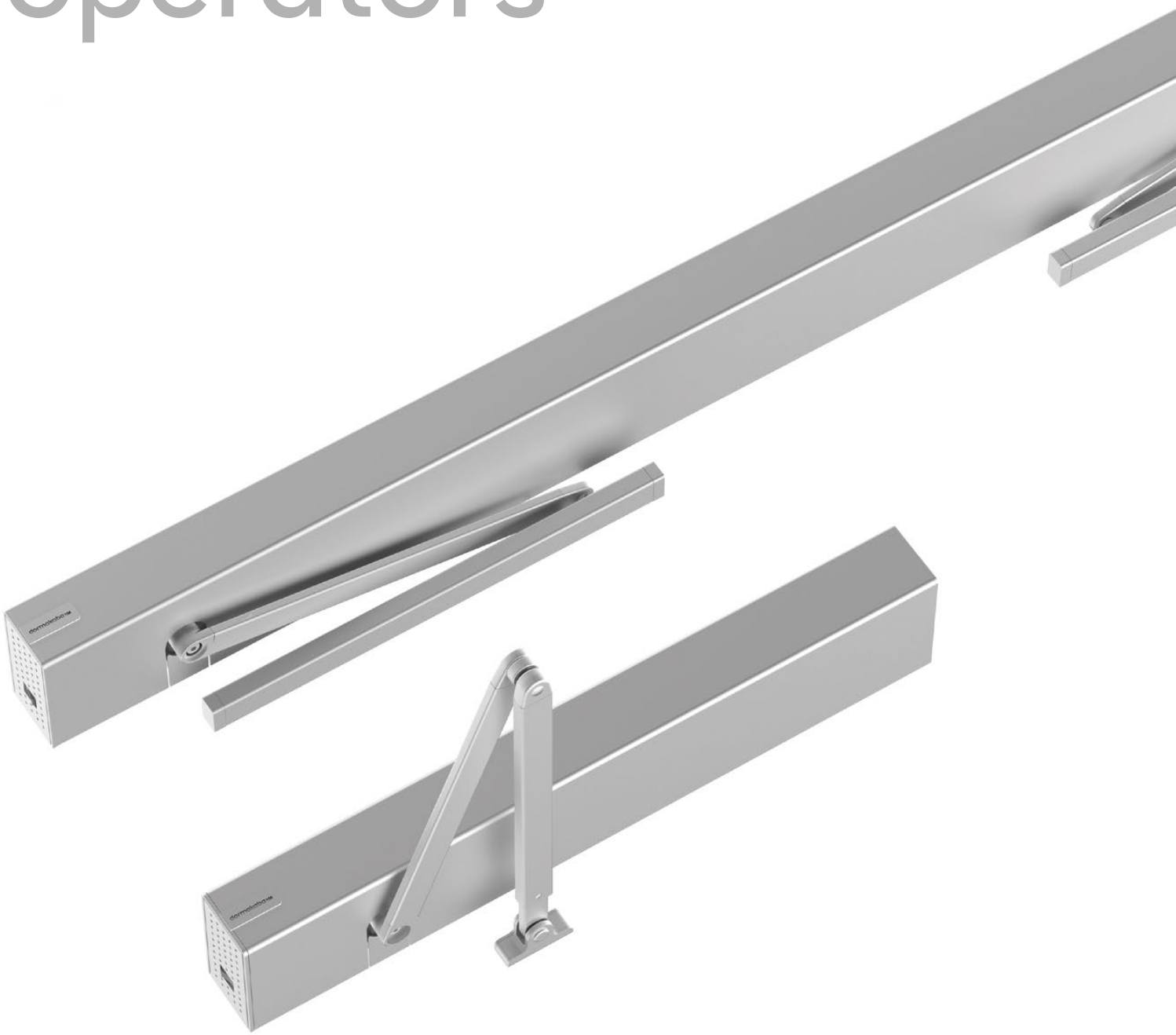
dormakaba

ED 100 / ED 250

Swing door operators



Technical product brochure

01

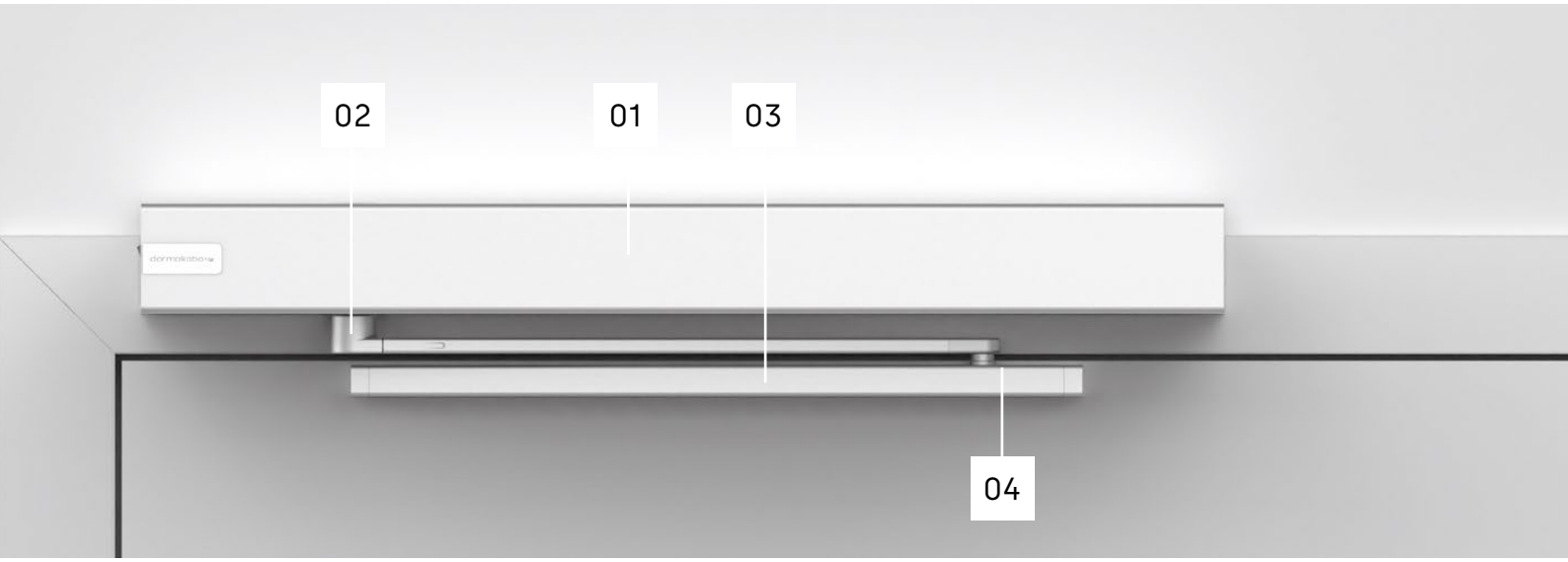
02

03

01 Outwards opening 2-leaf door system with ED 250 (escape route)
02 Barrier-free access with ED 100
03 ED 250 door system with MotionIQ door control

Modular ED door operators are the ideal solution for a wide range of applications: internal and external doors with a door leaf weight of up to 400 kg or a door leaf width of 1,600 mm, glass doors, fire doors, escape route doors, and much more.
The wide range of customisable functions of the ED door operators provide an elegant and easy option for realising simple and complex requirements.

Slim exterior: Reduced, compact design with an operator height of only 70 mm



01 **Operator cover:** available in different designs, colours and lengths
02 **Operator spindle:** customisable with extensions to the individual installation situation
03 **Door connection:** executed as slide channel, CPD slide channel or scissor arm
04 **Pivot pin:** available in two lengths for slide channels
05 **Operator:** choice of two capacity versions: ED 100 or ED 250

Elegant appearance
The ED operators combine elegant design and innovative technology at the highest level. Their exclusive design not only ensures an aesthetically appealing appearance, but also the space-saving integration into any door situation.

- Slim design with an operator height of only 70 mm
- Silver and white as standard colours or special colours on request
- The operator covers are available in fixed standard lengths, pre-assembled in customised lengths or can be adapted on site.

06

06 **Operator with slide channel:** standard version in white
07 **Operator with arm:** version in white with integrated smoke detector/smoke detection control
08 **Operator with CPD arm:** version with door coordinator for 2-leaf door system in silver, with Vario cover and integrated smoke detector/smoke detection control.

05

Proven silent technology

The proven operator mechanism using force balancing technology is the key to reliable and silent operation.

- Operator units with two torque levels ED 100 or ED 250, depending on door leaf size and weight
- Multi-stage operator:
  - optimum torque even under changing condition, e.g wind loads
  - optimum durability and long service life, as only the required torque level is generated
- Noise-optimised design

Modular configuration

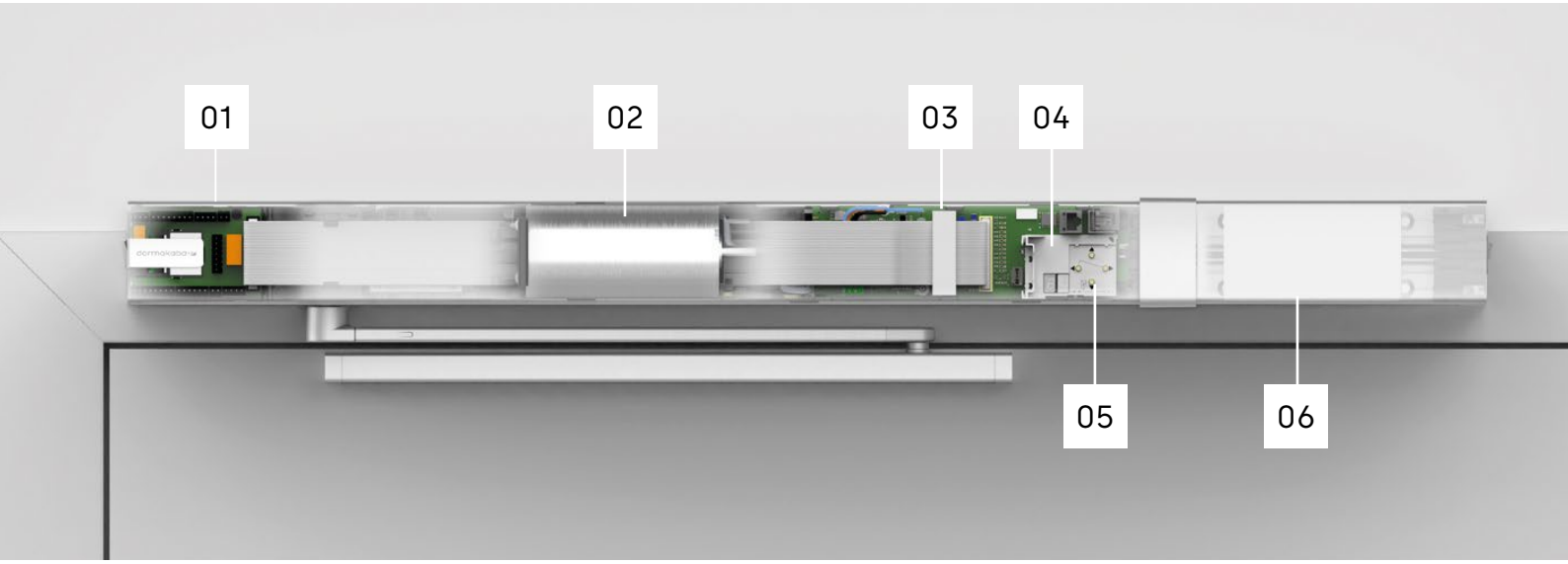
The modular design of the ED operators allows for a wide variety of solutions.

- ED 100 operator for doors with a maximum width of 1,100 mm and ED 250 operator for large doors with a maximum width of 1,600 mm
- Two single operators can be configured to for a 2-leaf door operators. The closing sequence is coordinated by the control unit or the ESR door coordinator.
- Depending on the operating mode “Pull door” (“hinge side pull version”) or “Push door” (“Opposite hinge side push version”) and the lintel depth on site, installation on the door will be realised with slide channel or arm.
- Smoke detector with smoke detection control or emergency power supply can be integrated in the cover.

07

08

Valuable details inside:
A functional solution for every requirement



01 Connection unit: central connection print
02 Power supply unit, motor and operator: two performance classes ED 100 or ED 250
03 Control board: two performance classes ED 100 or ED 250
04 Slot for upgrade cards: customising the range of functions
05 Operator interface: easy set-up using information display
06 Extension option: integrated emergency power supply or integrated RMZ smoke detection control with RM smoke detector

All basic functions are included as standard
The ED operators can be used as door closers, as fully automatic operators or for assisted opening. The standard version (low-energy operation) has all the important functions for the safe operation of an automatic door system integrated.

Easily extend functions as required with upgrade cards
Depending on the area of application, higher speeds, special connection options or predefined function profiles may be required. The ED operators' range of functions can be easily customised with plug-in upgrade cards.

External components for control and monitoring
External components can be connected to the central connection print. The connection options are diverse: from a simple manual release pushbutton for automatic door opening to a complex control for interlocking door systems in escape routes – ED operators have an open design with many interfaces.

Integrated expansion options ED UPS emergency power supply or RMZ smoke detection control with RM smoke detector
The expansion options are integrated in an extended operator cover. In addition to the appealing overall design of the system, installation and commissioning are also simplified by components.

Which functions are required?

		Standard Low-energy operation	**Extended functions with upgrade card**
Automatic opening	Opening signal in the door zone via radar sensor with pre-set opening speed and door open time	●	
	Opening signal in the extended door zone (up to 10 metres) by detecting the intention to access, individually calculated optimum opening time and hold-open time based on the movement patterns in the extended door zone (MotionIQ door control with M A01 radar sensor)	with CAN connection unit	
	Opening signal by manual release pushbutton, key switch, remote control, telephone and speaker systems, etc.	●	
	Opening signal by "tapping" the door (push-and-go function)	●	
	Opening signal by access control (night/bank function), e.g. card reader, coding switch, biometric, etc.	●	
	Adjustable opening speed (consider risks according to EN 16005)	up to 27°/ sec.	**A or B** up to 60°/sec.
Servo-controlled opening	Barrier-free access according to DIN EN 1154 (Power Assist function)	●	
Manual opening	Without operator assistance (operator off)	●	
Automatic closing	Adjustable closing speed (consider risks according to EN 16005)	up to 27°/ sec.	**A or B** up to 60°/sec.
	Adjustable end stop strength	●	
	Door closer mode	●	
Opening/closing forces	Automatically adjustable opening and closing force (wind load control)	max. 67 N	**A or B** max. 150 N
	Door closer mode (closing of door via spring without operator assistance, no reversing on obstacle detection)	●	
	Automatic mode (closing of door via spring with operator assistance, reversing on obstacle detection)	●	
	Temporarily increased force up to max. 200 N (see SPV special function)		**A and C**
Hold-open time	Adjustable hold-open time	max. 30 sec.	**C** max. 180 sec.
	Permanent open via program switch	●	
	Permanent open via pulsed switch (On/Off, flip-flop function)		**C**
Locking	Manually with mechanical lock (operator is off)	●	
	Automatically in conjunction with optional analogue motorised lock, electric door opener, holding magnet or the like	●	
	Connection of optional DCW® motorised lock or DCW® door lock		**D**
	Automatic re-locking after power failure	●	
Door zone safeguard	Simple in case of blocking	●	
	Obstacle detection with optional sensor system	●	
Operating unit (for selection of operating mode, e.g. Off, Automatic or Permanently open)	Internal program switch integrated in the end cap of the cover	●	
	External program switch, mechanical or electrical	●	
	Door Pilot app	●	
	CAN program switch (only available with CAN connection unit)	●	
	ST 32 DCW® key switch: Off, Automatic, Night/bank pulse		**D**
	Remote control via TMS-Soft as part of a SafeRoute door system		**D**
Special functions			
Barrier-free toilet	Pre-configured control unit to connect motorised lock, status indicators and hand switches		**E**
Fire protection	Disabling the automatic function and automatic closing of door by connected external or integrated RMZ/RZ smoke detection control		**B**
EVAC evacuation function*	In the event of a fire, the door closes and switches to door closer mode and low-energy operation. Access is possible via Power Assist function and opening pulse by pushbutton.		**B and C**
SPV (Smoke Pressure Ventilation)	The SPV function allows a second parameter level the system can be switched to as needed to respond specifically to pressure/air flow-related changes.		**A and C or B and C**
Emergency power	Connecting an external or integrated emergency power supply.	●	

Upgrade cards: **A** Full-Energy **B** Fire protection **C** Professional **D** DCW® **E** Barrier-free toilet
* In Germany restricted and only permitted in combination as a hold-open system

Which operator is required?

1-leaf door system

The door leaf is easy to automate using an ED 100 or ED 250 operator, depending on door leaf size and door leaf weight. The range of functions is identical in both ED operator units.

ED 100	EN 3-4
ED 250	EN 4-7*

2-leaf door system

2-leaf door systems require one ED operator for each door leaf. The closing sequence of active and inactive leaf is coordinated by the control unit of the ED operators or the ESR door coordinator. On fire and smoke doors, according to DIN EN 1158 an ESR door coordinator and a MK 396 or MK 397 carry bar must be used.

Fully automated active and inactive leaf

The active and inactive leaf are automated using an ED 100 or ED 250 operator, depending on door leaf size and door leaf weight. The range of functions is identical in both ED operator units.

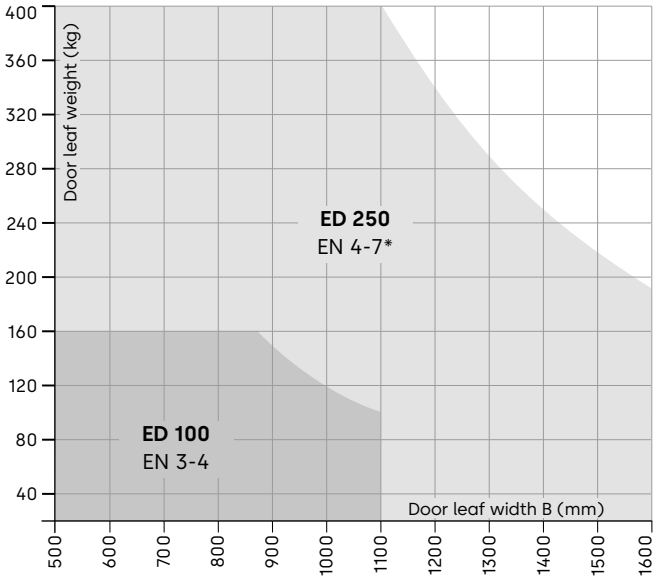
ED 100 active and inactive leaf	EN 3-4
ED 250 active and inactive leaf	EN 4-7*

Fully automated active leaf, semi-automated inactive leaf

The active leaf can be fully automate using an ED 100 or ED 250 operator, depending on door leaf size and door leaf weight. The range of functions is identical in both ED operator units. The inactive leaf can be semi-automated using an ER 250 PA. The following functions are available on the inactive leaf:

- Manual opening
- Servo-controlled opening (Power Assist function)
- Automatic closing
- Permanently open function

ED 100 active leaf	EN 3-4
ED 250 active leaf	EN 4-7*
ED 250 PA inactive leaf	EN 4



ED 100 or ED 250?

Fully automated door systems are available in two performance classes: ED 100 and ED 250. The operators are suitable for most swing doors, provided the ratio of door width and door weight is within the specified functional range in the diagram. The ED operators can either pull or push the door leaves open, depending on the installation side (hinge side: pull version; opposite hinge side: push version).
The ED operators can be combined with a slide channel or an arm, depending on the installation situation. Operator covers are available in different designs, colours and lengths.

The diagram can be used to determine the maximum values for door leaf width or door leaf weight or the matching operator for existing doors. All values refer to an ideal door. With heavy door weights, the achievable speed must be reduced to ensure personal safety. Additional door components such as hinges, seals, locks or other mechanical components can restrict the range of functions. The information provided are valid up to a lintel depth of 300 mm; from 301 mm the maximum door leaf weight for the ED 250 is limited to 160 kg, irrespective of the door width. The door weight calculator[1)] enables detailed door planning.

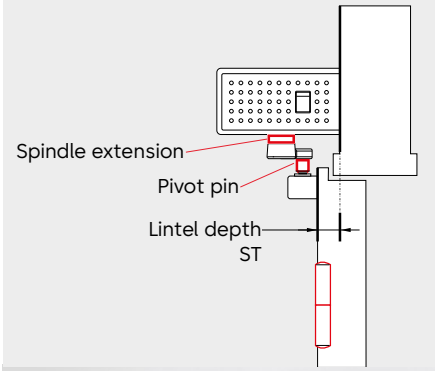
Opening and closing speed up to max. 60°/sec.
The ED operators are supplied set to low-energy mode (low-energy operator). The adjustable opening and closing speed ranges correspond to the limits stipulated in standards DIN 18650 and EN 16005, ANSI 156.19 and BS 7036.
Higher speeds can be set in full-energy mode, requiring the "Full-Energy" upgrade card. In full-energy mode, the door must be equipped with safety sensors.
Opening and closing speed adjustment range

Low-energy mode:	1-27°/sec.
Low-energy mode:	ED 100 up to max. 50°/sec.
	ED 250 up to max. 60°/sec.

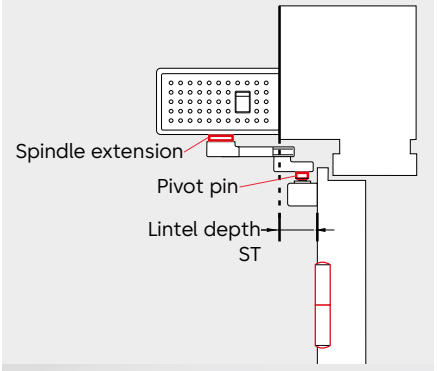
Wind load control with a closing force of up to 150 N
ED 100 and ED 250 operators are especially suitable for applications at exterior doors that are subject to varying wind loads and for interior doors separating rooms where different pressure prevails. While the system is in AUTOMATIC mode, the wind 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.

Where should the operator be installed?

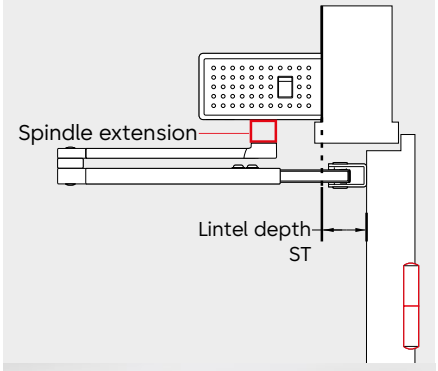
Installation variant hinge side with slide channel



Installation variant hinge side with slide channel with CPD



Installation variant opposite hinge side with ED arm



The ED operator can be installed on both hinge side and opposite hinge side. Depending on lintel depth and position to the door leaf, a suitable combination of slide channel, slide channel with CPD or ED arm, spindle extension and pivot pin variant must be selected.

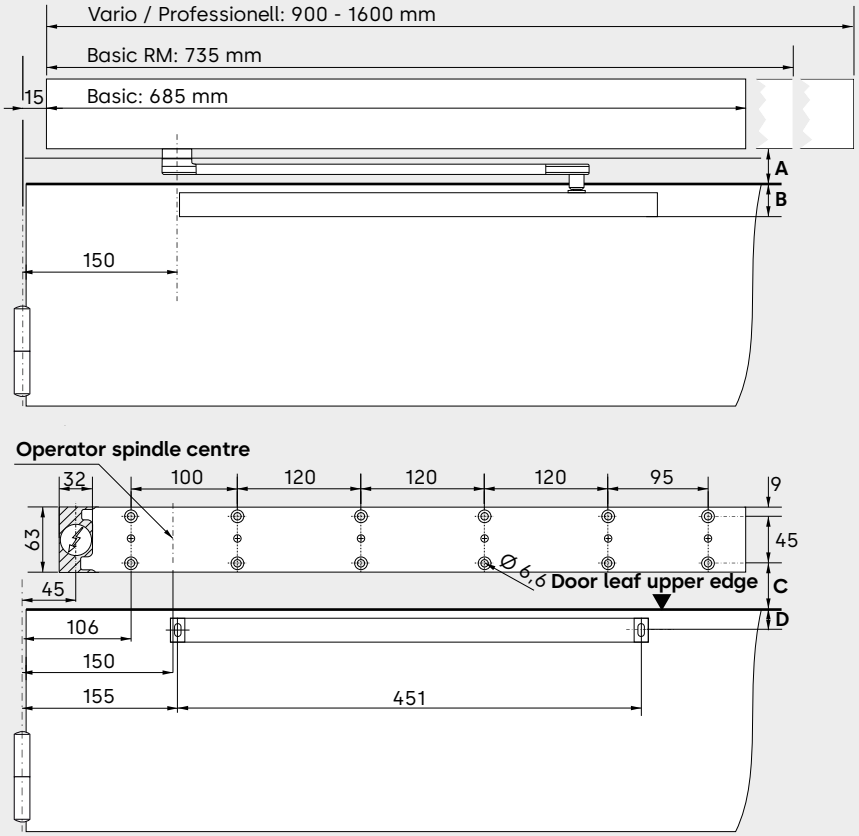
Operator installation on the hinge side (pull version)	**ED 100**	**ED 250**	**ED 250 PA**
Slide channel	ST +/- 30 mm	ST +/- 30 mm	ST +/- 30 mm
Slide channel with CPD	ST 30-60 mm	ST 30-60 mm	ST 30-60 mm
Slide channel with CPD 250	ST 60-250 mm*	ST 60-250 mm*	in preparation

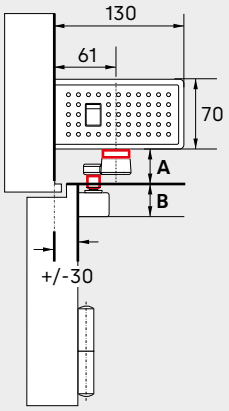
* not suitable for fire and smoke doors with lintel depths greater 100 mm

Operator installation on opposite hinge side (push version)	**ED 100**	**ED 250**	**ED 250 PA**
Slide channel	ST +/- 30 mm	ST +/- 30 mm	ST +/- 30 mm
ED 225 arm	ST max. 225 mm	ST max. 225 mm (EN 4-6) ST max. 125 mm (EN 7)	ST max. 225 mm (EN 4-6)
ED 500 arm	ST 226-300 mm	ST 226-500 mm**	ST 226-500 mm**

** ST max. 350 mm with the use of a 90 mm spindle extension

EN 3-6 slide channel (pull version) on hinge side with ED 100 or ED 250



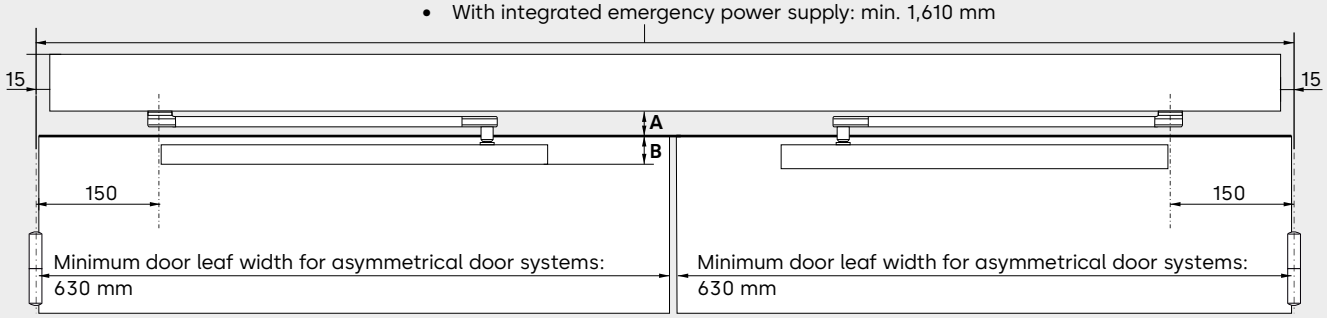


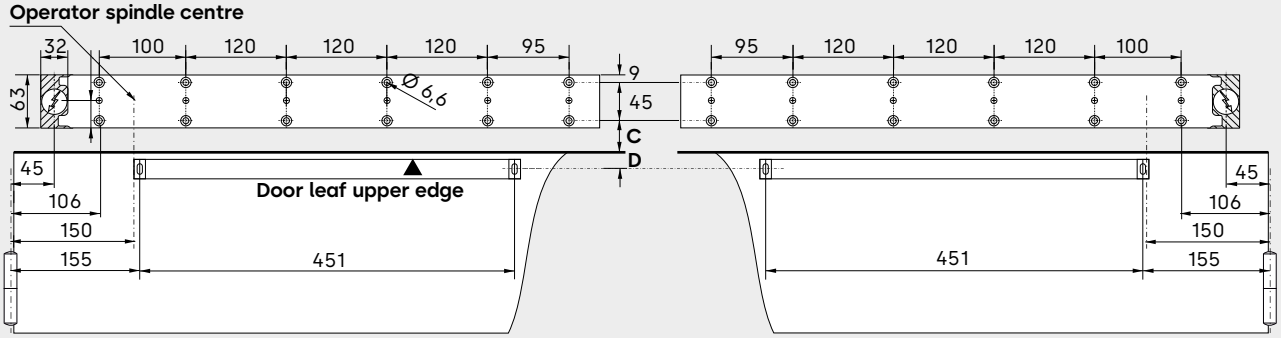
Spindle extension	A	C
Standard	22	31
20 mm	42	51
30 mm	52	61
60 mm	82	91
90 mm, only ED 250	112	121
Pivot pin	**B**	**D**
12.5 mm	29	19
25 mm	42	32

Illustration: Operator cover PROFESSIONAL

Minimum system width:

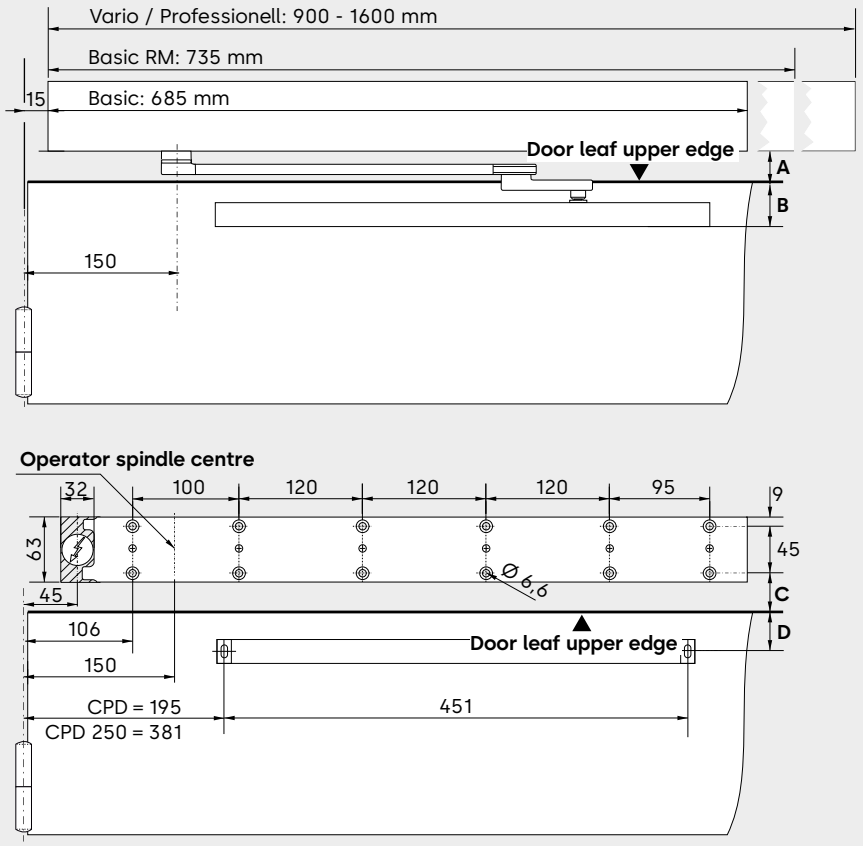
- Standard: min. 1,400 mm
- With ESR door coordinator: min. 1,450 mm
- With integrated emergency power supply: min. 1,610 mm

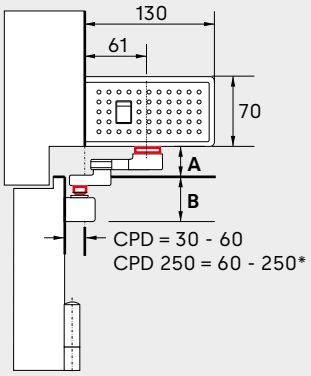




Cable entry can be on the left or right

EN 3-6 slide channel with CPD arm (pull version) on hinge side with ED 100 or ED 250





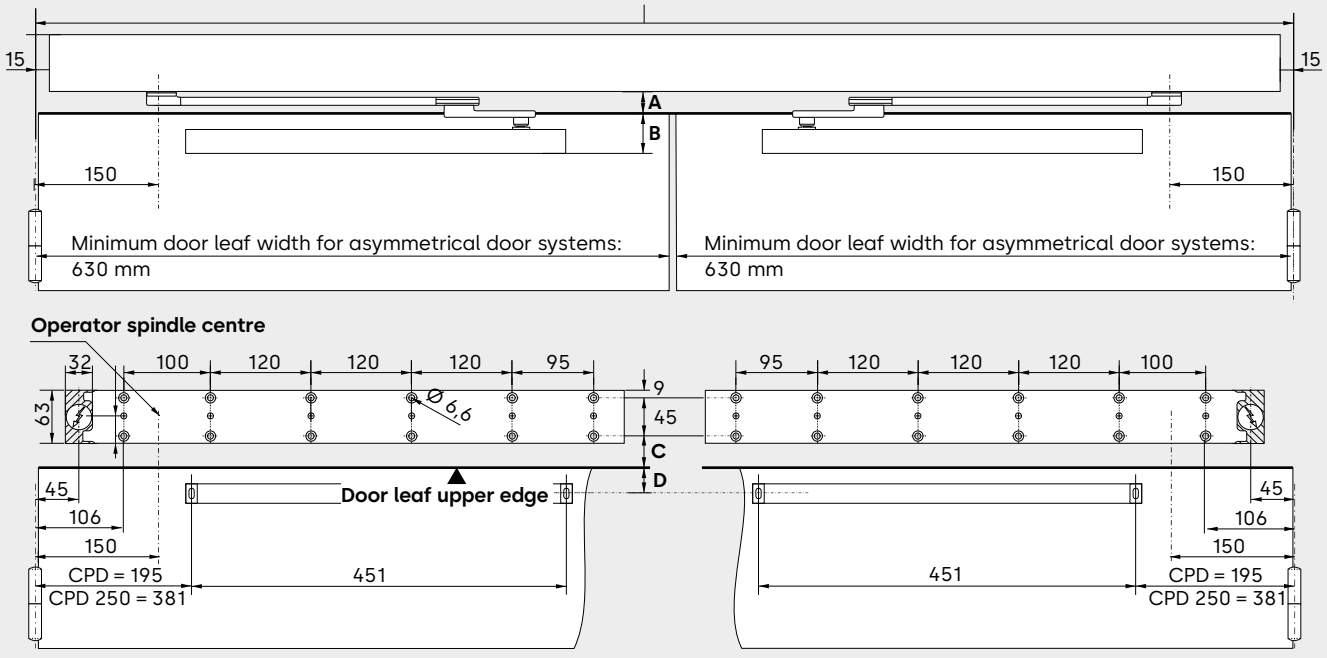
* not suitable for fire and smoke doors with lintel depths greater 100 mm

Spindle extension	A	C
Standard	22	31
20 mm	42	51
30 mm	52	61
60 mm	82	91
90 mm, only ED 250	112	121
Pivot pin	**B**	**D**
12.5 mm	41	31
25 mm	54	44

Illustration: Operator cover PROFESSIONAL

Minimum system width:

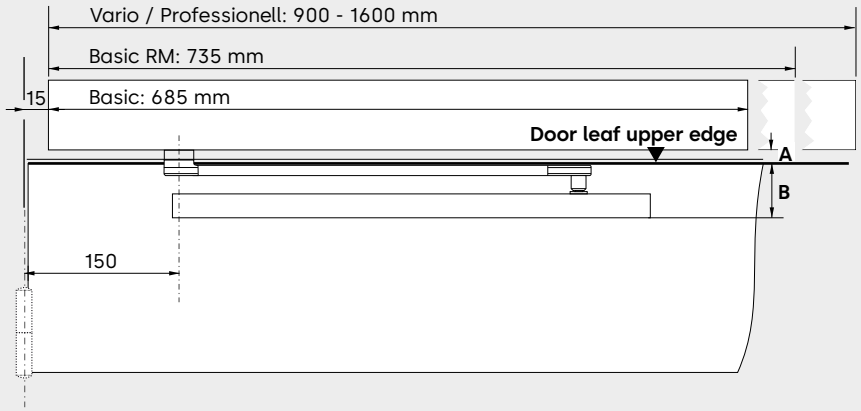
- Standard: min. 1,400 mm
- With ESR door coordinator: min. 1,450 mm
- With integrated emergency power supply: min. 1,700 mm

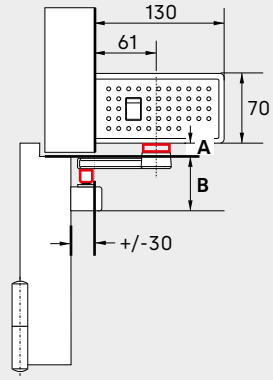


Cable entry can be on the left or right

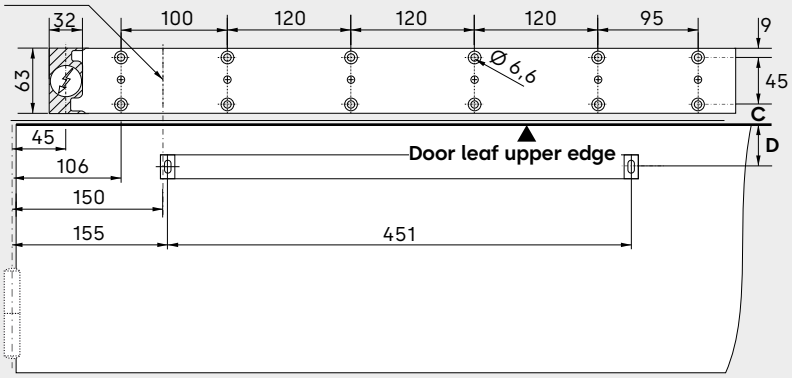
EN 3-4 slide channel (pull version) on opposite hinge side with ED 100 or ED 250

Not suitable for fire and smoke doors





Operator spindle centre

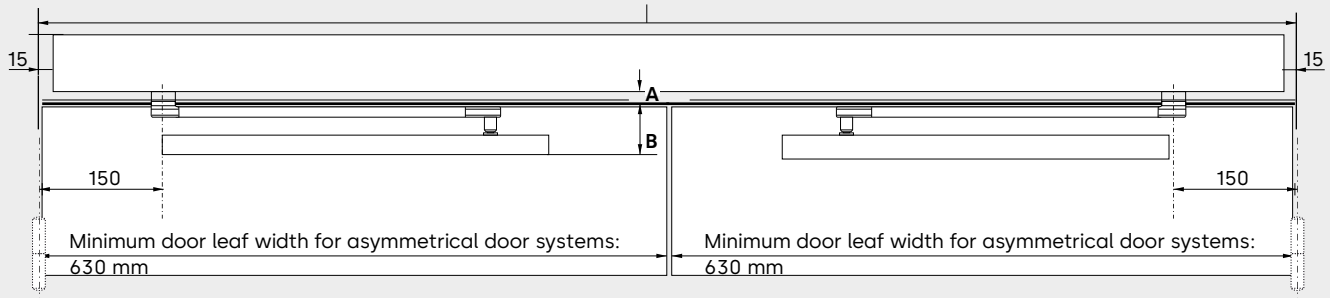


Spindle extension	A	C
Standard	5	14
20 mm	25	34
30 mm	35	44
60 mm	65	74
90 mm, only ED 250	95	104
Pivot pin	**B**	**D**
12.5 mm	45	35
25 mm	58	48

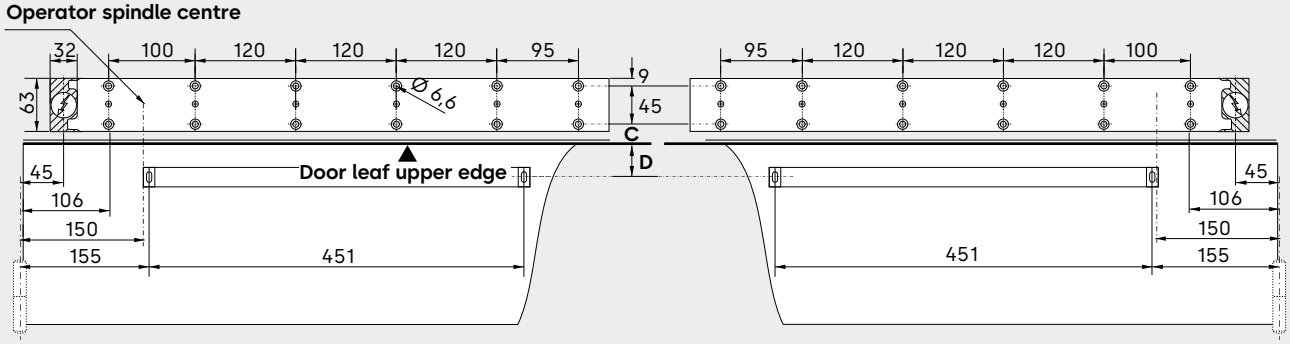
Illustration: Operator cover PROFESSIONAL

Minimum system width:

- Standard: min. 1,400 mm
- With ESR door coordinator: min. 1,450 mm
- Wit integrated emergency power supply: min. 1,610 mm

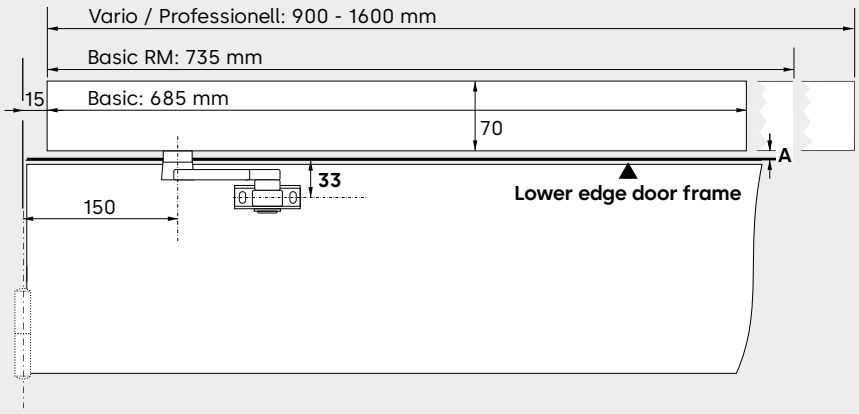


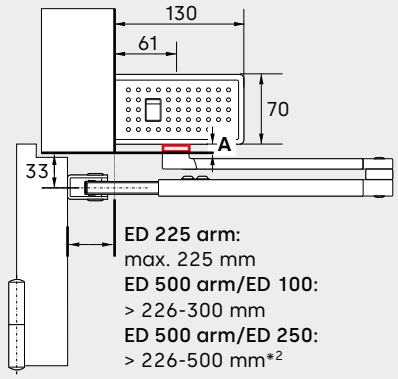
Operator spindle centre



Cable entry can be on the left or right

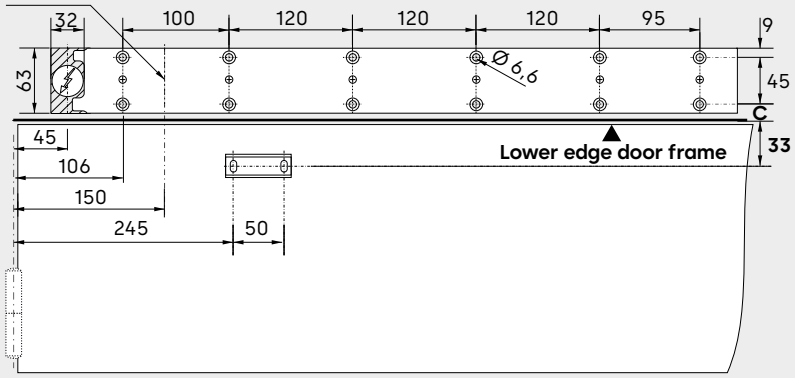
EN 3-6 arm (push version) on opposite hinge side with ED 100 or ED 250





[2] max. 350 mm with the use of a 90 mm spindle extension

Operator spindle centre

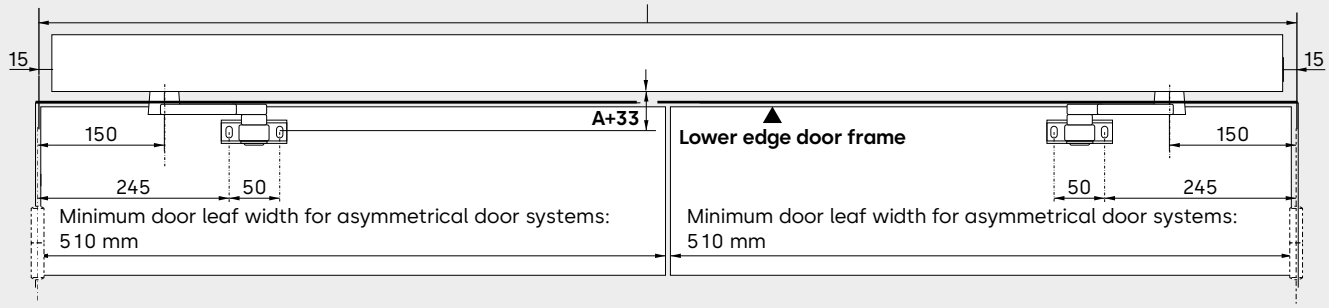


Spindle extension	A	C
Standard	9	18
20 mm	29	38
30 mm	39	48
60 mm	69	78
90 mm, only ED 250	99	108

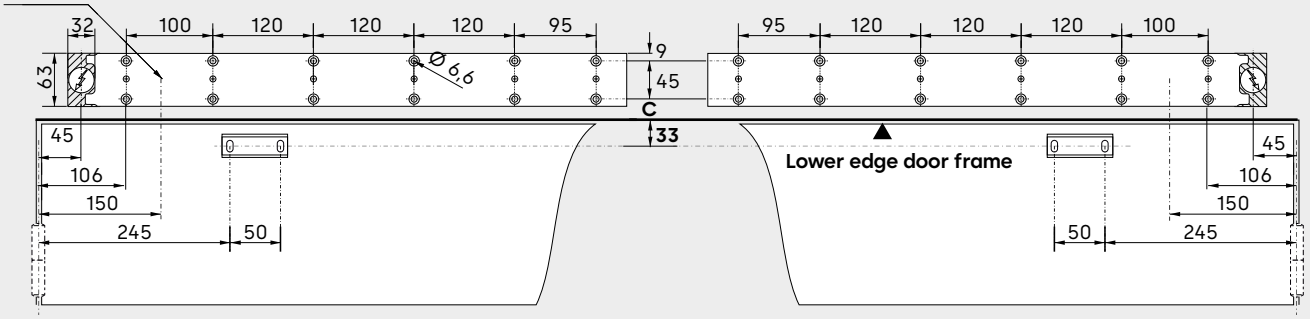
Illustration: Operator cover PROFESSIONAL

Minimum system width:

- Standard: min. 1,400 mm
- With ESR door coordinator: min. 1,450 mm
- With integrated emergency power supply: min. 1,610 mm

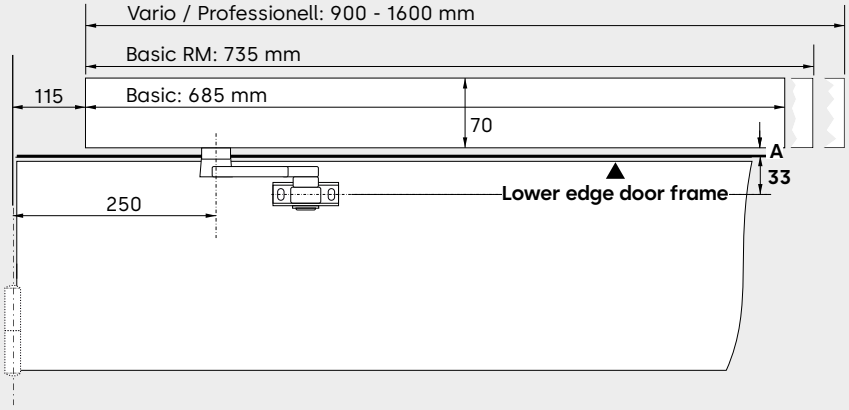


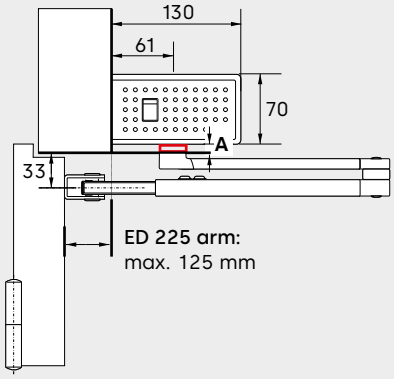
Operator spindle centre



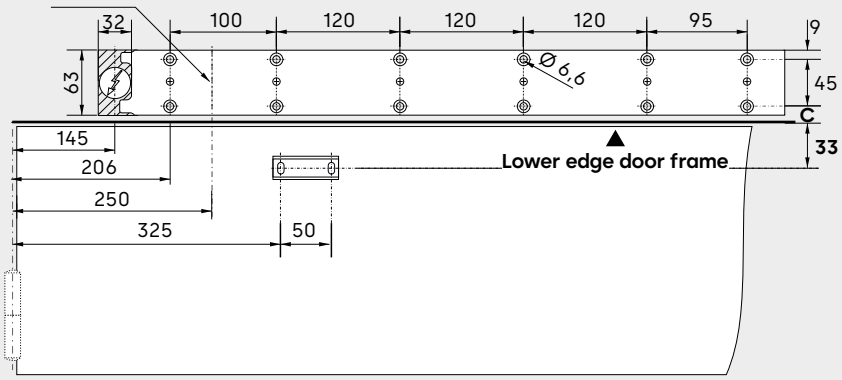
Cable entry can be on the left or right

EN 7 arm (push version) on opposite hinge side with ED 250





Operator spindle centre

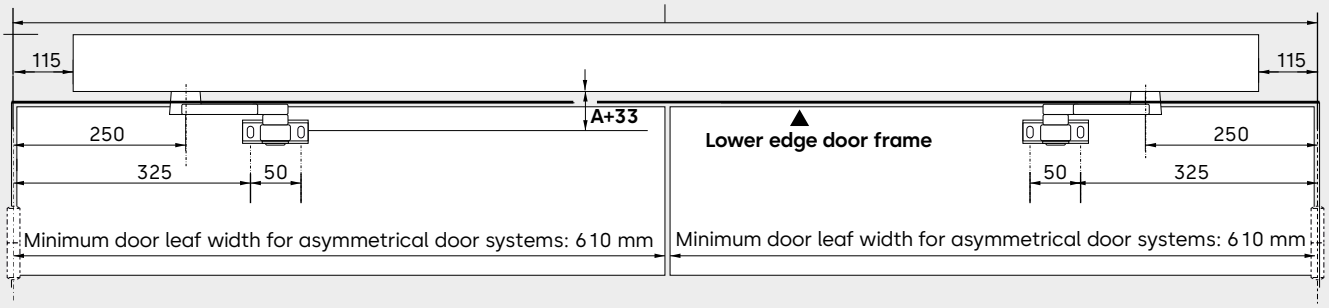


Spindle extension	A	C
Standard	9	18
20 mm	29	38
30 mm	39	48
60 mm	69	78
90 mm, only ED 250	99	108

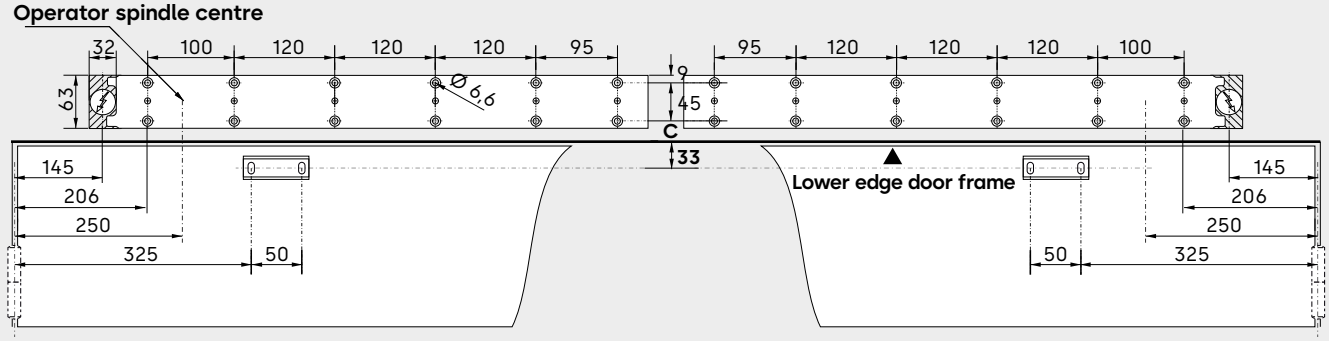
Illustration: Operator cover PROFESSIONAL

Minimum system width:

- Standard: min. 1,600 mm
- With ESR door coordinator: min. 1,650 mm
- Wit integrated emergency power supply: min. 1,610 mm



Operator spindle centre



Cable entry can be on the left or right

How should the door be operated?

Operating modes

The ED operator can be operated in various modes. Selection can be made using the internal or an external program switch. The operating modes depend on the program switch used and may only be available via an external program switch.
As an alternative, selection can also be made using the dormakaba Door Pilot app. For this, the ED operators must be equipped with the Door Pilot Interface (Bluetooth).

Off. The ED operator is not active.

Automatic. The ED operator opens and closes according to the functions set. The inside and outside pulse transmitters are active.

Exit. The ED operator opens and closes according to the functions set. Only the inside pulse transmitters are active.

Permanently open. The ED operator keeps the door permanently open.

Partially open. Only the active leaf is automated in 2-leaf systems.

Basic function

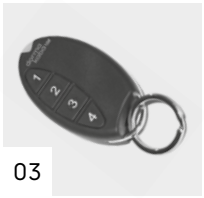
Push-and-go
Brief "tapping" opens the door. Then the door closes autonomously. The hold-open time can be set individually.

Manual access with door closer function
The door responds in the same way as a manual door with door closer-like action. The closing force and hold-open time are adjustable.

Barrier-free access according to EN 1154: Power Assist function
The Power Assist function enables servo-controlled, manual access to the door. The servo control is automatically adjusted to the set door closer size. The force is adjustable to comply with the requirements of DIN 18040, DIN Spec 1104, CEN/TR 15894, BS 8300/2100 and document "M", and even EN 7. The Power Assist function meets the requirements of EN 1154 and at the same time provides barrier-free access in standard operation mode. The combination with the push-and-go function or the wind load control is not possible, as these would counteract the easy manual opening.


01


02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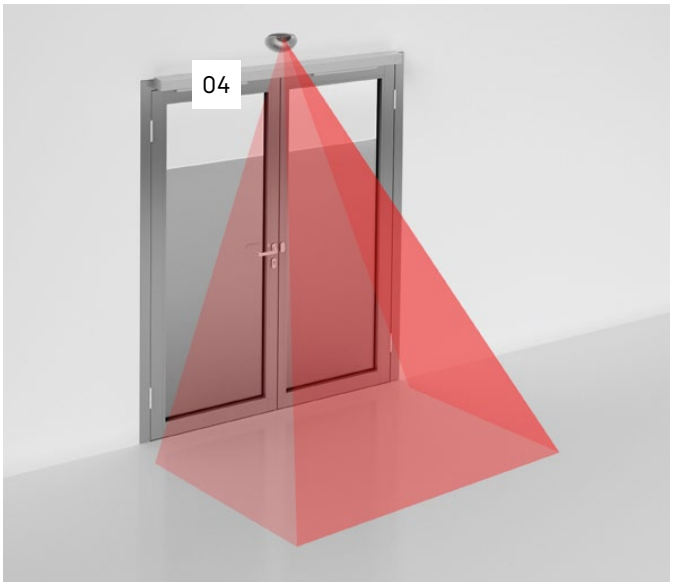

04


05

Functions with accessories

1. Automatic opening by external pulse transmitters such as manual release pushbuttons, key switches, telephone and speaker systems, etc.

The door opens automatically and closes after a pre-set hold-open time (mono-flop) or a repeated pulse (flip-flop).

2. Automatic opening only after release by access control such as card reader, coding switch, biometric, etc. (night/bank function)
The door can only be accessed after release by access control. The door closes after a pre-set hold-open time (mono-flop). As an option, the night/bank function can close the door after a repeated pulse (flip-flop function available with Upgrade Card Professional).

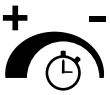
3. Remote control/BRC remote system
Using the BRC remote system, the opening pulse can be sent via a BRC-H 3 hand-held transmitter or BRC-W wall transmitter. As an alternative, the BRC-T battery-operated transmitter can be used to integrate an existing pushbutton in the remote system. After receiving the pulse, the door opens automatically and closes after a pre-set hold-open time (mono-flop) or a repeated pulse (flip-flop).

4. Automatic opening by radar sensors (motion sensors)
The door opens automatically as soon as the sensor detects a person in the detection range. The door closes after a pre-set hold-open time.

5. Optimised automatic opening and closing (MotionIQ)
MotionIQ permanently assesses the movements in the vicinity of the door within a range of up to 4.5 m x 10 m. As soon as MotionIQ detects a person with the intention to access, it calculates the optimum opening time and hold-open time.

Special additional functions using 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: High door speeds

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).

Upgrade Card Fire Protection incl. Full-Energy

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.

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: Special functions

Extended hold-open time of up to 180 seconds
The hold-open time can be extended to up to 180 seconds (standard is 30 seconds).

Night/bank function with flip-flop (pulse)
The night/bank function in basic mode closes the door automatically after the hold-open time has elapsed. Once the flip-flop function has been activated, the door is opened by the first pulse to the night/bank input (e.g. key switch) and only closes again after a second pulse to the night/bank input (e.g. key switch). The length of the permanently open time is not limited. At the same time, the regular hold-open time is still available on all other pulse inputs. The smoke detectors are always superordinate to the permanently open function.

Nurse-bed function for 2-leaf doors
As a rule, only the active leaf opens automatically, e.g. by motion sensor. If the entire passage width of the door is required, for patient transport for instance, both active and inactive leaf are opened exclusively by a separate pulse transmitter, e.g. a manual release pushbutton.

Nurse-bed-function: Active and inactive leaf open via external pulse transmitter only, e.g. manual release pushbutton.

NEW

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.This function can only be activated in combination with the Upgrade Card Full-Energy.

NEW

EVAC evacuation function: Barrier-free access even in the event of an alarm on smoke and fire doors
Swing door operators are deactivated in the event of an alarm and the doors can only be accessed manually. Especially with heavy doors, barrier-free access is then no longer possible. With activation of the EVAC function, the operator is not deactivated entirely in the event of an alarm, but the motion sensors and optional safety sensors are deactivated and the operator switches from full-energy to low-energy operation. Now, the Power Assist function can now continue to be used without safety sensors to ensure barrier-free access. In addition, limited automatic opening for 20 seconds is possible using the night/bank input. Control is via NC/NO at the 43/3 feedback contact. Internally, the triggered function is displayed as IN18.

Note: According to German building regulations, this function may only be used in addition to being operated as a local hold-open system.

SPV function: Temporary pressure differences in the event of an alarm can be compensated.

Barrier-free toilet Upgrade Card: Door and display control via the ED operator

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 inside and on the outside switches from red to green 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.

DCW®

Upgrade Card DCW®: Expansion of the connection options

The "DCW®" upgrade card adds the option to connect DCW® components to the operator. The DCW® bus is a digital bus system for component monitoring and control. All components are connected in any topology with just one cable.

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.

Key switch ST 32 DCW® or ST 55 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.*

DCW® program switch
The DCW® program switch allows selection of the operating mode: Off, Automatic, Exit (closing time), Partially open (1-leaf opening of 2-leaf doors), Permanently open.
Electronic actuation via pushbuttons. Operation can be locked with a number code or and additional key switch.

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

ED operator and door lock: electronic door opener or motor lock

An automatic door system can be locked with a door lock just like any manual door, provided that the operator has been deactivated. The interaction with an electronic door lock such as an electronic door opener or motor lock, is much more convenient. The door can also be securely locked automatically via the program switch when in "Off" mode. For motor locks without feedback contact for the locking status, the unlocking time must be less than 4 seconds.

Which operator covers are required?

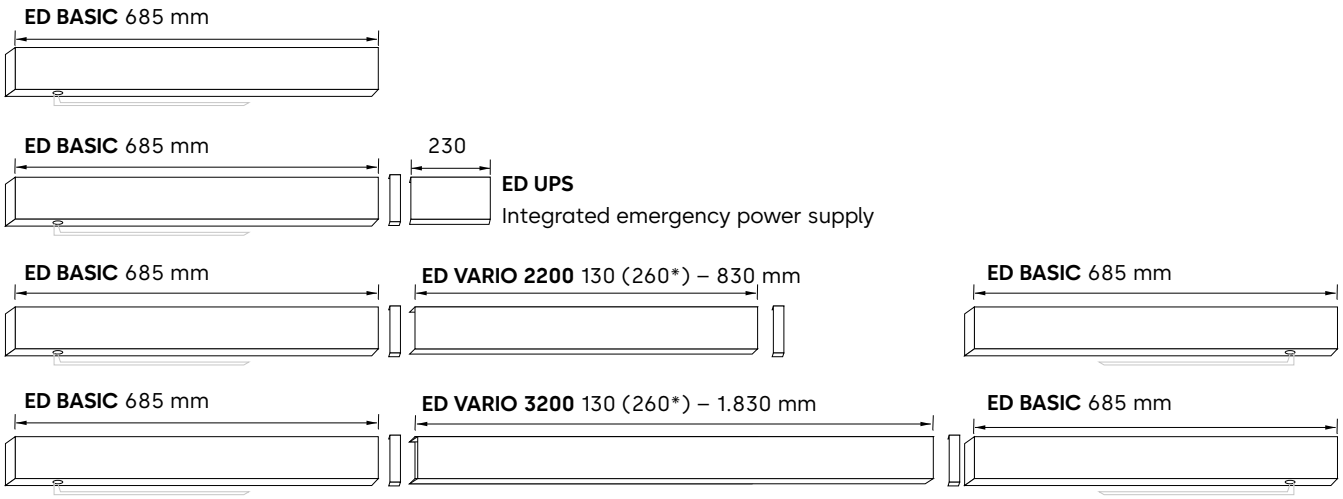
The covers are packed separately from the operator system, which makes it easy to select the respectively required cover. dormakaba provides covers for single and double systems. All covers are designed for on-site mounting. They are furthermore suitable for both the ED 100 and the ED 250 version. The covers are made of aluminium and can also be coated as required.

ED BASIC (01) and ED BASIC RM (02) cover
The operator cover is available in two versions:
Basic as standard or Basic RM with integrated smoke detection control. One cover serves to encase one ED operator. The covers are supplied with end caps. Two "Basic" standard operator covers are required for 2-leaf systems.

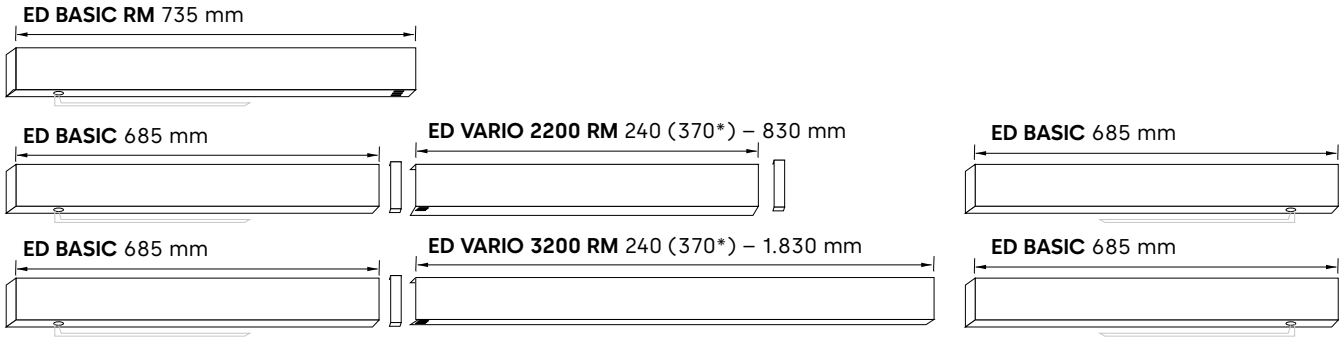
ED VARIO and ED VARIO RM (04) extensions to supplement the Basic operator cover
The Vario extension is available in two versions:
Vario as standard or Vario RM with integrated smoke detection control, both available in two lengths each. The Vario extension can be used as an optical extension of a 1-leaf system or a connecting piece in 2-leaf systems. These extensions can be shortened in length as needed. The connecting pieces for the Basic cover are included in the scope of delivery.

Customised ED Professional (05) cover
The Professional cover is a continuous, seamless encasing for 1-leaf and 2-leaf door systems. The cover is custom-made according to the required measurements.

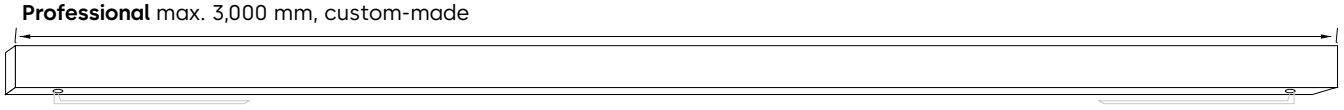
Cover options



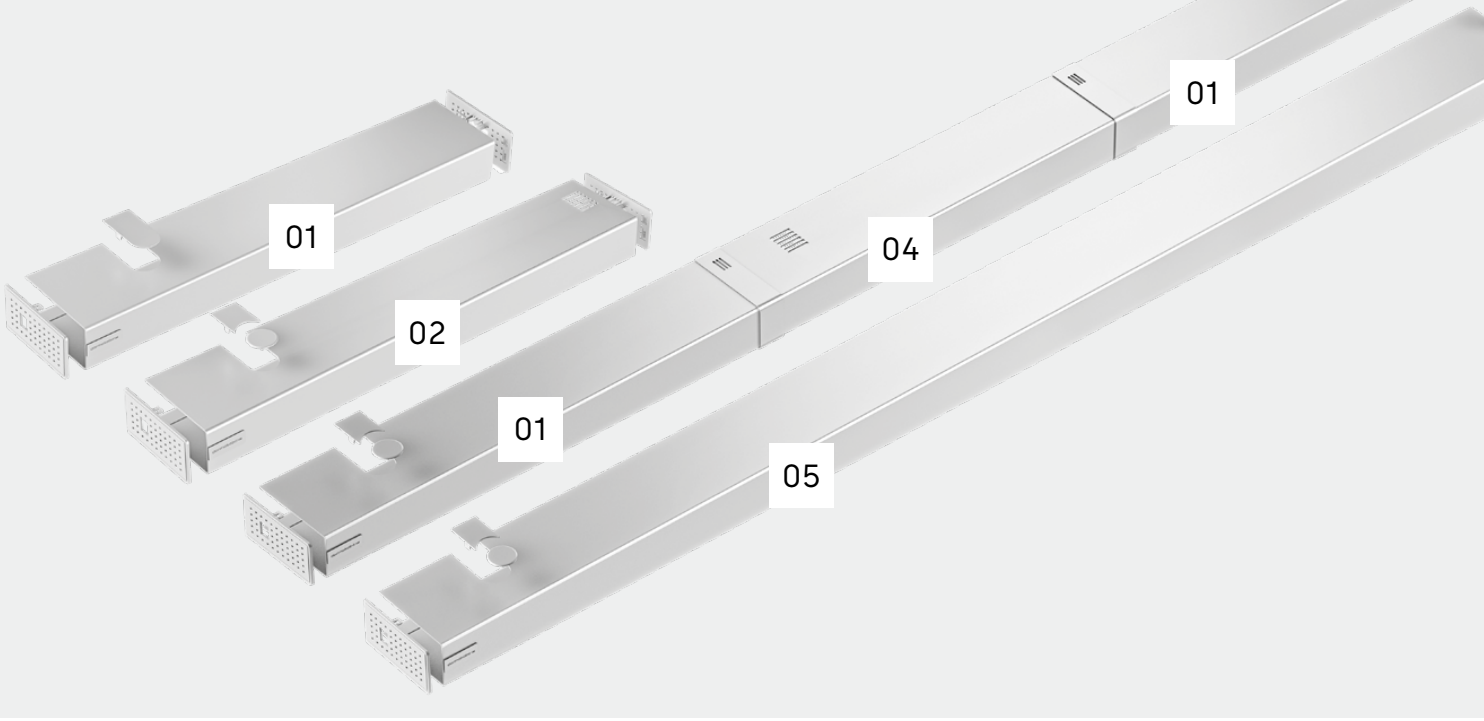
Cover options with integrated smoke detector and smoke detection control

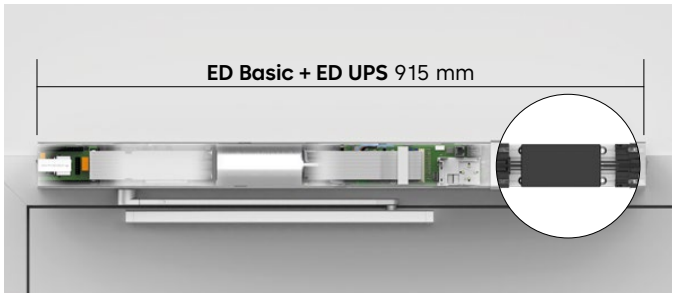


Customised Professional cover



* Minimum measurements with integrated emergency power supply (battery pack)





Integrated RM-ED smoke detector

The ED BASIC RM and ED VARIO RM covers include an integrated RM-ED smoke detector. The RM-ED smoke detector can be supplemented with the RM-N ceiling smoke detectors. In the event of a fire, the smoke is detected and automatic opening is deactivated. In this case, the operator closes the door using the integrated spring and can no longer open the door automatically. In addition to automatic triggering by a smoke detector, the system can also be triggered manually by actuating the optional HT manual release pushbutton or by closing the door by hand. To reactivate the system, the door must be opened by hand.

To be able to use smoke detectors, the operator must be supplemented with the Upgrade Card Fire Protection.

Note: If the clearance from door opening to ceiling is greater 1 m, an additional ceiling smoke detector is required alongside the RM-ED.

F On fire and smoke doors, according to DIN EN 1158 an ESR door coordinator and on escape route doors and additional MK 396 or MK 397 carry bar must be used.

Integrated ED UPS emergency power supply

Together with the covers, an emergency power supply (battery pack) can be integrated in the ED 100/250. Reliable operator operation is thus guaranteed, even in the event of a power failure. On 1-leaf systems, installation is in direction of the main closing edge using a mounting kit. On 2-leaf systems, installation is centred under the Vario cover or inside the Professional cover.

Note: Owing to the design, it is currently not possible for the integrated emergency power supply to function at the same time as the integrated mechanical door coordinator (ED ESR set). As an alternative, the external door coordinator can be installed.

The battery pack includes rechargeable lithium iron phosphate batteries (LiFePo4) with a high capacity, high energy density, a long service life and a significantly higher level of safety. The use of this new rechargeable battery technology virtually eliminates the risk of ignition (compared to lithium polymer batteries). Conflict minerals such as cobalt is not included.
The battery pack can buffer 1-leaf systems up to approx. 600 cycles and 2-leaf systems up to approx. 300 cycles (depending on the application and connected consumers).
The emergency power supply is in standby-by mode 24 hours a day for immediate switchover, if required.

Should or must the door's swing zone be secured?

Safety

Reversing

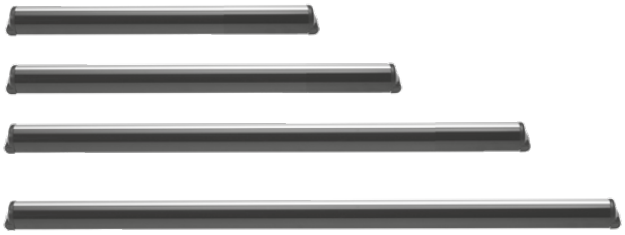
Stop

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 ith the door is not desired. Safety sensors have to be used in the full-energy mode.

Safety sensors are contact-free protection devices which are mounted to the door panel and designed to monitor the swing zone. 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.



Sensors with infrared technology: Prosecure Opti Safe and IRS 4 series

The Prosecure Opti Save and IRS-4 are safety sensors based on infrared technology to safeguard the swing zone 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 swing zone 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 ill 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 etection.

A sufficient safeguarding of the swing zone 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.

The Prosecure Opti Safe and IRS 4 series safety sensors are available in different lengths from 350 to 1,600 mm and different colours.

Sensors with laser technology: Flatscan SW

The Flatscan SW is a safety sensor based on laser technology to safeguard the swing zone 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 swing zone 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 swing zone 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.

The Flatscan SW safety sensor is available in different colours.

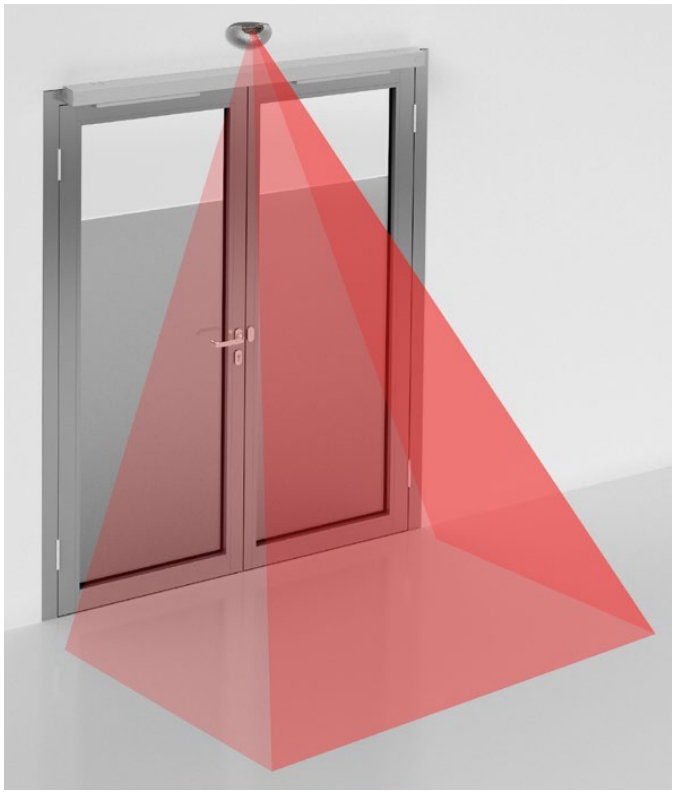
Sensor using laser technology: Flatscan 3D

The Flatscan 3D safety sensor is based on laser technology (time-of-flight measurement) to secure the swing zone of automated swing doors according to DIN 18650/EN 16005. Four light curtains create a volumetric detection range and cover the entire movement zone at the door. The Flatscan 3D ensures maximum comfort and safety for the user. Sudden movements of the door leaves are prevented and it offers full TÜV DIN EN 16005-tested cover of the secondary closing edge, the door leaf zone and additional protection of the main closing edge. A virtual pushbutton rounds off the functional features relating to safety on force-operated swing doors.

The Flatscan 3D combines the properties of the Flatscan SW and the additional, TÜV-certified and unrestricted secondary edge protection. However, the Flatscan 3D can offer this function only as a set. Nevertheless, it can be used by itself in combination with the existing Flatscan SW.

The Flatscan 3D safety sensor is available in different colours.

Should the door simply open fully automatically?



Motion sensors

Motion sensors are used for fully automatic opening. As soon as the motion sensor detects a person or a movement within the detection range, the “Open door” signal is transmitted to the ED operator. The door opens automatically.
When the pre-set hold-open time is expired, the door closes again automatically. The detection range can be adapted depending on the motion sensor model. To avoid false activations, the direction of movement towards the door is detected and cross-traffic is suppressed.

Eagle Artek

The Eagle Artek radar motion sensor with simple options for adjusting the detection range: field shape, field size, direction detection and simple cross-traffic optimisation.

The Eagle Artek is available in different colours.

Prosecure Opti Motion Stereo

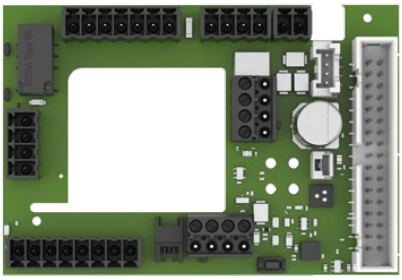
The detection range of the Prosecure Opti Motion Stereo can be customised in many ways to suit the conditions on site: adjustable inclination angle, adjustable field size, setting function for inclined field of view, direction detection, cross-traffic optimisation, slow motion function, adjustable immunity and status indicator. The direction detection function only releases the door when it is accessed in a defined direction. As an option, cross-traffic optimisation can be deactivated.
Set-up is conveniently down with the remote control.

The Prosecure Opti Motion Stereo is available in different colours

Or open and close intelligently?

MotionIQ

Automatic doors should only open when a person actually wishes to access and should quickly close again as soon as the person has safely passed through. MotionIQ is the first system that makes this possible, as the automatic door is controlled individually based on the user's movements.
This significantly reduces the time that doors are left open unnecessarily and reduces energy losses. False openings caused by people standing in front of the door are avoided.
dormakaba MotionIQ optimises the control of automatic swing doors with ED 100 and ED 250 and can be used for new as well as existing systems.
Movements within a large area **of up to 4.5 x 10 m** in front of the door are recorded and permanently evaluated. If a person's intention to access is detected, the door opens. Ideally, it opens early enough for the person to pass smoothly through the door and closes precisely after the person has passed completely through.



Motionsensor M A01 with dynamic object measurement (01)

The Motionsensor M A01 detects the movements in front of the door and provides the movement data for the detected objects. Distance, speed and angle of up to 2 objects in the detection range are reliably detected and transmitted to the MotionIQ Controller.
Easy installation – Align. Connect. Done.
No readjustment required – not even when in operation

ED connection board CAN with MotionIQ controller (02)

The ED connection board CAN is required for using MotionIQ with the ED swing door operators. This connection unit provides the necessary CAN bus connection for the sensors and contains the MotionIQ controller – the heart of the system.
The MotionIQ controller analyses the movement data transmitted by the M A01 radar sensor, checks whether there is an intention to access and calculates the travel parameters for the motion operator. Opening time and hold-open time are based on expected movement patterns and are recalculated on every single activation. Manual setting is not required.

Optional additional ED Multi Adapter for further connection options. The ED Multi Adapter is mandatory for 2-leaf door system.

Connections

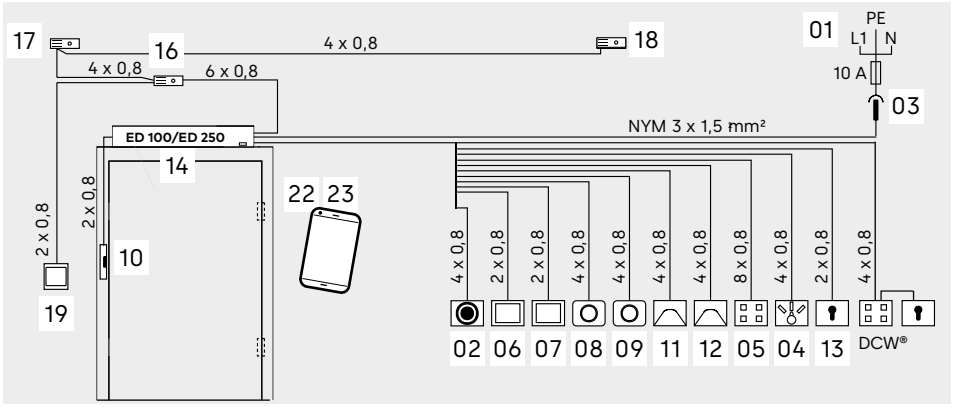
ED standard circuit board

The connection options are depending on the components selected.
If the Upgrade Card DCW® is used, all DCW® components can be connected to the DCW® bus in any topology (4-wire system bus).

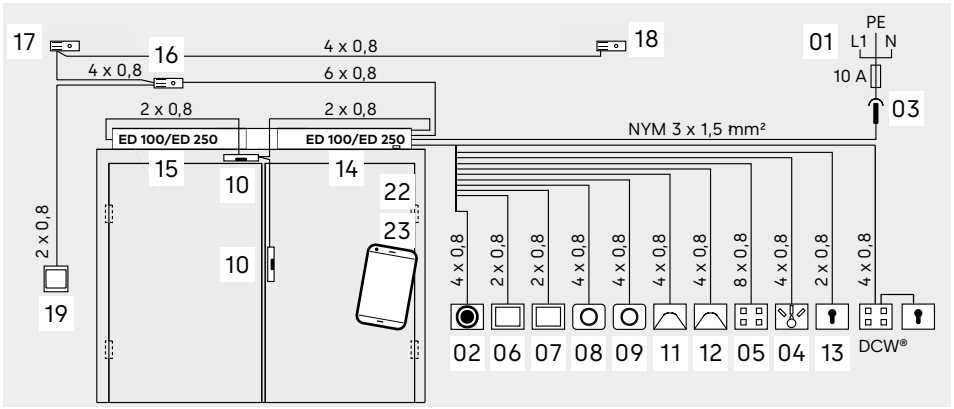
01 Power supply
02 Emergency pushbutton, function: Emergency Off
03 Two-pole-and-earth socket
04 External PGS, mechanical
05 External PGS, elektronic
06 Pushbutton, inside
07 Pushbutton, outside
08 CleanSwitch, inside
09 CleanSwitch, outside
10 Lock
11 Radar motion detector, inside
12 Radar motion detector,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

*not necessary with integrated smoke detector

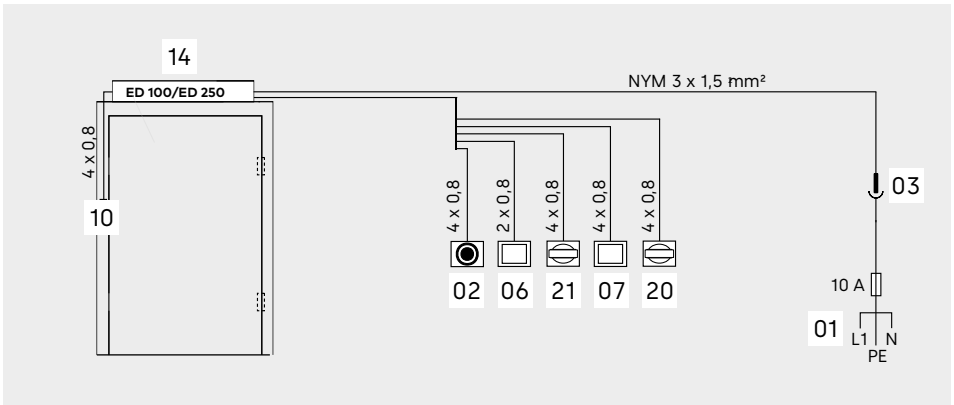
1-leaf doors



2-leaf doors

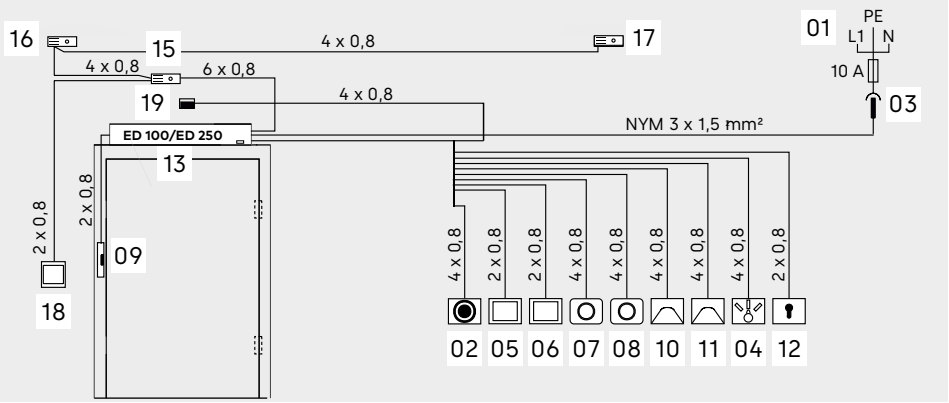


1-leaf doors, barrier-free toilet

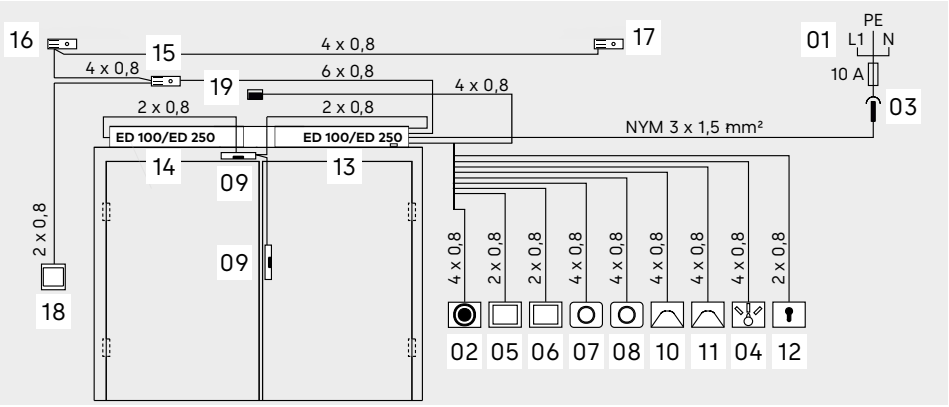


Installation Instructions

1-leaf doors



2-leaf doors



ED CAN connection unit

The connection options are depending on the components selected.

01 Zuleitung
02 Notbefehlseinrichtung
Funktion: Not-Aus
03 Schuko-Steckdose
04 External PGS, mechanical*[1]
05 Pushbutton, inside
06 Pushbutton, outside
07 CleanSwitch, inside
08 CleanSwitch, outside
09 Lock
10 Radar motion detector, inside
11 Radar motion detector, outside
12 Key switch
13 ED 100/ED 250
14 ED 100/ED 250 with continuous cover
15 RM-ED smoke detector*[2]
16 RM-N smoke detector, opposite hinge side
17 RM-N smoke detector, hinge side
18 Optional manual release pushbutton “Tür zu” (German for “close door”)
19 MotionIQ radar sensor M A01

*[1] Only in combination with the optional ED CAN Multi Adapter
*[2] not necessary with integrated smoke detector

Individual items

Installation variant	Lintel installation, hinge side Slide channel (pull version)				Lintel installation, opposite hinge side Standard arm (push version)/ Slide channel (push version)			
	ED 100		ED 250		ED 100		ED 250	
	minimum	maximum	minimum	maximum	minimum	maximum	minimum	maximum
Closer size EN 1154	EN 2	EN 4	EN 4	EN 6	EN 2	EN 4	EN 4	EN 6
Closing force, manual (Nm)**	13	34	26	65	13	37	26	70
Closing force, automatic (Nm)*	20	FE: 150 LE: 67	20	FE: 150 LE: 67	20	FE: 150 LE: 67	20	FE: 150 LE: 67
Opening force, manual (Nm)	30	50	55	85	35	55	60	90
Opening force, automatic (Nm)*	20	FE: 150 LE: 67	20	FE: 150 LE: 67	20	FE: 150 LE: 67	20	FE: 150 LE: 67
Opening force, manual, Power Assist function activated (Nm)	23	23	23	23	23	23	23	23

FE With Upgrade Card Full-Energy or Fire Protection; LE Low-Energy basic unit without Upgrade Card
* The force is available during automatic opening in automatic mode.
** Forces are reduced by approx. 33 % when the slide channel (push version) installation variant is used

Operator units

All ED operators can be installed on both hinge side and opposite hinge side. 2-leaf door systems require one ED operator for each door leaf. The closing sequence of active and inactive leaf is coordinated by the control unit of the ED operators or the ESR door coordinator. On fire and smoke doors, according to DIN EN 1158 an ESR door coordinator and a MK 396 or MK 397 carry bar must be used.

ED operator dimensions (W x H x D):	735 x 70 x 130 mm
Weight:	12 kg
Door opening angle	max. 110°
Voltage supply for external consumers:	24 V DC +/- 10 % 1.5 A, max. 120 watts

ED 100
230 V swing door operator for 1-leaf and 2-leaf systems acting as active and/or inactive leaves.
EN 3-4, push version, fire protection, EN 3-4
Closing force infinitely adjustable according to EN 1154
ED 100 230 V swing door operator 29222311

ED 250
230 V swing door operator for 1-leaf and 2-leaf systems acting as active and/or inactive leaves.
EN 4-7, push version, fire protection, EN 4-6, pull version, fire protection
Closing force infinitely adjustable according to EN 1154
ED 250 230 V swing door operator 29202311

ED 250 PA
230 V swing door operator for the semi-automatic inactive leaf in 2-leaf systems.
EN 4-6, push version, fire protection, EN 4-6, pull version, fire protection
Closing force infinitely adjustable according to EN 1154
ED 250 PA 230 V swing door operator 29202315

Mechanical door coordinator

The ESR set is installed on site into the 2-leaf operator. It is available separately and easy to install. Its function is similar to that of a drum brake. The brake acts on the motor shaft of the active leaf unit. The switching signal is transmitted via a rod and the unit operates maintenance-free.

ED ESR – Integrated door coordinator (no illustration)
ED ESR set 29261001

Arms /door connection

ED slide channel set
Installation variant pull- or push version, for lintel depths +/- 30 mm, including slide channel, arm, 12.5/25 mm pivot pin
Note: Installation variant push version is not suitable for fire and smoke doors

silver	29275021
white (similar to RAL 9016)	29275022
special colour	29275023

ED slide channel set CPD
Installation variant pull version, for lintel depths 0-60 mm, including slide channel, arm, 12.5/25 mm pivot pin

silver	29276021
white (similar to RAL 9016)	29276022
special colour	29276023

ED CPD 250 slide channel set
Installation variant pull version, for lintel depths 60-250 mm, including slide channel, arm, 12.5/25 mm pivot pin; Note: Not suitable for fire and smoke doors with lintel depths greater 100 mm

silver	29276028
white (similar to RAL 9016)	29276029
special colour	29276030

ED standard arm 225
Installation variant push version, for lintel depths 0-225 mm (EN 2-6), 0-125 mm (EN 7)

silver	29271021
white (similar to RAL 9016)	29271022
special colour	29271023

ED standard arm 500
Installation variant push version, for lintel depths
ED 100: 226-300 mm
ED 250: 226-300 mm up to 400 kg, 301-500 mm up to 160 kg

silver	29272021
white (similar to RAL 9016)	29272022
special colour	29272023

ED spindle extensions
The 20, 30 and 60 mm spindle extensions can be used for all arm variations.

20 mm	29278012
30 mm	29278013
60 mm	29278016
90 mm (only for ED 250)	29278019

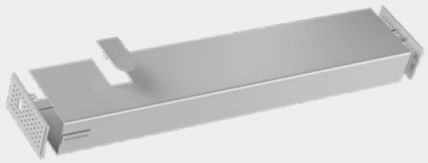
Decorative foil for covering the spindle extension (without illustration)
Foils are available for covering the ED spindle extensions.

silver	29278500
white (similar to RAL 9016)	29278501
black	29278502

Glass door bracket for ED
For fixing the slide channel to toughened glass doors (with 10 to 13 mm glass thickness).

Glass door bracketfor ED	29275030

ED Covers



ED BASIC cover
Aluminium cover for an ED operator, incl. end caps. Length 685 mm

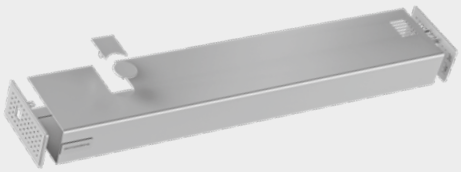
silver	29241001
white (similar to RAL 9016)	29241002
special colour	29241003

ED VARIO 2200 cover
Aluminium cover for building a continuous cover on 2-leaf door systems or for the optical extension of 1-leaf door systems, incl. 2 butt connectors, max. system measurements: 1-leaf system 1,600 mm, 2-leaf system 2,200 mm

silver	29242001
white (similar to RAL 9016)	29242003

ED VARIO 3200 cover
Aluminium cover for building a continuous cover on 2-leaf door systems or for the optical extension of 1-leaf door systems, incl. 2 butt connectors, max. system measurements: 2-leaf system 3,200 mm

silver	29242002
white (similar to RAL 9016)	29242004



ED BASIC RM cover with integrated RM-ED smoke detector
Aluminium cover for an ED operator for 1-leaf door systems, incl. end caps. Length 735 mm
Note: If the clearance from door opening to ceiling is greater 1 m, an additional ceiling smoke detector is required.

silver	29241011
white (similar to RAL 9016)	29241012
special colour	29241013

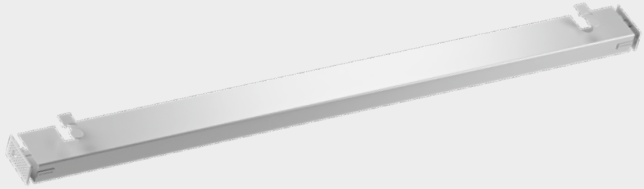
ED VARIO RM cover with integrated RM-ED smoke detector
Aluminium cover for building a continuous cover on 2-leaf door systems or for the optical extension of 1-leaf door systems, incl. 2 butt connectors, max. system measurements: 1-leaf system 1,600 mm, 2-leaf system 2,200 mm
Note: If the clearance from door opening to ceiling is greater 1 m, an additional ceiling smoke detector is required.

silver	29242011
white (similar to RAL 9016)	29242013

ED VARIO 3200 RM cover with integrated RM-ED smoke detector
Aluminium cover for building a continuous cover on 2-leaf door systems, or for the optical extension of 1-leaf door systems, incl. 2 butt connectors, max. system measurements: 2-leaf system 3,200 mm
Note: If the clearance from door opening to ceiling is greater 1 m, an additional ceiling smoke detector is required.

silver	29242021
white (similar to RAL 9016)	29242022

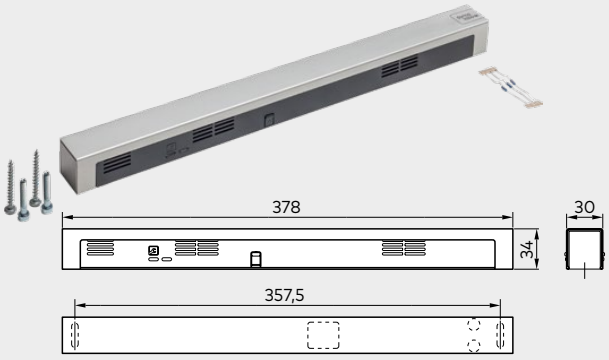
F On fire and smoke doors, according to DIN EN 1158 an ED ESR door coordinator and a MK 396 or MK 397 carry bar must be used.

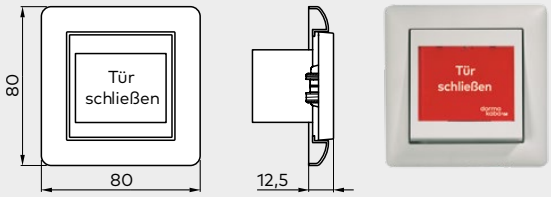


ED PROFESSIONAL cover
Continuous, seamless cover for 2-leaf door systems or as an optical extension of 1-leaf door systems.
The ED PROFESSIONAL cover is available in lengths from 1,400 mm (1,450 mm with ESR) to 3,200 mm.
On 1- leaf door systems, the extension is made in direction of the main closing edge up to a total length of 3,000 mm.

silver	29243001
special colour	29243003

F On fire and smoke doors, according to DIN EN 1158 an ED ESR door coordinator and a MK 396 or MK 397 carry bar must be used.





Smoke detector

RM-ED smoke detector for lintel installation
with base for lintel and ceiling installation, with connection option for additional RM-N smoke detectors and HT manual release pushbuttons. Note: If the clearance from door opening to ceiling is greater 1 m, an additional ceiling smoke detector is required.

silver	64840001
white (similar to RAL 9016)	64840011
special colour	64840009

RM-N smoke detector set for ceiling installation
Addition to the integrated ED-RM or RM-ED smoke detectors
Packaging unit 2 pcs.

2x RM-N, white	64830900

HT manual release pushbutton

Flush-mounted "Close door" button, white	19144601175
Surface-mounted box for HT, white	5158533332

FM AP radio module (receiver)
The FM AP radio module is connected to the smoke detection control unit and serves as a receiver for the RM-F radio smoke detectors and HT-F radio pushbuttons. Up to 8 radio devices can be registered. The multicolor, LED-illuminated ring indicates the operating status.

silver	57290001
white (similar to RAL 9016)	57290011
special colour	57290009

FM AP Console

Mounting console for the FM AP radio module	9900057005003

RM-F radio smoke detector
The RM-F radio smoke detector with multicolor, LED-illuminated ring senses smoldering fires as well as open fires with smoke development. The LED-illuminated ring indicates the operating status. The integrated battery is designed for 8 years of operation and can be replaced.

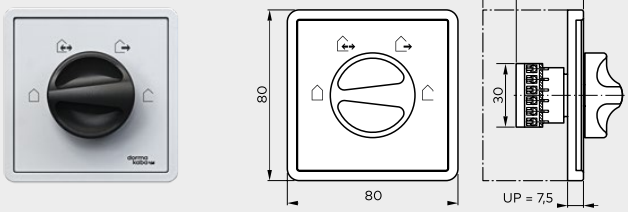
2 x RM-F, white	57280011

HT-F radio pushbutton
The HT-F radio pushbutton adds manual switching capability to the system. A multicolor LED provides information about the operating status. The integrated battery is designed for 8 years of operation and can be replaced. The pushbutton is supplied with a surface-mounted box, but can also be installed in a flush-mounted box with a minimum depth of 50 mm.

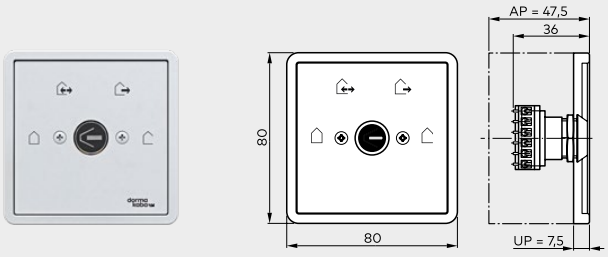
Surface-mounted/flush-mounted "Close door" button, white	57300011

Program switches

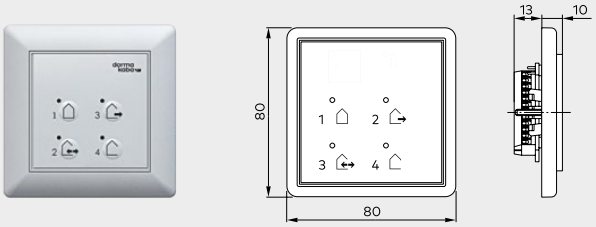
External program switches are available in different designs and have been conceived for all kinds of demands. They offer various options, from a mechanical to a full-electronic version, alternatively also lockable via profile half-cylinder or in a full-electronic way via code. These switches are designed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



Mechanical program switch
4-position, aluminum, flush-mounted version
white, Gira S-Color 19135404150

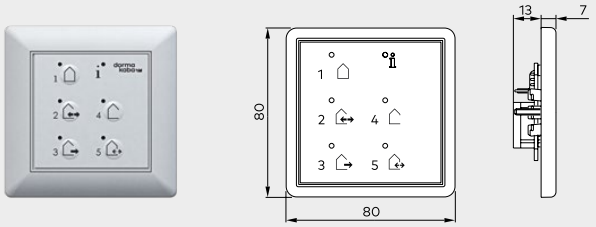


Mechanical and lockable program switch
4-position, aluminum, flush-mounted version
white, Gira S-Color 19135604150

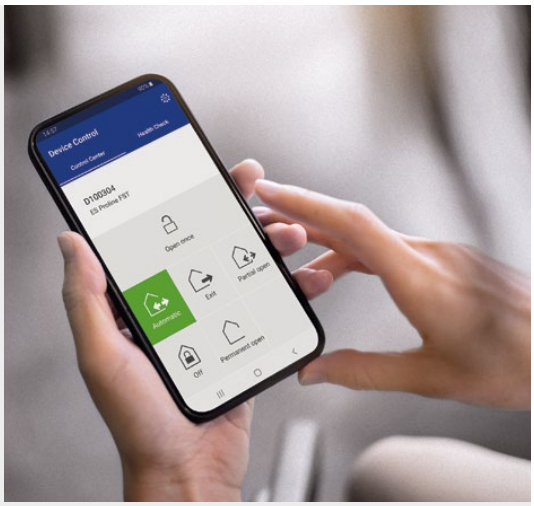


Full-electronic Program switch
...control up to 5 different functions of the automatic door: Off, automatic, exit only (closing time), partial open (1-panel opening in case of 2-panel doors), permanent open. Electronically operated via pushbuttons. Lockable via numerical code or an additional key switch. 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, 4-position 16557001150
EPS-D DCW®, white, 5-position 16577301150



Surface-mounted box for program switch (no illustration)
Surface-mounted box, white 5080531332



Door Pilot App

The dormakaba Door Pilot app allows automatic doors to be easily controlled from a smartphone. Operators from the ES PROLINE series can be equipped with the Door Pilot interface as an option. The app is available in iOS and Android versions and can be obtained from the respective app store.

- Complement to the program switch, convenient operation from a smartphone.
- Check functions easily without needing specialist knowledge.
- No need to incorporate into existing building network.
- Direct contact function for simplified/direct access to dormakaba Service.

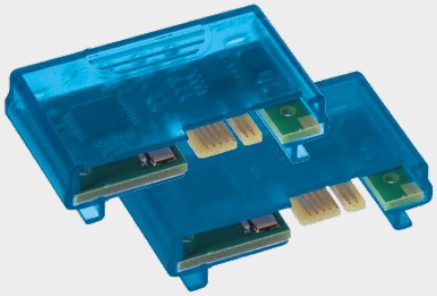
Program switch functions

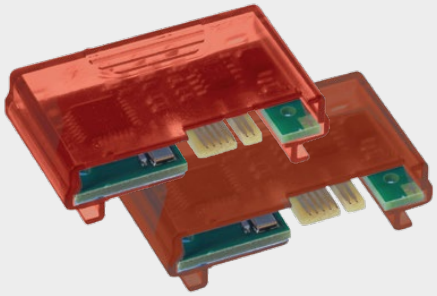
automatic	Opens from the inside and outside – perfect for normal opening hours.
Partial opening	Opens from the inside and outside with reduced opening width – ideal for cold winter days.
Output	Opens from the inside only – ideal for use shortly before closing time.
Permanent open	Door is permanently open – suitable for deliveries or ventilation..
Off	Door remains closed (and perhaps locked) and can only be opened by changing the program switch position or by an externally controlled impulse.
Open-once	For easy opening in close proximity (not possible with the program switch in the “Off” position).

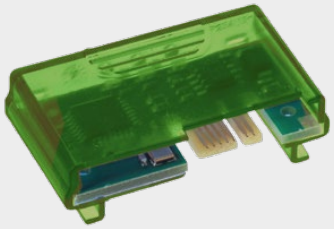
Door status signal contacts

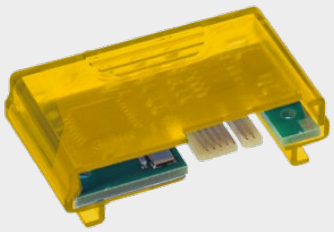
System OK	Maintenance due	Fault detected, service due

Door Pilot interface/Door Pilot stick Bluetooth radio extension for ED operators	30030030









Upgrade cards

The range of functions of the ED 100 and ED 250 swing door operators can be extended with the use of Upgrade Cards. Upon installation of the Upgrade Cards, information is exchanged between operator control unit and Upgrade Card and these are permanently assigned to each other. The desired function can be used as long as the Upgrade Card remains installed in the operator.

- The first Upgrade Card installed becomes a container module. The functions of additional Upgrade Cards are stored in this container module. Each control unit can have only one container module.
- 3 integrated LEDs indicated the status of the Upgrade Card. The red LED lights up for the DCW® Upgrade Card as soon and DCW® users are logged in and it indicates the exchange of DCW® telegrams.

Full-Energy Upgrade Card
With the use of the Full-Energy Upgrade Card, the full adjustment range of the parameters opening and closing speed as well as opening and closing force are available. Use in 2-leaf systems is possible.

Full-Energy blue for ED 100	29251022
Full-Energy transparent blue for ED 250	29251020

Fire Protection Upgrade Card incl. Full-Energy
The Fire Protection Upgrade Card is required for building a hold-open system according to EN 14637 or similar standards. Only with the Fire Protection Upgrade Card installed is the line-monitored detector input for connecting the RM-ED or the integrated smoke detector available. The Full-Energy function is activated automatically. Use in 2-leaf systems is possible.

Fire Protection red for ED 100	29252022
Fire Protection transparent red for ED 250	29252020

Professional Upgrade Card
With the use of the Professional Upgrade Card, the nurse-bed, extended hold-open time, pulse and EVAC/SPV functions can be activated. Use in 2-leaf systems is possible. In 2-leaf systems, 2 Upgrade Cards are required to be able to use the EVAC/SPV function.

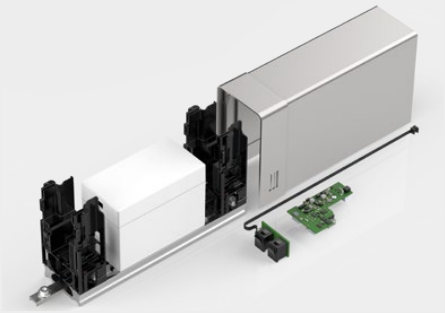
Professional green for ED 100 and ED 250	29253001

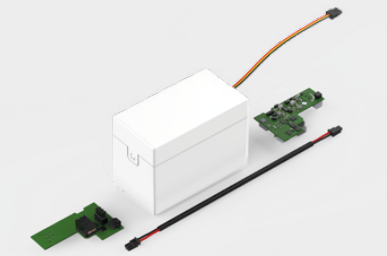
DCW® Upgrade Card
The DCW® Upgrade Card can be used to connect DCW®-compatible accessory components with the operator. Use in 2-leaf systems is possible.

DCW® yellow for ED 100 and ED 250	29254001

Barrier-free Toilet Upgrade Card
When using the Barrier-free Toilet Upgrade Card, the inputs and outputs of the control unit are assigned the functions specifically required for this application and the necessary accessory components can be connected directly. The Barrier-free Toilet Upgrade Card is not used on 2-leaf systems.

DCW® black for ED 100 and ED 250	29253002





Emergency power supply

ED UPS (integrated, uninterruptible power supply)
The integrated ED Emergency Power Supply is made up of an ED mounting/installation kit and the A01 battery.

ED UPS mounting kit with ED cover
Mounting kit for 1-leaf door operator with ED BASIC cover. Installation is in direction of the main closing edge. Using the mounting kit, the ED cover is extended by 230 mm.
Supplied without A01 battery. ED mounting kit for 1-leaf system.

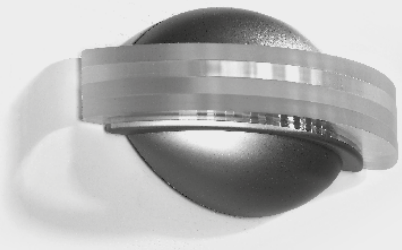
Silver	29263021
White (similar to RAL 9016)	29263022

ED UPS installation kit for ED VARIO and Professional covers
The installation kit is fitted inside the ED cover. A minimum installation space of 210 mm length inside the ED VARIO cover is required.
Note: It is currently not possible to install the integrated emergency power supply and the integrated mechanical door coordinator (ED ESR set) at the same time on 2-leaf door systems. As an alternative, an external door coordinator can be installed. Supplied without A01 battery.

ED mounting kit for 2-leaf systems	29263023

A01 battery (no illustration)
Rechargeable lithium iron phosphate (LiFePo4) battery for installation in an ED mounting/installation kit

29263020



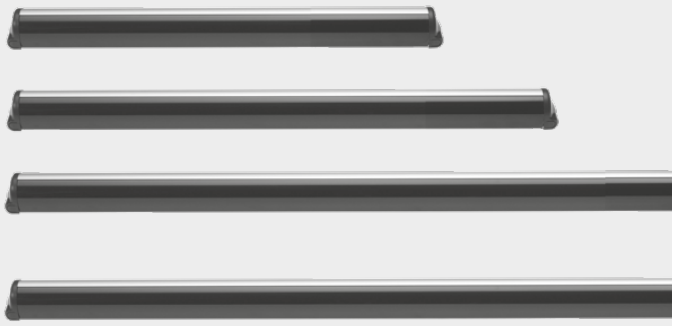
Status indicators

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.

silver	05111631332

Red-green display, flush-mounted

Status Display red-green to Display the status of the door system 24 V, System 55, flush-mounted	16713401170



Safety sensors

Prosecure Opti Safe sensor bar
Self-monitoring safety sensor bar for full personal protection in opening and closing direction according to DIN 18650 and EN 16005.
- Incl. 2,500 mm connection cable
- Connection cable for the optics and 650 mm cable transition (plastic, black)
- Maximum installation height: 3.5 m

Prosecure Opti Safe 700
2 sensor bars with 1 transmitter & 1 receiver module each, length 700 mm

black	86501070
silver	86502070
white	86505070
special colour	86504070

Prosecure Opti Safe 900
2 sensor bars with 1 transmitter & 1 receiver module each, length 900 mm

black	86501090
silver	86502090
white	86505090
special colour	86504090

Prosecure Opti Safe 1200
2 sensor bars with 1 transmitter & 1 receiver module each, length 1200 mm

black	86501120
silver	86502120
wite	86505120
special colour	86504120

Prosecure Opti Safe 1600
2 sensor bars with 2 transmitters & 2 receiver modules each, length 1600 mm

black	86501160
silver	86502160
white	86505160
special colour	86504160

IRS-4 sensor bar
Self-monitoring safety sensor bar for full personal protection in opening and closing direction according to DIN 18650 and EN 16005.
- Incl. 2,500 mm connection cable and cable transition sleeve
- Maximum installation height: 3.0 m

IRS-4 350
1 sensor bar with 1 combined transmitter / receiver module, length 350 mm

silver	294350
white	294343
special colour	294351

IRS-4 1200
1 sensor bar with 2 combined transmitter / receiver modules, length 1200 mm

silver	294110
white	294113
special colour	294111

IRS-4 1600
1 sensor bar with 3 combined transmitter / receiver modules, length 1600 mm

silber	294160
white	294163
special colour	294161

Safety sensor Flatscan SW
Laser scanner to secure the swing zone of the automatic swing doors on hinge side and opposite hinge side according to DIN 18650 and EN 16005.

- Additional protection of the secondary closing edge in the are of the hinges (finger protection according to TÜV certificate, with due regard to residual risks)
- incl. 2.5 m connecting cable
- Hinge side to opposite hinge side connection line and 650 mm cable transition (plastic, black)
- Protection class: IP 54
- dimensions: WxHxD 142 mm x 85 mm x 23 mm, mounting base 7 mm
- Flatscan SW Kit

1sensor DIN left & 1 sensor DIN right

black	86501300
silver	86502300
white	86503300

Flatscan SW left
1 sensor DIN left

black	86501301
silver	86502301
white	86503301

Flatscan SW right
1 sensor DIN right

black	86501302
silver	86502302
white	86503302

Safety sensor Flatscan 3D
Laser scanner to secure the swing zone of the automatic swing doors on hinge side and opposite hinge side according to DIN 18650 and EN 16005.

- Additional protection of secondary closing edge in the area of the door leaves as well as additional safeguarding of the main closing edge
- 4 curtains for a volumetric detection range
- Incl. 2.5 m connection cable
- Hinge side to opposite hinge side connection line and 650 mm cable transition (plastic, black)
- Protection class: IP 44
- dimensions: WxHxD 145 mm × 88 mm × 60 mm, mounting base 7 mm

Flatscan 3D Kit
4 curtains possible

black	86521300
silver	86522300
white	86513300

Flatscan 3D left
4 curtains possible

black	86521301
silver	86522301
white	86523301

Flatscan 3D right
4 curtains possible

black	86521302
silver	86522302
white	86523302

Motion detectors

Eagle Artek
Eagle Artek radar motion detector, directional,
with cross-traffic optimization
Ambient temperature -20°C to +55°C
Dimension: W x H x D = 120 x 80 x 50 mm

black	86901000
silver	86902000
white	86903000

Eagle Artek Ceiling mounting system
Ceiling mounting system for radar motion detectors Eagle Artek

black	86941000
white	86940000

Eagle Artek Alu weather protectione
Weather protection hood for radar motion detector Eagle Artek

black	86930000

Eagle Artek Mounting bracket
Mounting bracket for radar motion detector Eagle Artek

black	86950000

Eagle Artek Retrofit DU 12
Retrofit adapter screwable for on-site cable to radar motion detector Eagle Artek

(1 piece always only in delivery unit of 12)	86999000

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
Dimension: W x H x D = 123 x 65 x 58

black	86111000
silver	86112000
white	86113000

Rain protection cover/ceiling angle bracket
For Opti Motion detectors

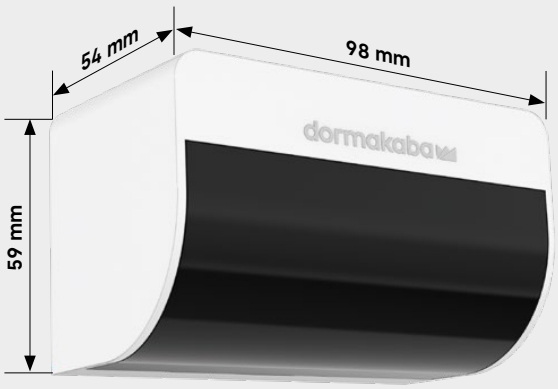
black	86131900

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,

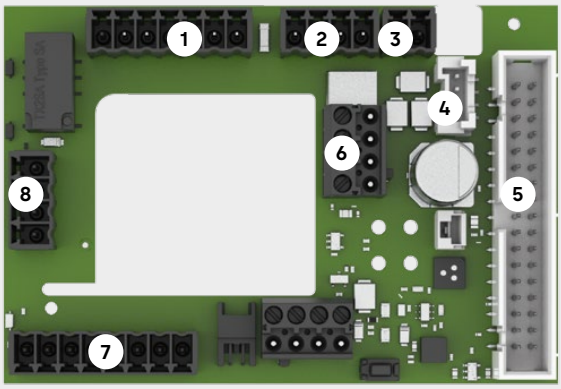
ambient temperature -20 °C to 60 °C	86991900

MotionIQ



Motionsensor M A01
The Motionsensor M A01 can be used for 1-leaf and 2-leaf door systems indoors and outdoors. An additional weather protection cap is not required. The installation position is centrally above the door system.
Technical data: Supply voltage 24 V DC +/-15%, Power input < 2.5 W, Temperature range -20 °C to +55 °C, Humidity 0 % to 95 % non-condensing, Protection class IP54, Detection range approx. 10 m x 4,5 m at 2.2 m installation height and a 30° angle, Installation height 2 m to 4 m, Data interface CAN dormakaba
Scope of delivery, Motionsensor M A01, CAN connection cable, Mounting kit for radar sensor

black	86891900
silver	86892900
white	86893900



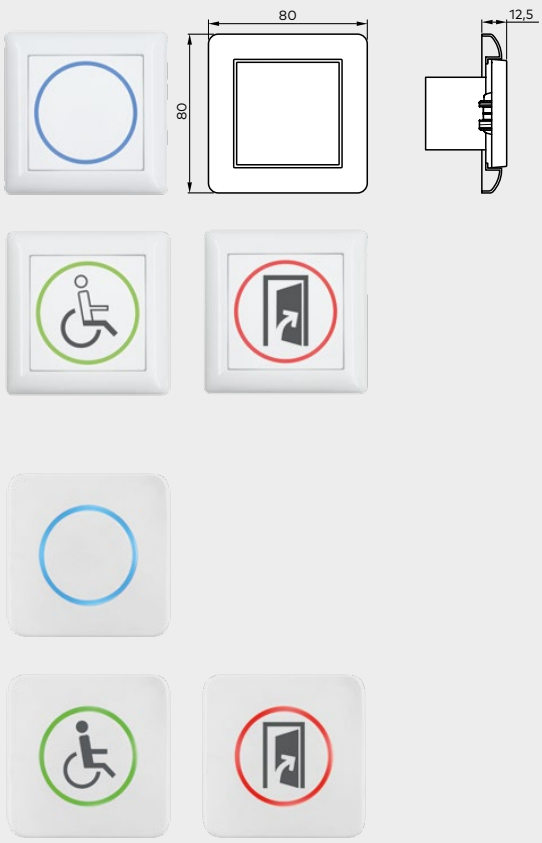
ED connection board CAN
The ED connection board CAN includes the Motion IQ Controller and provides CAN connection for the M A01 sensors. An RGB LED function display shows the current operating status and any faults. Parametrisation is via the interface of the ED operator. Additional connections are available apart from CAN connection for the M A01 motion sensors.
Technical data: Supply voltage 24 V DC +/15 %, Power input approx. 20 mA, Temperature range -15 °C to +50 °C, Humidity up to 93 %, non-condensing, Protection class IP20.
The ED CAN Multi Adapter is required for use of MotionIQ on 2-leaf doors or an external PGS.
Connections

1 Lock, e.g. SVP
2 Smoke detector, e.g. RM-ED
3 Emergency-off function, cut-off operator function
4 RS232 connection socket (connection ED control)
5 Connection flat ribbon cable for ED control
6 Connection terminal CAN connection cable for radar sensors
7 Safety sensors hinge side and opposite hinge side
8 Signal input for access control, impulse outside and impulse inside

ED CAN connection unit	29256002

ED CAN Multi Adapter (no illustration)
The ED Multi Adapter allows connection of an external program switch (Off, Exit, Automatic, Permanently open functions) and actuation via an external voltage supply. The adapter also provides additional connection options for future CAN components. Combining with the BRC-R radio receiver is not possible.

ED CAN Multi Adapter	29280061



Contactless radar pushbutton

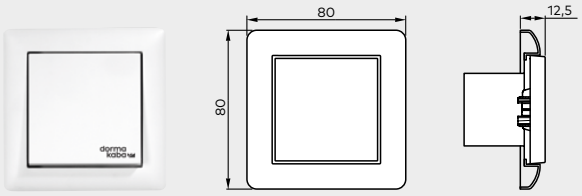
CleanSwitch IP20
contactless radar pushbutton, System 55, protection class IP20, flush-mounted, detection zone adjustable 10-50 cm, dimensions: 80 x 80 x 40 mm, switch insert 55 x 55 mm, colour: white

neutral	16737401170
wheelchair	16737501170
door open	16737601170

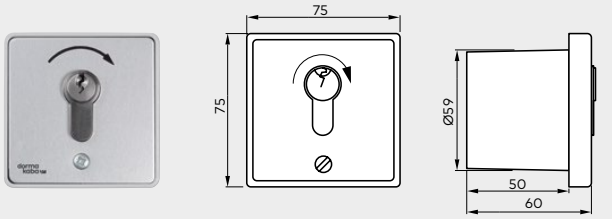
CleanSwitch IP65
contactless radar pushbutton, System 55, protection class IP65, flush-mounted, compatible with conventional flush-mounted boxes, detection zone adjustable 10-50 cm, dimensions: 80 x 80 x 38 mm, switch insert 55 x 55 mm, colour: white

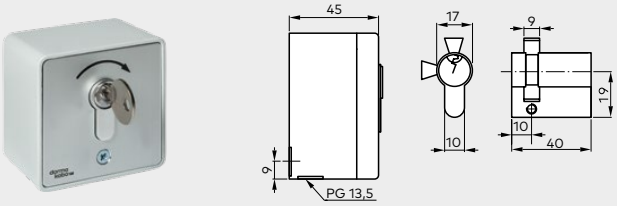
neutral	16744001170
wheelchair	16744101170
door open	16744201170

Activation switches and key switches



Pushbutton
single-pole, changeover contact, single frame flush-mounted version, concealed, System 55
white 19144701170





Key switches KT 3-1 AP/UP
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 mmm

KT 3-1 flush-mounted version 5054531332

KT 3-1 surface-mounted version 5054631332

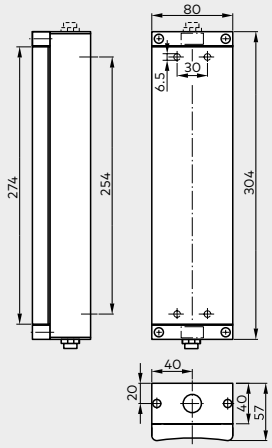
Key switches ST 32 DCW®
Tamper-proof key switch with LED display (red/green), silver-colored LM housing with front plate, suitable for surface-mounted and flush-mounted installation, for controlling the door management system TMS and SafeRoute. Adjustable and restrictable functions of the key switch 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

Key switch CAN
Switch with single-pole changeover contact, with Europrofile half-cylinder in line with DIN 18252, half 30-32.5 mm, length 40.5-43.5 mm, locking cam position left (90°) (interchangeable with master-key system half-cylinder), with cover for System 55, not suitable for surface-mounted boxes, without frame, possible from ED firmware 3.3.
white 16715801150

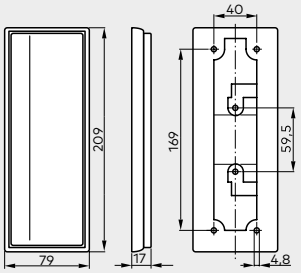
MTB 4/1 metal keypad
to enter the activation code (to open the door) and for programming purposes, surface-mounted version
75 x 75 x 11.5 mm 05079331332

EB 4/1 Electronic module,
incl. 2 m connection cable, plastic cover, surface-mounted version
black 05063431332

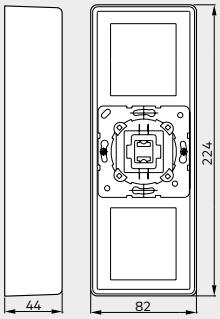
Pushbuttons (elbow)



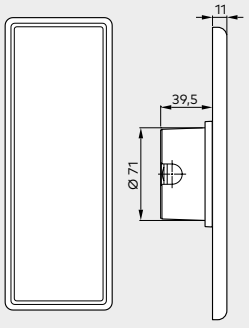
Large-sized pushbutton (elbow)
Flush-mounted version/surface-mounted version,
304 x 80 mm
silver 90410015



Large-sized pushbutton (elbow)
Surface-mounted version,
flat design, plastic, 209 x 79 x 17 mm
grey 05080231332



Surface-mounted version



Flush-mounted version

Large-sized pushbuttons
without switch pad, incl. switch, 224 x 82 mm
silver-coloured 05095231332

With box for surface-mounting, without switch pad, incl. switch, 224 x 82 x 44 mm
silver-coloured 05095531332

Switch pad
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

Stainless steel buttons

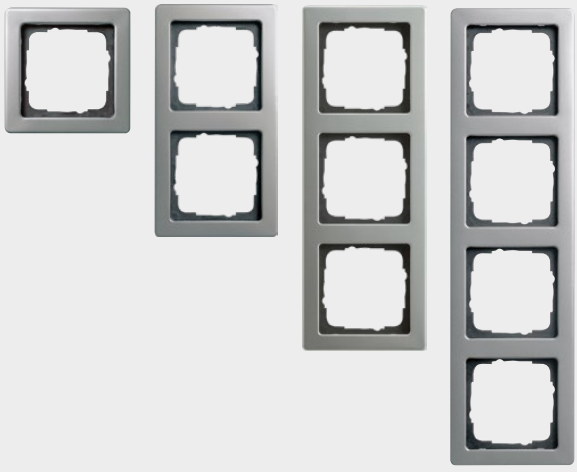
Switch pad
stainless steel for System 55, colour: silver

neutral	16717502170
wheelchair	16717702170
door on	16717602170
on/locked	16718102170
partial opening	16718002170
permanent open	16717902170
automatic	16717802170

Status Display red-green
to Display the status of the door
system 24 V
Colour: red/green 16713401170

Sealing set IP 44 for stainless steel pushbutton
system 55 05214633332

Centre insert
suitable for System 21 and System 55, concealed 5229933332

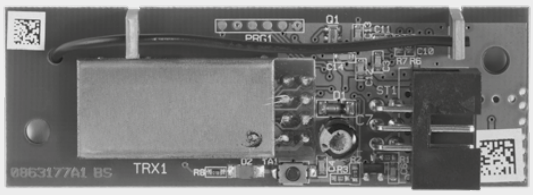


Cover frame
for System 55 pushbuttons
Colour: silver

Single for stainless steel buttons	05214233332
Double for stainless steel buttons	05214333332
Triple for stainless steel buttons	05214433332
Quadruple for stainless steel buttons	05214533332

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.



Receiver 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.

29302002

Wall transmitter BRC-W
The battery-operated wall-mounted transmitter can easily be glued or screwed to the wall.
The pushbutton can also be installed without the frame into existing switch series System 55. Suitable for the interior under lighter conditions.
Required battery type: 2 x 1.5 V LR03 (AAA)

29301005

Hand-held transmitter BRC-H 3
Bidirectional hand-held transmitter BRC-H, battery-operated, 4 channels, LED for feedback purposes, shockproofdesign.

29304001

Battery-operated transmitter BRC-T
Battery-operated transmitter, designed for installation into a push-button 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.

29301003

Space for your notes

Our Sustainability Commitment

We are committed to foster a sustainable development along our entire value chain in line with our economic, environmental and social responsibilities toward current and 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 impact through its entire life cycle, dormakaba provides Environmental Product Declarations (EPD), based on holistic life cycle assessments.

www.dormakaba.com/sustainability

Our offering

Access Automation Solutions

Entrance Automation
Entrance Security

Access Control Solutions

Electronic Access & Data
Escape and Rescue Systems
Lodging Systems

Access Hardware Solutions

Door Closers
Architectural Hardware
Mechanical Key Systems

Services

Technical Support
Installation and commissioning
Maintenance and Repair

WN 05374151532, EN, 06/2025
Subject to technical modifications.

dormakaba.com

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