	112 mm*	B	31 mm	44 mm

5

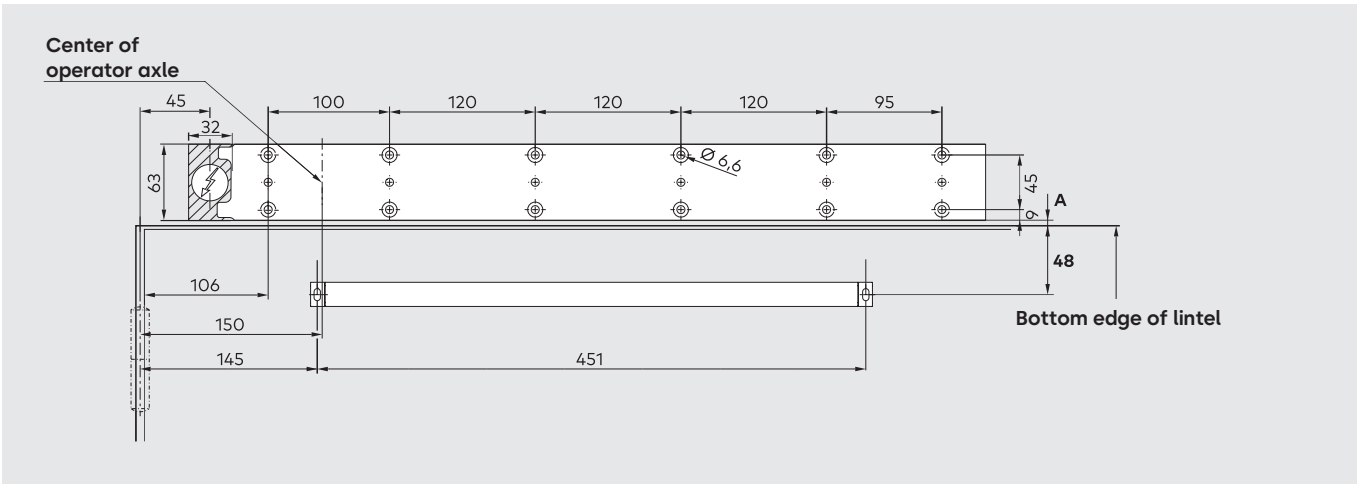
Mounting on opposite hinge side, push-version with slide channel, cover BASIC, standard axle extension



Drilling template: pivot pin short 12.5 mm



Drilling template: pivot pin long 25 mm



Axle extension	Standard	20 mm	30 mm	60 mm	90 mm*	Pivot pin	12.5 mm	25 mm
A	5 mm	25 mm	35 mm	65 mm	95 mm*	B	35 mm	48 mm

\* only for ED 250

Technical drawing of the BASIC RM cable management system, showing side and front views with dimensions.

**Side View Dimensions:**

- Overall length: 685\*
- Mounting bracket width: 15
- Distance from wall to start of cable tray: 150 (EN 7 = 250)
- Distance from wall to end of cable tray: 245 (EN 7 = 325)
- Height of cable tray from mounting surface: A+33

**Front View Dimensions:**

- Cable tray width: 130
- Cable tray height: 70
- Mounting bracket height: 33
- ED 100 = 0 – 300 mm
- ED 250 = 0 – 500 mm

\*Dimension for cover BASIC RM: 735 mm

Technical drawing of a door lintel assembly. The drawing shows a side view of the lintel with various dimensions and components labeled.

**Dimensions:**

- Overall length: 245
- Distance from left end to first hole: 106
- Distance between first and second hole: 150
- Distance between second and third hole: 100
- Distance between third and fourth hole: 120
- Distance between fourth and fifth hole: 120
- Distance between fifth and sixth hole: 120
- Distance between sixth and seventh hole: 95
- Distance from right end to seventh hole: 45
- Distance from right end to bottom edge of lintel: 33
- Distance from right end to bottom edge of lintel (labeled A): 45
- Distance from left end to center of operator axle: 106
- Distance from left end to center of operator axle (labeled 150): 150
- Distance from left end to center of operator axle (labeled 245): 245
- Distance from left end to center of operator axle (labeled 50): 50

**Components and Labels:**

- Center of operator axle
- Bottom edge of lintel
- Ø 6,6 (hole diameter)
- A (dimension line label)

Technical drawing of a door lintel assembly. The drawing shows a side view of the lintel with various dimensions and components labeled.

**Dimensions:**

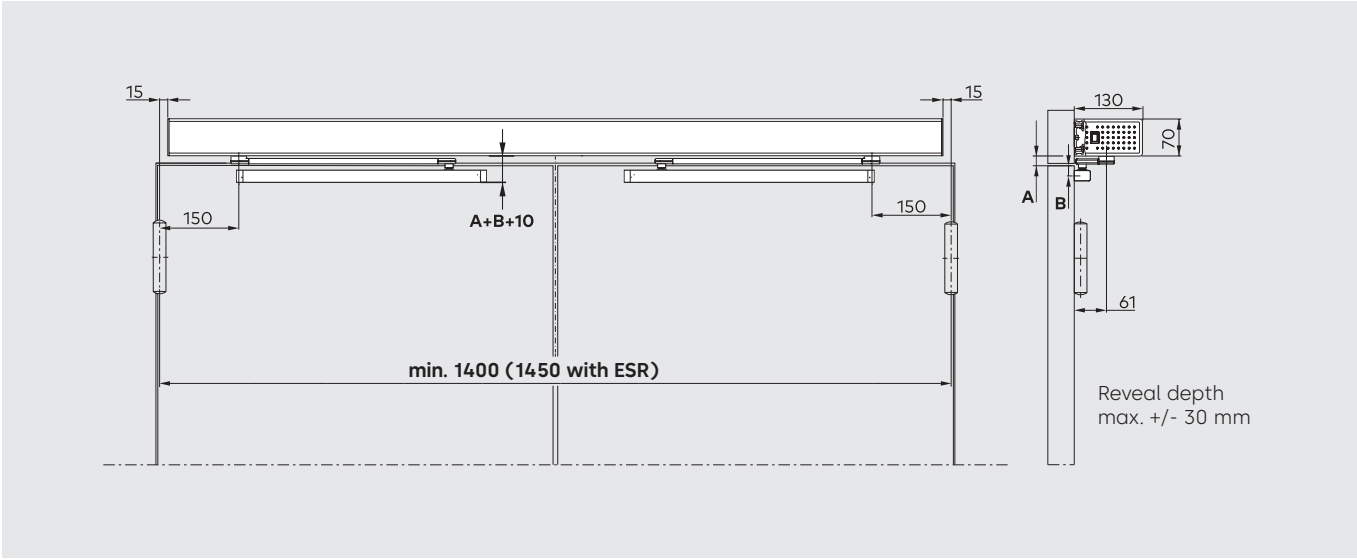
- Overall length: 325
- Distance from left edge to first bolt: 250
- Distance from left edge to center of operator axle: 145
- Distance from center of operator axle to first bolt: 100
- Distance between bolts: 120, 120, 120, 95
- Distance from last bolt to right edge: 45
- Distance from bottom edge of lintel to center of operator axle: 33
- Distance from bottom edge of lintel to center of operator axle (labeled A): 33
- Distance from bottom edge of lintel to center of operator axle (labeled 206): 206
- Distance from bottom edge of lintel to center of operator axle (labeled 250): 250
- Distance from bottom edge of lintel to center of operator axle (labeled 325): 325
- Distance from bottom edge of lintel to center of operator axle (labeled 50): 50
- Distance from bottom edge of lintel to center of operator axle (labeled 145): 145
- Distance from bottom edge of lintel to center of operator axle (labeled 100): 100
- Distance from bottom edge of lintel to center of operator axle (labeled 120): 120
- Distance from bottom edge of lintel to center of operator axle (labeled 120): 120
- Distance from bottom edge of lintel to center of operator axle (labeled 95): 95
- Distance from bottom edge of lintel to center of operator axle (labeled 45): 45
- Distance from bottom edge of lintel to center of operator axle (labeled 33): 33
- Distance from bottom edge of lintel to center of operator axle (labeled 206): 206
- Distance from bottom edge of lintel to center of operator axle (labeled 250): 250
- Distance from bottom edge of lintel to center of operator axle (labeled 325): 325
- Distance from bottom edge of lintel to center of operator axle (labeled 50): 50
- Distance from bottom edge of lintel to center of operator axle (labeled 145): 145
- Distance from bottom edge of lintel to center of operator axle (labeled 100): 100
- Distance from bottom edge of lintel to center of operator axle (labeled 120): 120
- Distance from bottom edge of lintel to center of operator axle (labeled 120): 120
- Distance from bottom edge of lintel to center of operator axle (labeled 95): 95
- Distance from bottom edge of lintel to center of operator axle (labeled 45): 45
- Distance from bottom edge of lintel to center of operator axle (labeled 33): 33

**Components and Labels:**

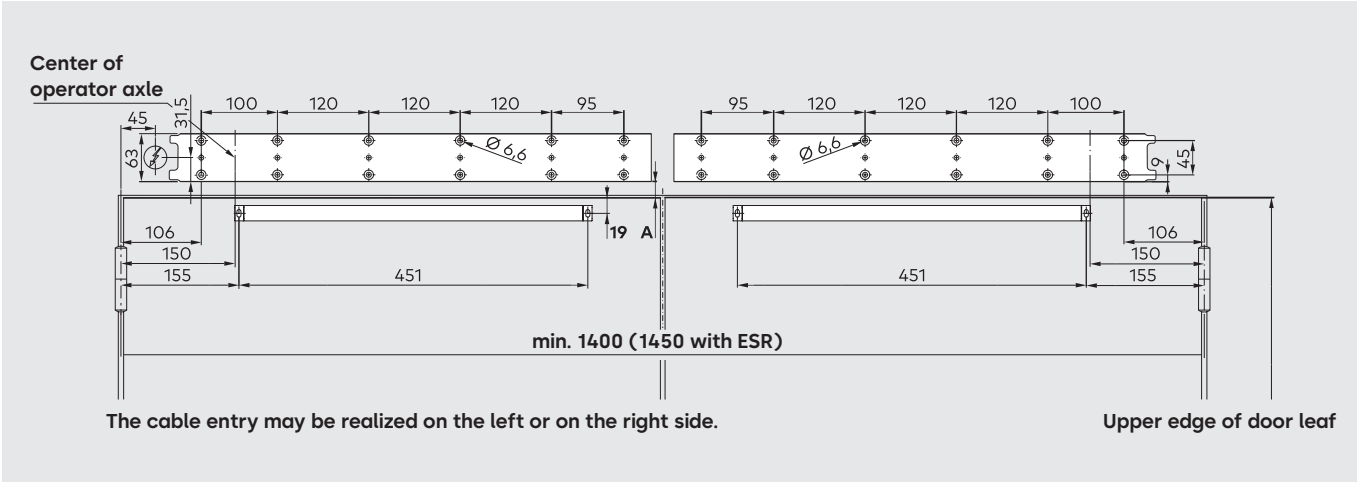
- Center of operator axle
- Bottom edge of lintel
- Ø 6,6 (Bolt diameter)
- A (Label for distance from bottom edge to center of operator axle)

\* only for ED 250

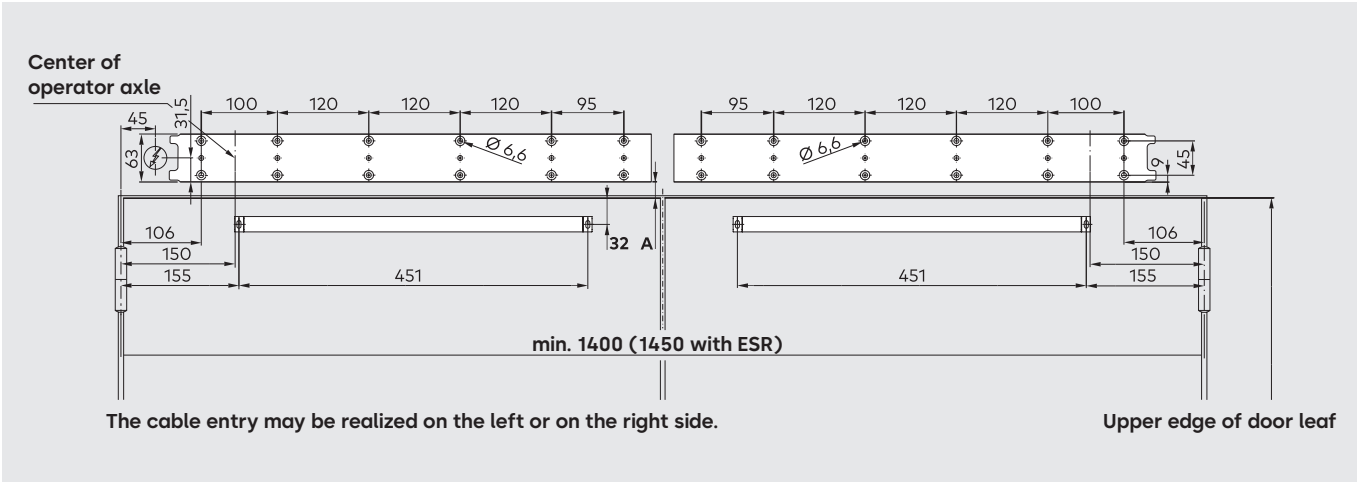
Mounting on hinge side, pull-version with slide channel, cover PROFESSIONAL, standard axle extension



Drilling template: pivot pin short 12.5 mm



Drilling template: pivot pin long 25 mm

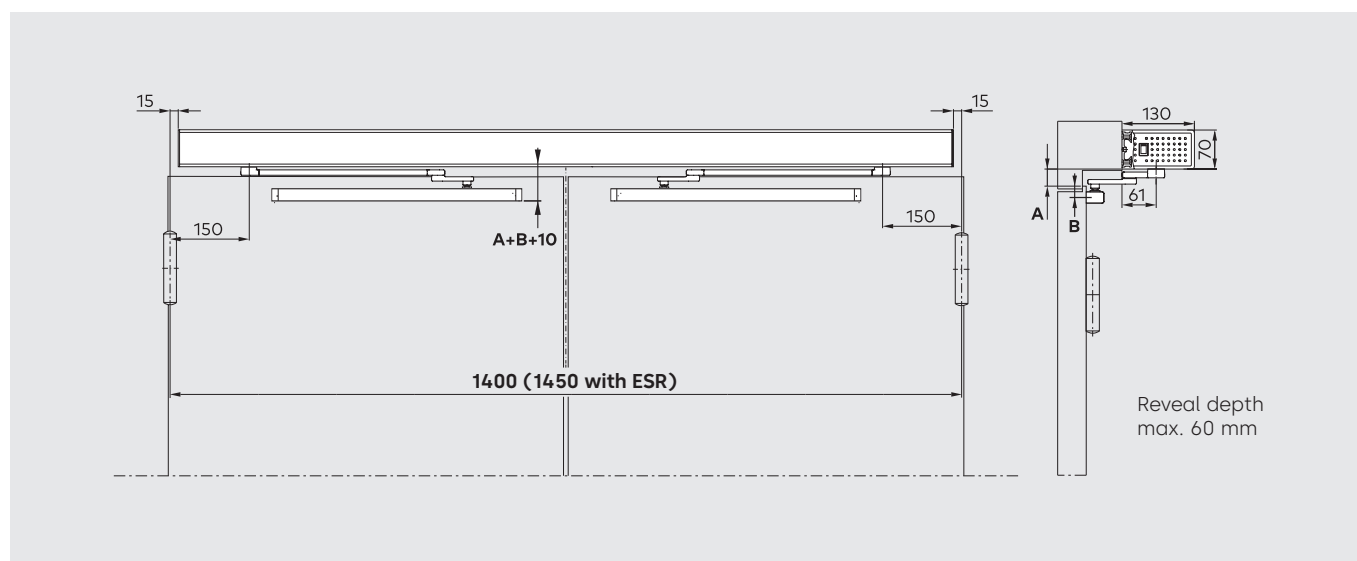


Axle extension	Standard	20 mm	30 mm	60 mm	90 mm*	Pivot pin	12.5 mm	25 mm
A	22 mm	42 mm	52 mm	82 mm	112 mm*	B	19 mm	32 mm

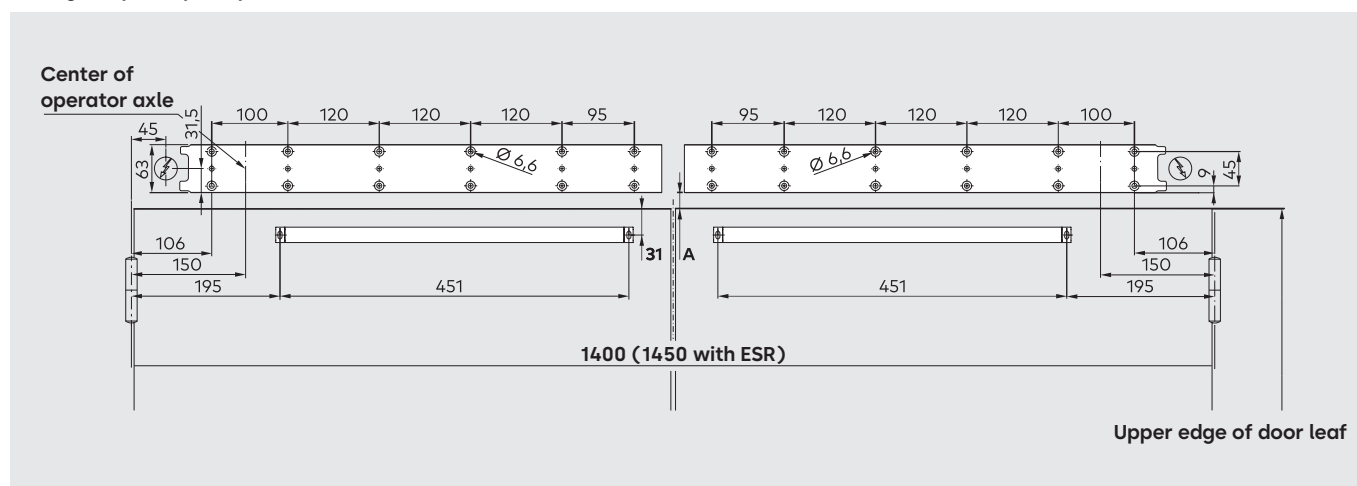
\* only for ED 250



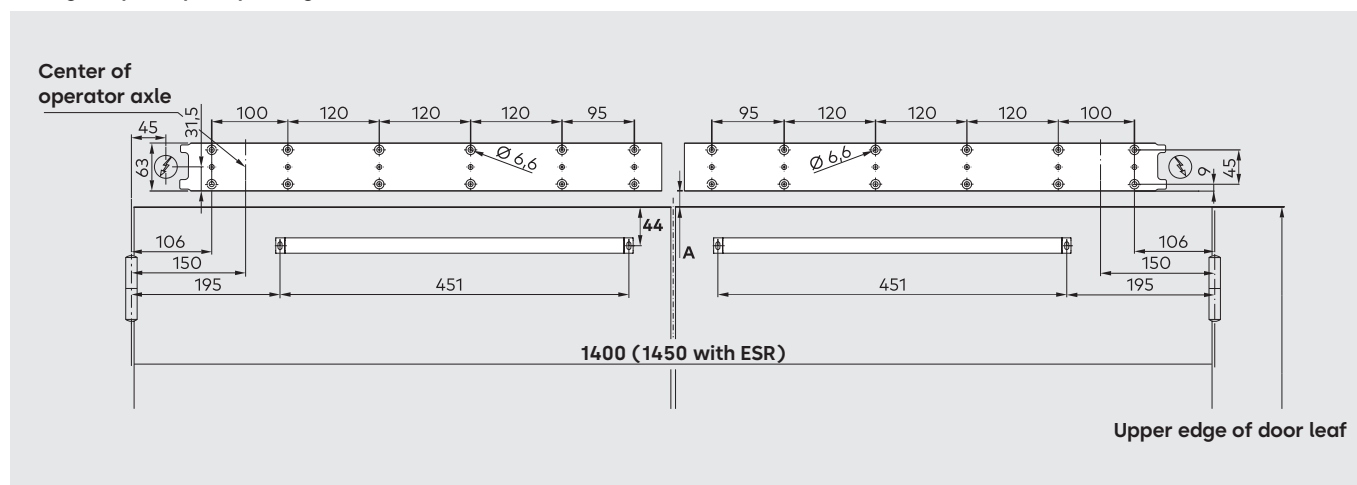
Mounting on hinge side, pull-version with CPD arm, cover PROFESSIONAL, standard axle extension



Drilling template: pivot pin short 12.5 mm



Drilling template: pivot pin long 25 mm

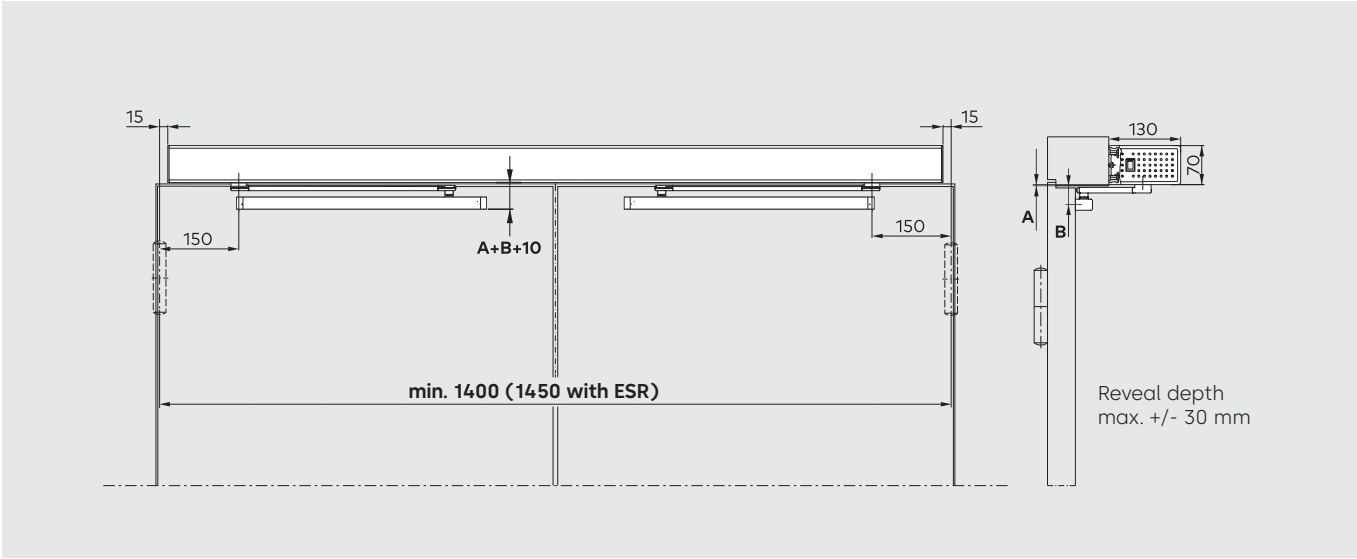


Axle extension	Standard	20 mm	30 mm	60 mm	90 mm*
A	22 mm	42 mm	52 mm	82 mm	112 mm*

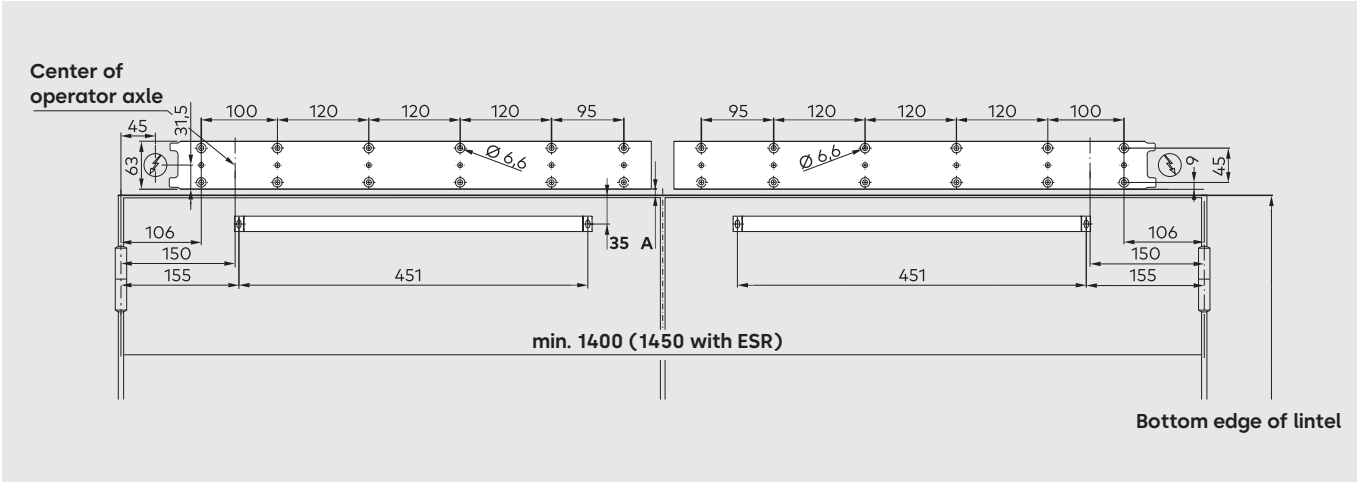
Pivot pin	12.5 mm	25 mm
B	31 mm	44 mm

\* only for ED 250

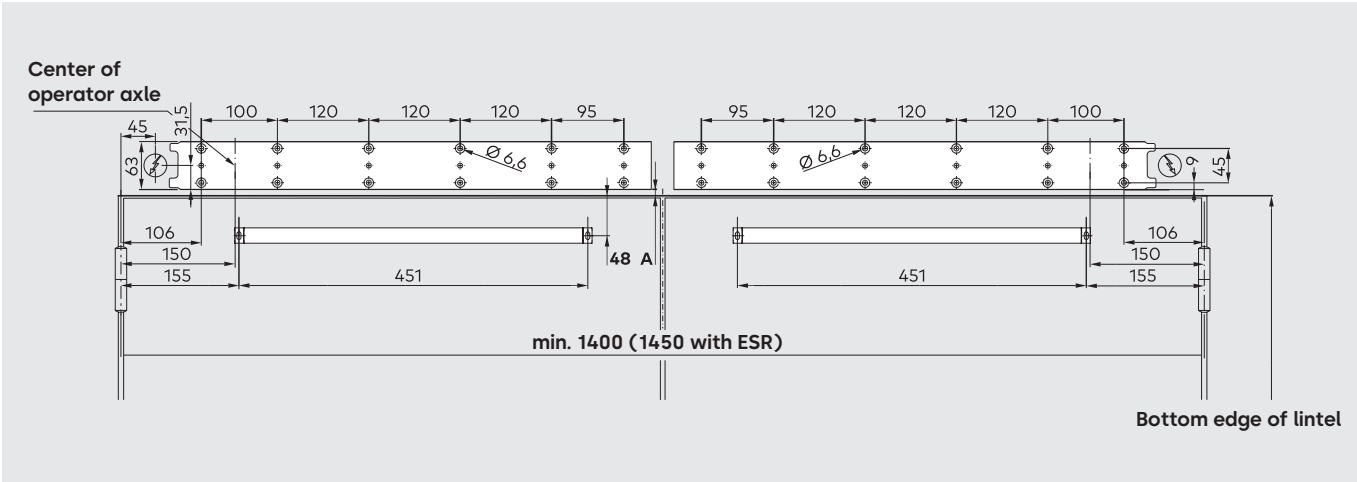
Mounting on opposite hinge side, push-version with slide channel, cover PROFESSIONAL, standard axle extension



Drilling template: pivot pin short 12.5 mm



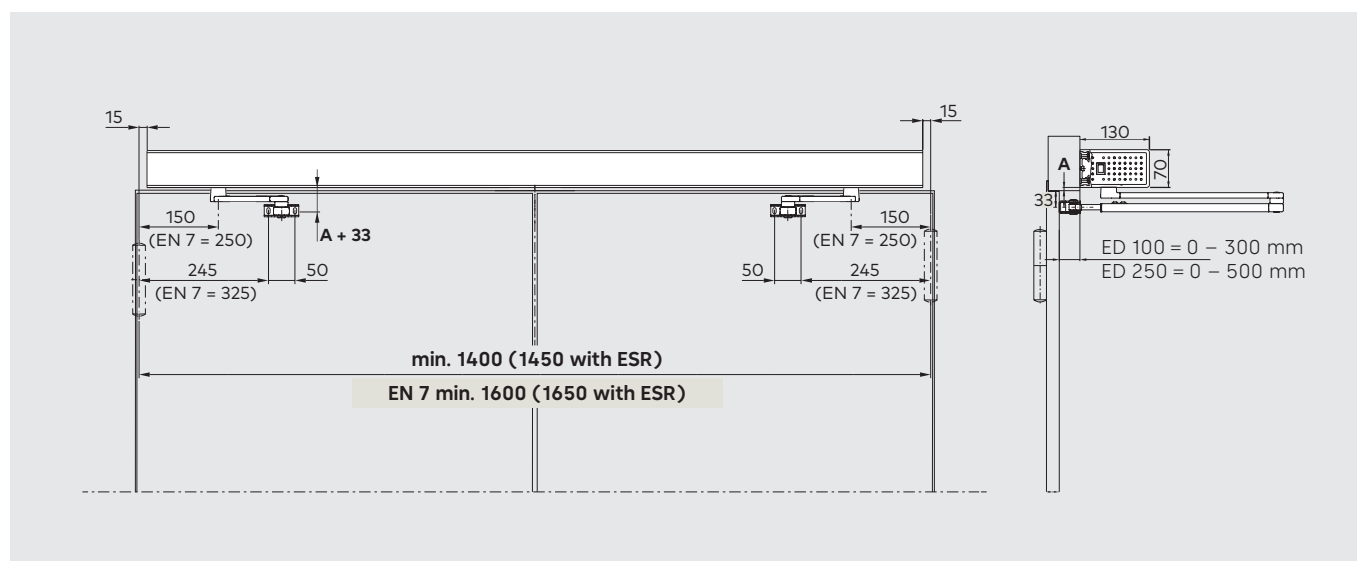
Drilling template: pivot pin long 25 mm



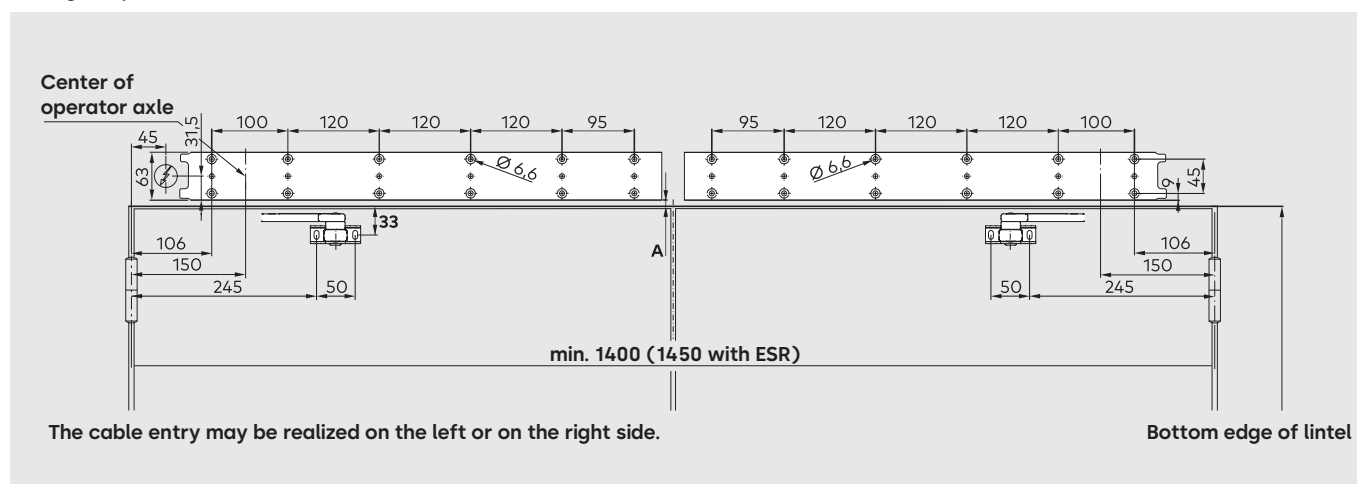
Axle extension	Standard	20 mm	30 mm	60 mm	90 mm*	Pivot pin	12.5 mm	25 mm
A	5 mm	25 mm	35 mm	65 mm	95 mm*	B	35 mm	48 mm

\* only for ED 250

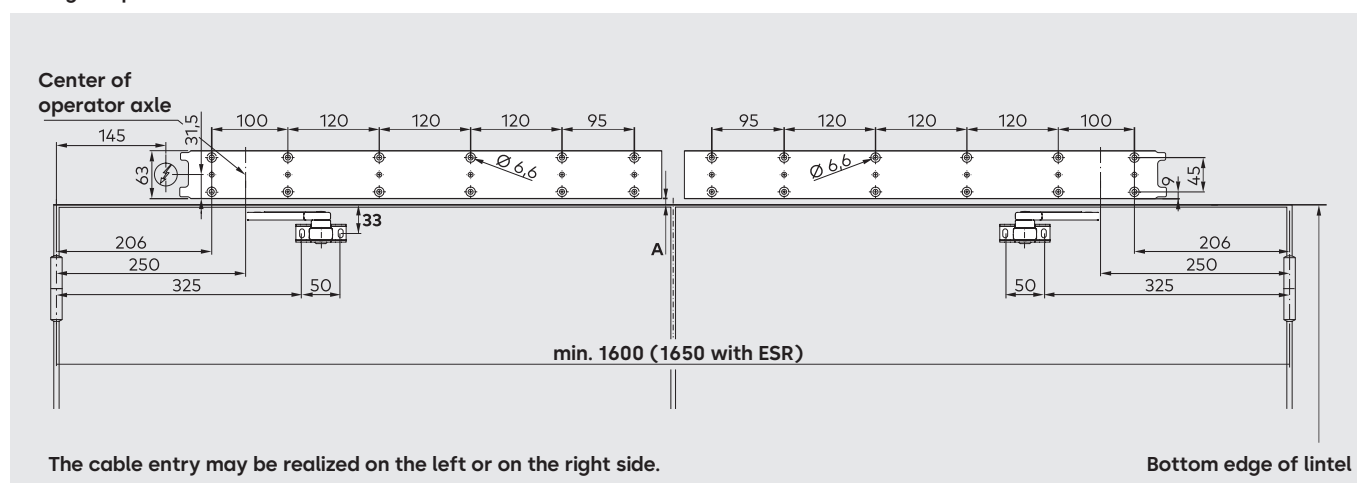
Mounting on opposite hinge side, push-version with arm, cover PROFESSIONAL, standard axle extension



Drilling template: arm EN 3-6



Drilling template: arm EN 7



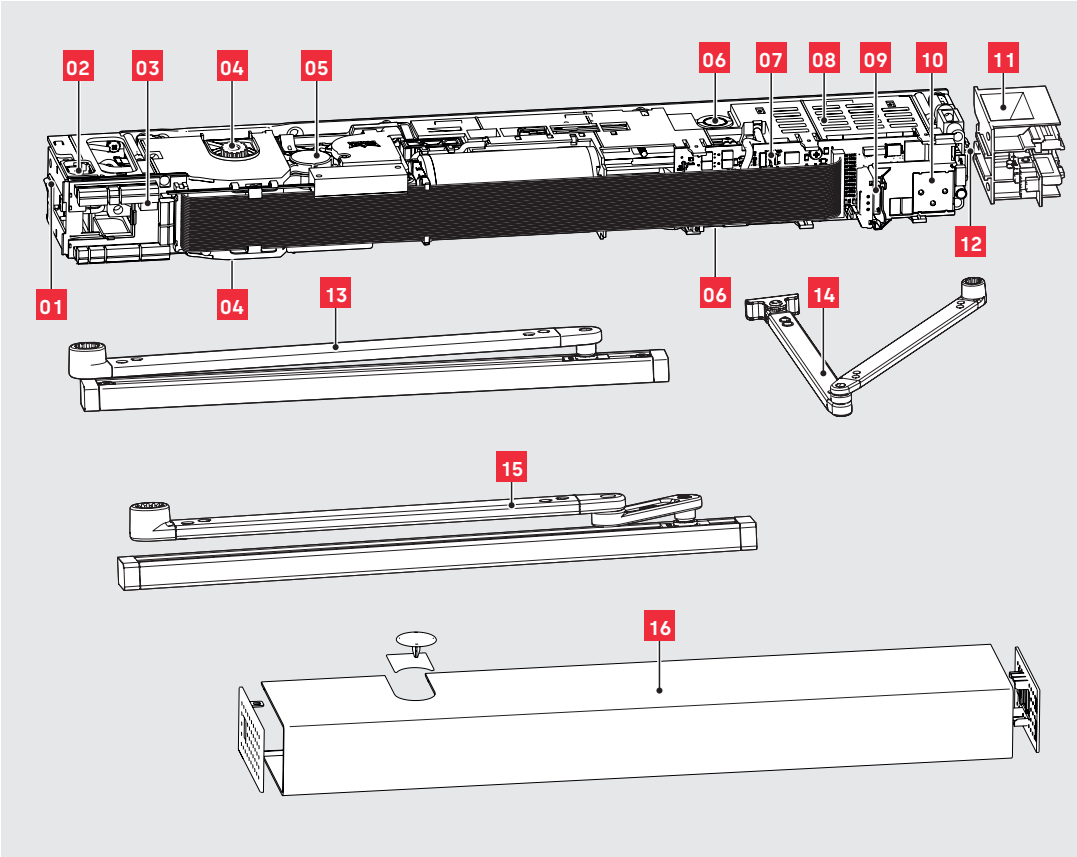
Axle extension	Standard	20 mm	30 mm	60 mm	90 mm*
A	9 mm	29 mm	39 mm	69 mm	99 mm*

\* only for ED 250

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



\*supplied separately

System	Specification	Order No.
ED 100 swing door operator 230 V	EN 2 - 4, push-version, EN 2 - 4, pull-version	29222316
ED 250 swing door operator 230 V	EN 4 - 7, push-version, EN 4 - 6, pull-version	29202316

# Torque overview

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 3	EN 4	EN 4	EN 6	EN 3	EN 4	EN 4	EN 7
Manual closing torque (Nm)***	18	37	26	65	18	37	26	90
Automatic closing force (N)**	20	FE: 150 LE: 67	20	FE: 150 LE: 67	20	FE: 150 LE: 67	20	FE: 150 LE: 67
Manual opening torque (Nm)	40	50	55	85	40	55	60	90
Automatic opening force (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.

## Evacuation function EVAC

Swing door operators are switched off in the event of an alarm and can only be accessed manually. Especially with heavy doors, barrier-free access is then no longer possible. When the EVAC function is activated, the drive does not switch off completely in the event of an alarm, but deactivates the motion detectors and optionally the safety sensors and switches from full to low energy

mode. The power-assist function can now be used without safety sensors to ensure barrier-free access. In addition, a time-limited automatic opening via the night/bank signal is possible for 20 seconds. To use the EVAC function, one Upgrade Card PROFESSIONAL is required per drive. The EVAC mode can be activated via feedback contact 43/3. The triggered function is indicated internally with IN18.

## Smoke Pressure Ventilation (SPV)

Doors are often exposed to pressure differences. Particularly in combination with smoke extraction and pressure ventilation systems, large loads are generated which cause doors to no longer open or close properly. The SPV function provides an additional set of parameters that can be set with the hand-held terminal in order to optimise the operator parameters the operator parameters to

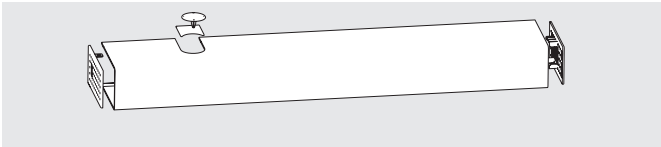
the pressure conditions prevailing in the event of an alarm. To use the SPV function, the Upgrade Card PROFESSIONAL is required for each drive. The SPV mode can be activated via feedback contact 43/3. The triggered function is displayed internally with IN19. The SPV-relevant parameters are set via the hand-held terminal.

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.

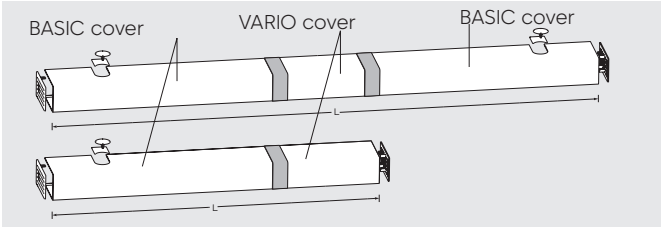
When creating double systems, the four-position internal program switch has to be replaced by a three-position switch, which means that the exit only function is only available in combination with the external program switch. Double-leaf systems are required for doors where the clearance between the hinges exceeds 1,400 mm (1,450 mm with ESR).

ED BASIC cover – Aluminum cover for single swing door systems



	Color	Order No.
ED BASIC cover	silver	29241001

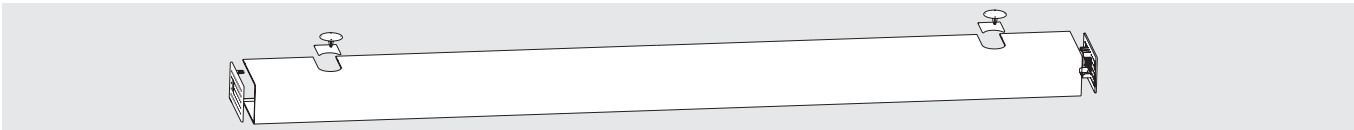
ED VARIO cover



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.

	Color	Order No.
ED VARIO Cover	silver	29242002

ED PROFESSIONAL cover

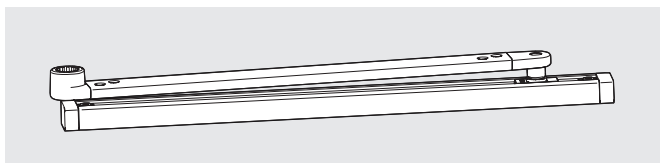


This aluminum cover is designed to create double-leaf swing door systems. The ED PROFESSIONAL cover is a continuous and seamless cover and available in lengths from 1,400 mm (1,450 mm with ESR) to 3,200 mm. With the PROFESSIONAL cover, also single operator may be extended to a length of up to 3,000 mm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

	Color	Order No.
ED PROFESSIONAL cover	silver	29243001

## Arms

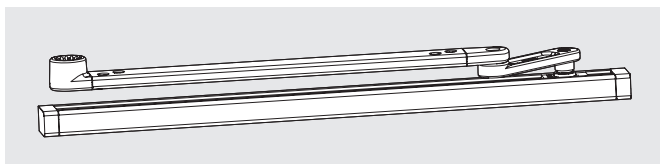
### ED slide channel set



ED 100 and ED 250: For reveal depths  $\pm 30$  mm

Mounting version	Color	Order No.
Pull- and push-version	silver	29275021

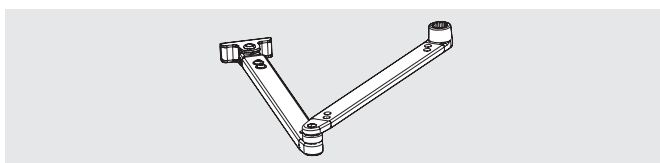
### ED slide channel set CPD



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

Mounting version	Color	Order No.
Pull-version	silver	29276021

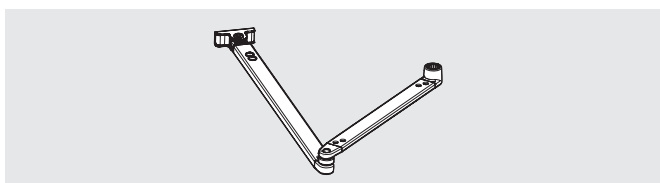
### ED standard arm 225



ED 100 and ED 250: For reveal depths 0 – 225 mm  
EN 7: For max. reveal depths 125 mm

Mounting version	Color	Order No.
Push-version	silver	29271021

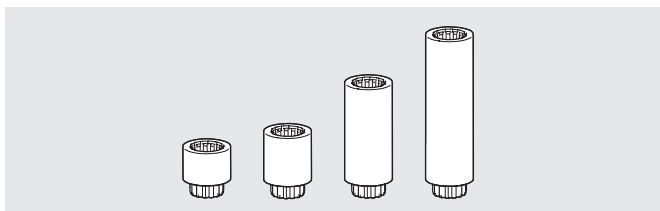
### ED standard arm 500



ED 100: For reveal depths 226 – 300 mm  
ED 250: For reveal depths 226 – 300 mm und 400 kg, for reveal depths 301 – 500 mm und 160 kg

Mounting version	Color	Order No.
Push-version	silver	29272021

### ED axle extensions



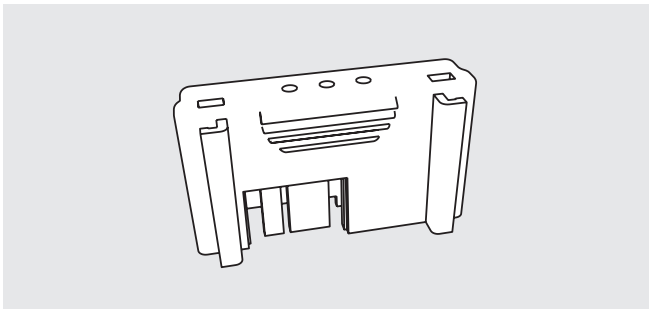
The axle extensions 20, 30 and 60 mm are suitable for all arm versions of the ED 100 & ED 250. The axle extensions 90 mm is only suitable for all arm versions of the ED 250.

The axle extensions are available in chromated black.

ED axle extension	Order No.
20 mm	29278012
30 mm	29278013
60 mm	29278016
90 mm	29278019

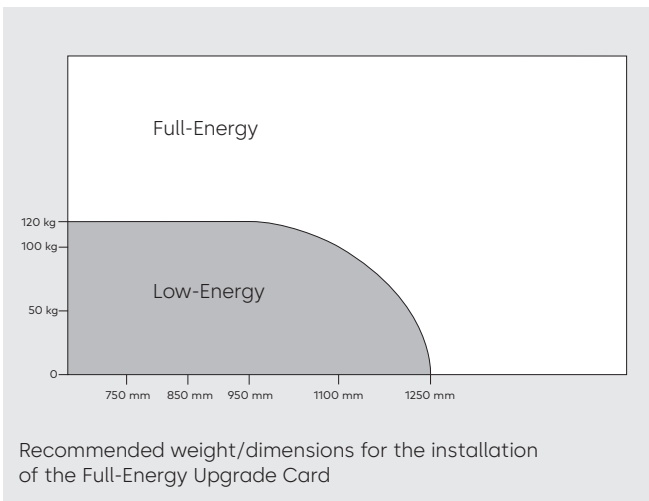
## dormakaba Upgrade Cards

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).



ED Upgrade Card Full-Energy	Color	Order No.
ED 100	blue	29251022
ED 250	blue/ transparent	29251020



### 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

### Evacuation function EVAC

In the event of an alarm, e.g. if a fire alarm system is triggered, the EVAC function is activated via the feedback contact 43/3 on the ED100/250. The drive switches to door closer mode (hd =1) and the motion detectors and optionally the safety sensors are deactivated. If active, the drive is switched from Full Energy mode to Low Energy mode. The door can now be accessed via Power Assist or via night/bank impulse with an open time of max. 20 seconds. The internal display shows the function with IN18. After resetting the fire alarm system, the EVAC function is deactivated and the operator returns to normal operation. When used on a 2-leaf door, both drives must be configured separately from each other. The EVAC function is enabled on both drives either via the handheld or via parameter F6 on the internal display. The alarm signal via the feedback contact 43/3 must be present on both drives.

### Smoke extraction/pressure ventilation function SPV

When a higher-level system is triggered, the SPV function is activated via the feedback contact 43/3. The display shows IN19. When the SPV function is activated, additional parameters can be set via handheld terminal. This includes opening and/or closing the door with increased force up to max. 200N. The latching action, the locking force and the pressure time can be set, as well as the speed at which the door opens and/or closes. After resetting the higher-level system, the SPV function is deactivated and the drive returns to normal operation. When used on a 2-leaf door, both drives must be configured separately from each other. The SPV function is enabled on both drives either via the handheld or via parameter F6 on the internal display. The alarm signal via the feedback contact 43/3 must be available on both operators

## Barrier-free toilet

### Barrier-free solutions for people with disabilities (PWD)

Planning and designing buildings with foresight means ensuring accessibility and openness for all and where everyone can use the facilities without restrictions or the need for outside help.

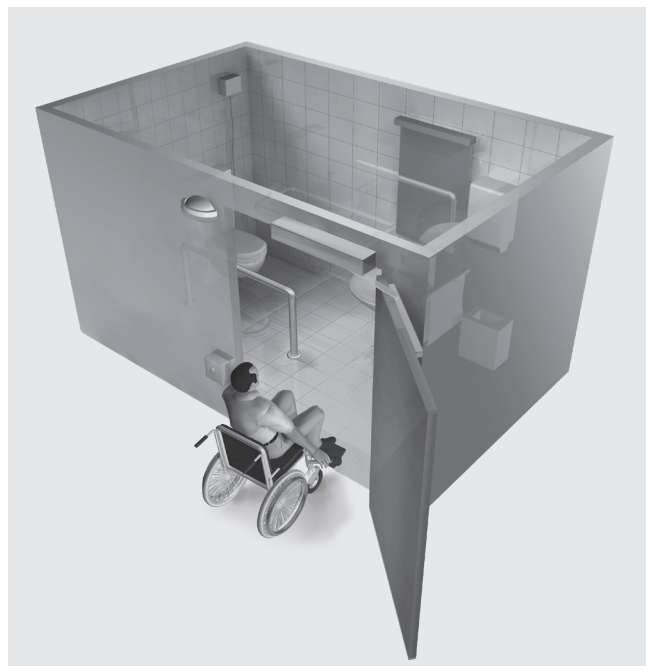
The dormakaba Privacy Door System (PDS) provides unhindered automated access for people with impairment. The PDS can be fitted to either swing or sliding door operators depending on the required design applications.

The PDS offers the following features:

- Simple to use (amenities and parent rooms)
- Flexible design (sliding or swing)
- Robust and reliable operation
- Braille and tactile signs
- Surface mount or cavity slide
- Electric lock with door closed function
- Built in or key switch staff override function for use in emergency
- MLAK braille plate option

The PDS complies with the following:

- NCC Access for people with a disability
- Braille and tactile signs
- AS5007-2007 Power doors for pedestrian access and egress



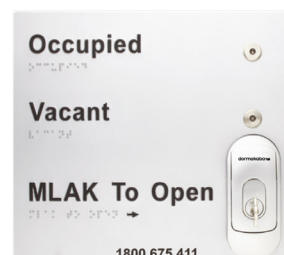
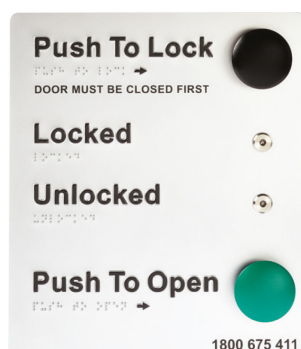
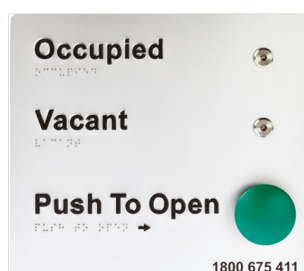
### Plate Features

The internal/external mounted PDS plates are designed using a polycarbonate membrane that is vandal resistant, UV stabilised and anti graffiti coated.

The **MLAK-PDS** plate option is an innovative system that enables people with disabilities to gain 24/7 access to a network of public facilities that utilise this system.

### PDS Operation

- When vacant green indicator illuminated, press the outside Push to Open button or Insert MLAK Key to activate and open the door
- Once inside press the Push to Lock button to secure the door (outside button switched off and Occupied red indicator is now illuminated)
- To exit simply press the Push to Open button



### External Plate

Included on the plate is a solid push button and stainless steel housed red/ green indicators providing a wide viewing angle and IP67 rating. (205mm H x 230mm W)

### Internal Plate

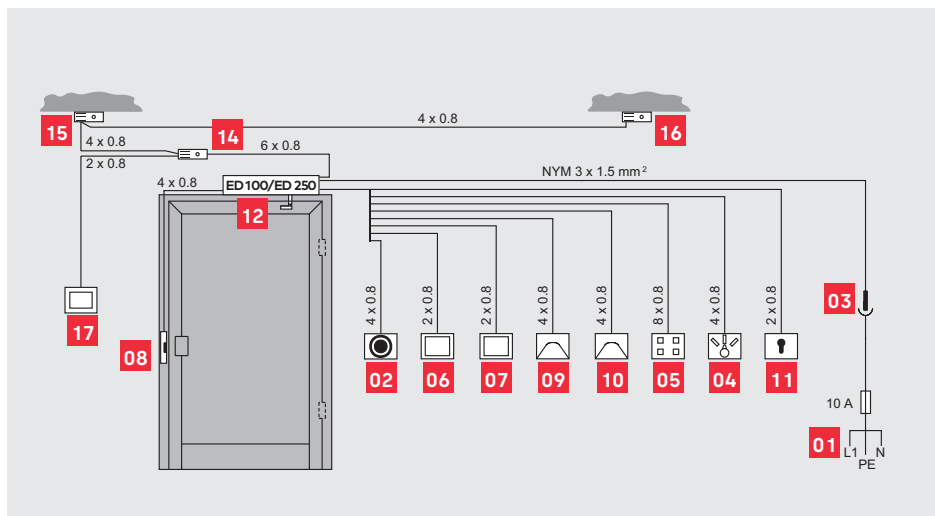
Included on the plate are solid push buttons and stainless steel housed red/ green indicators providing a wide viewing angle and IP67 rating. (265mm H x 230mm W)

### External Plate MLAK (option)

Included on the plate is the Prestige Key switch keyed to the MLAK and stainless steel housed red/ green indicators providing a wide viewing angle and IP67 rating. (205mm H x 230mm W)

# Wiring diagrams

## ED 100 & ED 250 single doors

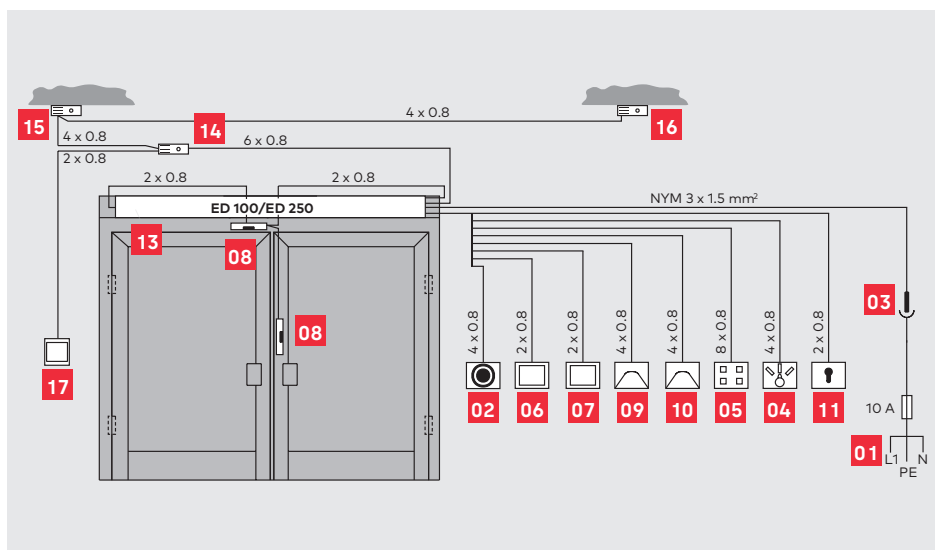


### Connections

- 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 inside
- 19** Red-green display outside

\*not necessary with integrated smoke detector

## ED 100 & ED 250 double doors



## Program Switches

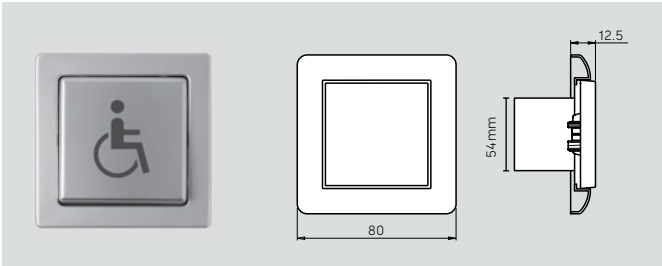
The dormakaba Prestige Key switch range provides an aesthetically pleasing option for key activation of any dormakaba automatic sliding or swing door operator. Its low profile modern design and secure cylinder retention along with concealed fixings make this switch the perfect choice for both internal and external applications.

### PK Switches Series Key Switches



Program switch		Color	Order No.
PK2	2 mode	SAA (silver)	9400000007052
PK4	4 mode	Transparent black / SAA	9400000007054

### Pushbutton



	Color	Order No.
Palm activated rocker button	stainless steel	94000000011380
Handicap symbol	stainless steel	94000000011379

IP44-weather rating

### Emergency power supply unit



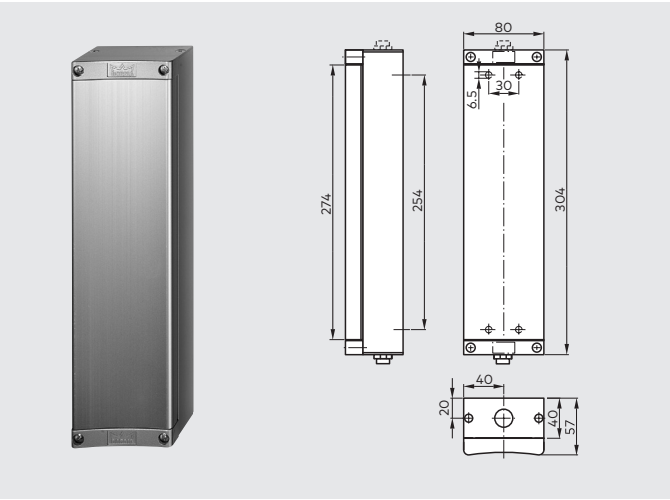
In order to provide full automated operation even in the event of a power failure an emergency power supply unit can be fitted. Depending on the connected accessories, this unit may keep the system operational for up to one hour by providing emergency power supply for the complete door system. Thus, there is sufficient time for countermeasures and securing the building.

Dimensions:  
160 x 120 x 360 mm (H x W x D)  
\*subject to change depending on model supplied

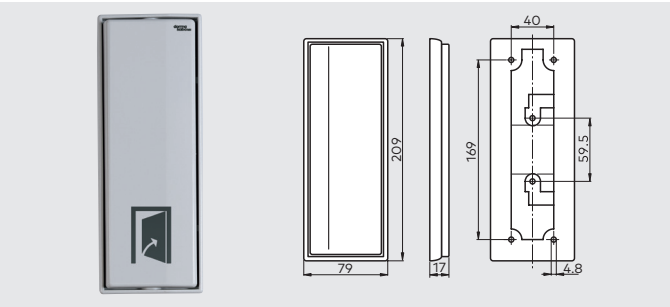
	Order No.
UPS 650VA	94000000013890

# Pushbuttons (elbow)

Large-sized pushbutton (elbow)

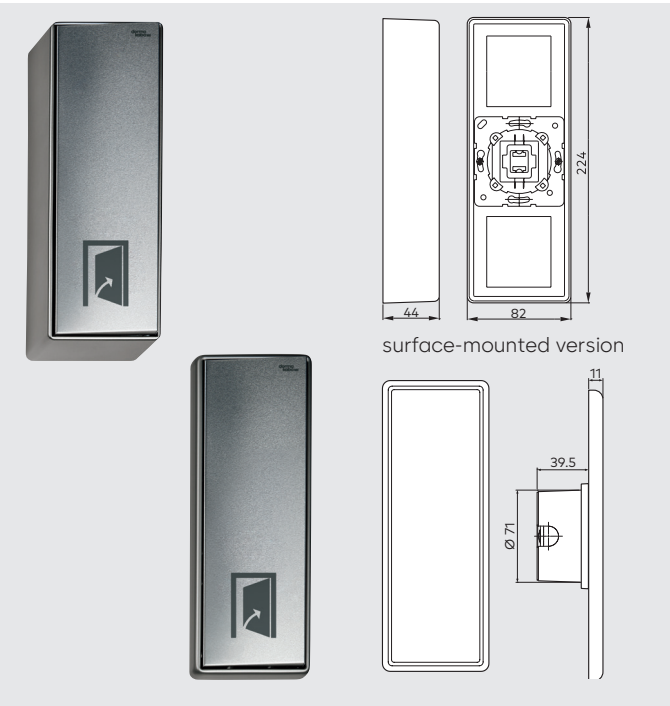


	Color	Order No.
Flush-mounted version/ surface-mounted version, 304 x 80 mm	silver-colored	90410015



	Color	Order No.
Surface-mounted version, flat design, plastic, 209 x 79 x 17 mm	grey	05080231332

Large-sized pushbuttons



Large-sized pushbuttons	Color	Order No.
With box for flush-mounting, without switch pad, incl. switch, 224 x 82 mm	silver-colored	5095531332
With box for surface-mount- ing, without switch pad, incl. switch, 224 x 82 x 44 mm	silver-colored	5095231332

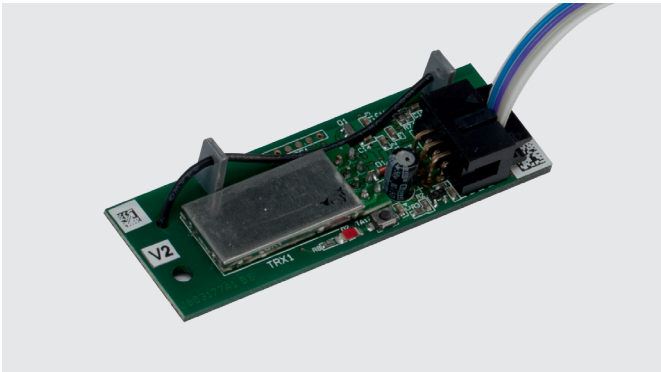
Switch pad	Order No.
Stainless-steel, suitable for surface-mounted version/ flush-mounted version, 214 x 70 mm	5095431332

## 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	29301005

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

### BRC-H 3

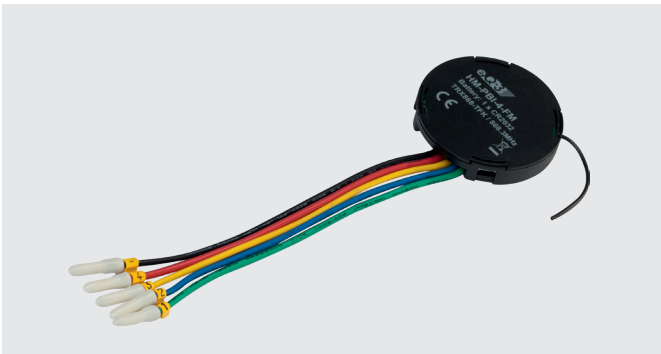


Bidirectional hand-held transmitter BRC-H, battery-operated, 4 channels, LED for feedback purposes, shockproof design.

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

## 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)

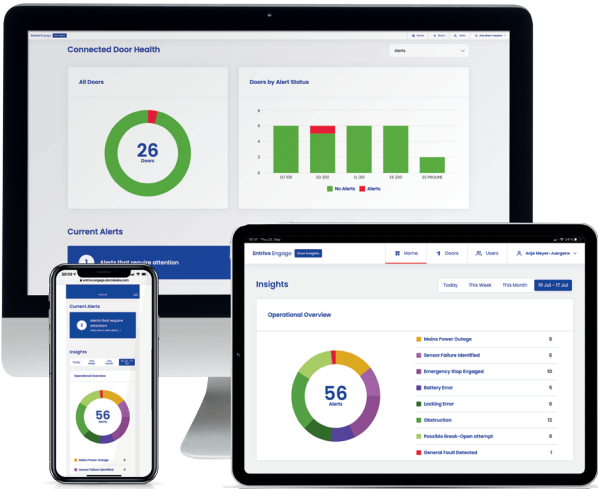
	Description	black	silver
<b>Flatscan left</b>	1 sensor DIN left	940000003448	9400000011470
<b>Flatscan right</b>	1 sensor DIN right	940000003449	9400000011471

Further accessories

Entrivo Door Insights

Entrivo Door Insights provide real time monitoring of your ED 100 and your ED 250 automatic swing door operator. Receive notifications via SMS, Email or in App to easily monitor and manage connected doors. Entrivo Door Insights offers a more efficient, informed, and cost-effective door management solution.

	Order No.
Entrivo Kit	9400000015442





## The benefits of a dormakaba service plan

A building that is in active use requires a surprising amount of maintenance to keep things running smoothly. Regular maintenance and checks ensure that your doors are always up to date and that failures are effectively prevented. We help you take care of access in your building with our safe, simple service.



### 24/7 rapid assistance

We provide quick, hassle-free support in case of malfunctions.



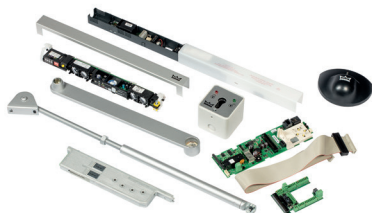
### Always near

Local presence.



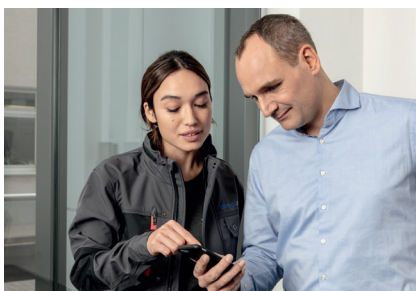
### Dedicated

Team of fully trained and equipped experts.



### Quick spare parts supply

Efficient supply chains always ensures high availability and quick delivery times.



### Up-to-date

Consulting on modernization and upgrades.



### Independent support

State-of-the-art-equipment.







Door  
Hardware



Electronic  
Access & Data



Mechanical  
Key Systems



Lodging  
Systems



Entrance  
Systems



Interior Glass  
Systems



Safe  
Locks



Service

## Our Sustainability Commitment

We are committed to fostering a sustainable development along our entire value chain in line with our economic, environmental and social responsibilities toward current and future generations.

We seek an open, transparent dialogue with all stakeholders to define strategies and actions based on clear targets and continuous improvement, and we actively report on our progress.

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