



ED 100, ED 250

Mounting instructions
Firmware V2.8/Hardware 01.2022

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EN

dormakaba 

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1 General information

This documentation contains important instructions for installation and safe operation. Read these instructions carefully before beginning the installation. Follow all of the enclosed instructions to guarantee your safety. Incorrect installation may result in serious injuries. The use of control elements, settings or procedures which are not described in this documentation may cause electric shock, danger due to electric voltages/currents and/or danger due to mechanical processes.

1.1 Intended use

ED 100 and ED 250 are electromechanical swing door operators and are used exclusively for opening and closing interior swing doors with a door leaf weight of max. 160 and 400 kg respectively.

The corresponding version is selected depending on the door leaf width and weight.

Before installing the device on a smoke or fire door, check that the device is approved in conjunction with the door.

Before getting started with the installation, ensure that your device is suitable for the respective door situation using the table in chapter 4 and that the door is equipped with hinges suitable for automatic mode. The cable length for external components must not exceed 30 m.

1.2 Limitation of liability

ED 100 and ED 250 must only be used according to their intended use.

dormakaba Deutschland GmbH accepts no liability for damages resulting from unauthorized changes made to the door system. No liability is accepted for the use of accessories which have not been approved by dormakaba.

1.3 Risk assessment by the installer

The manufacturer, i.e. the person performing the installation, and the contracting authority/facility drive must jointly perform an individual risk assessment when planning the system. In this regard, we refer to the "Risk assessment" form, which has been made available to provide support with performance. It can be found under the PRODUCTS tab of our website at www.dormakaba.com.

Due to particular spatial circumstances and the door user groups to be expected, it may be sensible to use safety sensors also in low-energy mode.

1.4 Particular safeguard requirement with regard to vulnerable persons

If the risk assessment indicates that the door leaf could hit and therefore injure someone, additional sensors must be attached to eliminate the danger. This must particularly be taken into consideration if children, older persons or disabled individuals use the door system, too.

1.5 Standards, laws, guidelines and regulations

The latest versions of the generally valid and country-specific standards, laws, guidelines and regulations must be observed.

1.6 Use of ED 100 and ED 250 on fire and smoke protection doors

Before installation, it is necessary to check whether the operator and door combination is permitted and complies with local standards. Operators must be switched off in the event of fire as a rule. When used in Germany, the system must be operated as a local hold-open system. The EVAC function can be used as an optional subordinate function.

1.7 Residual risk

Depending on the structural circumstances, door variant and potential safeguards, residual risks (such as minor crushing, impact with limited force and the risk to unsupervised children) cannot be excluded. The danger spot on the secondary closing edge of all swing doors (including those which are manually operated) is generally known to all door users. This danger spot cannot be influenced by the drive manufacturer. Its safeguard is often not feasible from a constructive and functional standpoint. Clamping protection (such as a rubber or textile cover) which may be suitable for this can be obtained from specialist dealers and is not included in the scope of delivery.

1.8 Briefing

Once the door system has been successfully set, commissioned and functionally tested, the installation and operating instructions must be handed over to the facility drive. A briefing must take place on operating and maintaining the door system. Unless specified otherwise, all dimensions are given in mm.

1.9 Applied Safety instructions



DANGER

This signal word indicates a situation of immediate risk, which will lead to death or serious injury if not averted.



WARNING

This signal word indicates a possible hazardous situation which may result in death or serious injury if ignored.



CAUTION

This signal word indicates a situation of potential risk, which could lead to minor or slight injury if not averted.



ATTENTION

This signal word indicates a situation of potential risk, which could lead to damage to property or the environment if not averted.



TIPS AND RECOMMENDATIONS

This signal word indicates useful information for efficient and trouble-free operation.



DANGER

Danger to life through electric current

There are live components inside the door drive.

- Do not insert any metal objects into the openings of the door drive.



DANGER

Danger to life through electric current

If the ED 100 or ED 250 is mounted on a metal door leaf, there is a risk of the current being transferred to the door leaf.

- Ground door leaf.



WARNING

Risk of injury from broken glass

Damage to glass elements may lead to broken glass

- Use safety glass for glass door leaves and side panels.



CAUTION

Risk of injury by crushing

On doors with drives there is a risk of crushing and shearing on slide rail levers and rods.

- Inform the door's facility operator of the danger.

2 Safety

2.1 Safety instructions

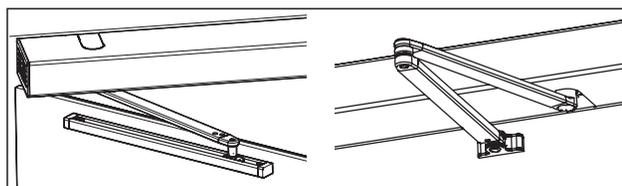
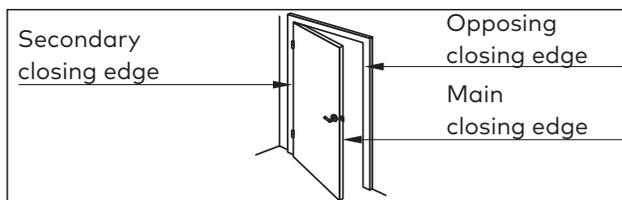


DANGER

Danger to life through electric current

Works on electrical systems must only be carried out by qualified electricians.

- Before starting work on electrical systems and equipment, establish a voltage-free state and maintain this state while carrying out the work.

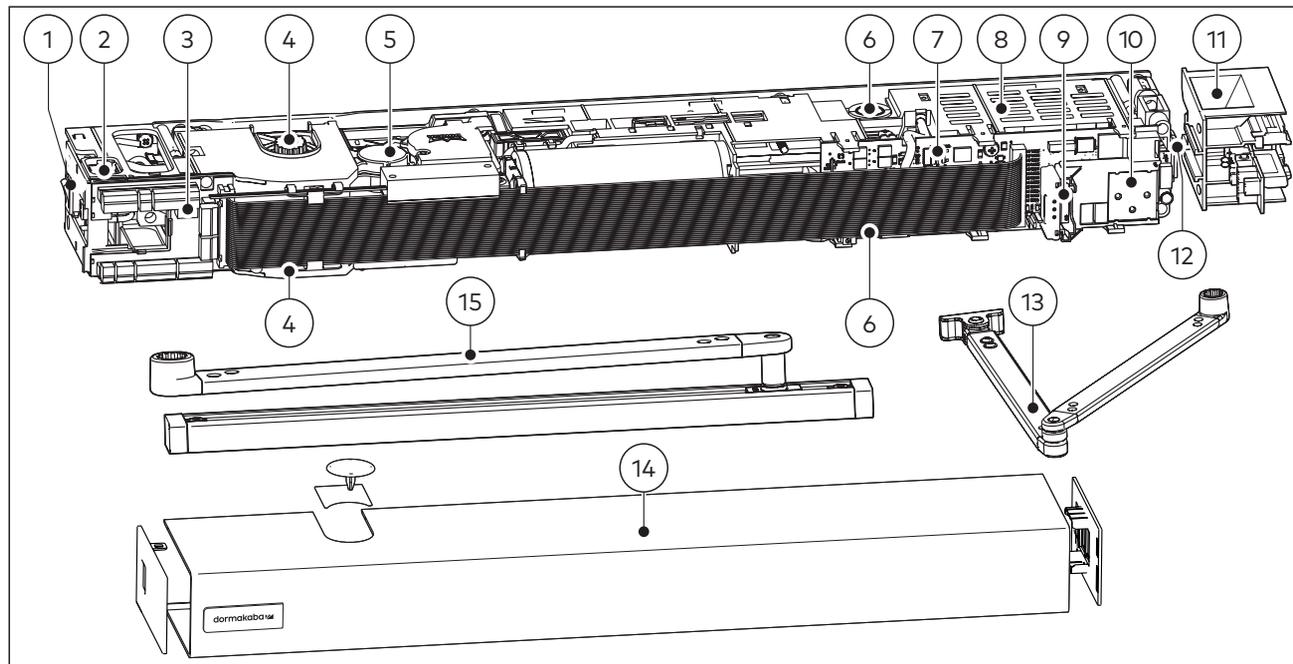


3 Product description

3.1 Drive unit

The drive unit comprises all the core components.

The drive unit is selected according to the door leaf width and the door leaf weight.



- | | |
|---|--|
| (1) Mains switch | (9) Slot for Upgrade Cards |
| (2) Mains connection | (10) User interface with information display |
| (3) Connection unit | (11) * ED Cover Basic RM, ED Cover Vario RM |
| (4) Axle output on both sides | (12) Internal program switch |
| (5) Drive unit (motor/gear/closer spring) | (13) * Standard arm |
| (6) Closing force adjuster | (14) * Complete cover |
| (7) Control unit | (15) * Slide channel (set) |
| (8) Switching power supply unit | |
- * Not included in the drive unit's scope of delivery.

3.2 Functions

3.2.1 Operating modes

The ED 100, ED 250 can be operated in 2 modes: as a door closer or an automatic swing door drive. In the door closer mode (see chapter parameterization, parameter hd = 1), the drive unit is optimized for manual use. This operating mode is to be used with the power-assist function optionally available in this operating mode if the doors are operated mainly manually and if a door closer-like behavior is desired. The automatic mode (see chapter parameterization/service, parameter hd = 0) is designed for the automatic passage following a pulse generated by a motion sensor or pushbutton.

3.2.2 Power-assist-function

In the door closer mode, the power-assist function (see chapter parameterization/service, parameter hd = 1) can be activated. Power assistance will then be available during the manual opening. The power assistance will be automatically adjusted to the set door closer parameter. The power assistance can be adjusted so that the requirements of the DIN 18040, DIN Spec 1104, CEN/TR 15894, BS 8300/2100 and document "M" are met even up to EN 6.

The smallest adjustable opening force is 23 N (5 lbf) unless the hold-open system has been activated or the power failed. This power-assist function allows you to comply with the requirements of the EN 1154 and at the same time to allow for a barrier-free access in normal mode. A combination with the Push & Go function or the wind load control is not possible as they counteract the easy manual opening.

3.2.3 Push & Go

The Push & Go function (see chapter parameterization/service, parameter PG = 1) can be activated in the automatic mode. The door will then be automatically opened when the door is manually moved from the "CLOSED" position by an angle of 4° into the "OPEN" direction.

3.2.4 Wind load control

The drive units ED 100 and ED 250 are especially suited for external doors that are exposed to changing wind loads or internal doors separating rooms in which pressure differences might occur. In automatic mode, the wind load control monitors the actual speed and will compensate for it if the speed deviates from the set value. In combination with the Upgrade Card Full Energy the drive unit can provide up to 150 N at the main closing edge, which can then be used to compensate for environmental influences. The closing process during the last 5° can be additionally supported by the electronic latching speed. The door can be passed through manually. We recommend using the Push & Go function.

3.2.5 Evacuation function EVAC

Swing door drives are switched off in the event of an alarm and can only be accessed manually. Barrier-free access is then no longer possible, especially with heavy doors. When the EVAC function is activated, the operator does not switch off completely in the event of an alarm, but deactivates the motion detectors and optionally the safety sensors as well, and switches from full to low energy operation. The Power Assist function can now continue to be used without safety sensors to ensure barrier-free access. In addition, time-limited automatic opening via the Night/Bank input is possible for 20 seconds. To use the EVAC function, one Upgrade Card Professional is required per operator. Control is by means of a normally closed/ normally open contact on the feedback contact 43/3. The triggered function is displayed internally with IN18.



Note

In Germany, this function may only be used in addition to operation as a local hold-open system.

3.2.6 Smoke extraction/Pressure ventilation function SPV

Doors are often exposed to pressure differences. This may create large loads, particularly in combination with smoke extraction and pressure ventilation systems, which stop doors from opening or closing properly. The SPV function provides an additional set of parameters that can be set with the hand-held terminal in order to optimally adapt the travel parameters to the pressure conditions at the time of an alarm. To use the SPV function, the Upgrade Card Professional is required for each drive. Control is by means of a normally closed/ normally open contact on the feedback contact 43/3. The triggered function is displayed internally with IN19. The SPV-relevant parameters are set via the hand-held terminal.

3.3 Low energy product

The ED 100/250 can be adjusted so that the requirements of a low energy application (low energy drive unit) are in accordance with the EN 16005 or DIN 18650, ANSI 156.19 and BS 7036-4. During the commissioning, the drive parameters must be adjusted according to the specifications of the respective standard.

The required safety of the system will be achieved with the following characteristics:

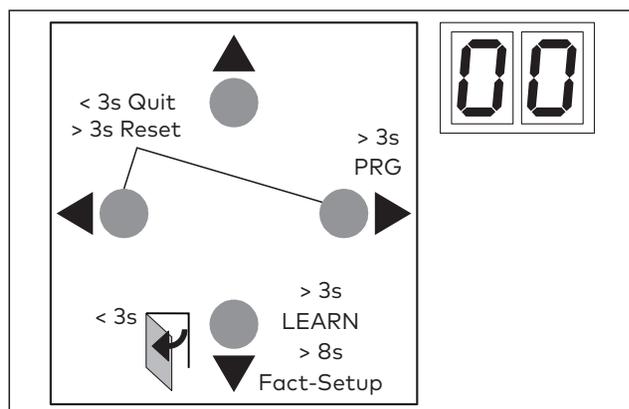
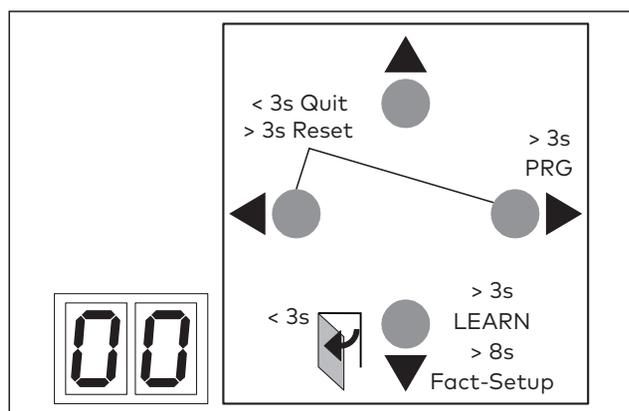
- Reduced dynamic door panel forces/contact force
- Low speed
- Reduced static door panel forces/contact forces
- Force limitation

Due to system tolerances, the actual forces on the door panel have to be measured after the teach-in run and adjusted, if necessary, in order to comply with the local standards and regulations. Additional safety sensors to safeguard the rotational movement are not required but optional if this becomes necessary due to a risk assessment to be carried out individually. The safeguarding of the secondary closing edge must be considered separately.

3.4 Control elements

The drive units ED 100 and ED 250 are electromechanical drives. The interaction between motor gear unit and control unit makes the automatic opening and closing possible in the first place. The control unit must know certain parameters of the door in order to achieve the ideal behavior. The control unit is equipped with a user interface featuring 4 pushbuttons and a 2 digit display. This allows you to make all settings specified in the parameter list.

During the commissioning, the key functions and the display are configured in such a way that - independent of the installation direction of the pushbuttons - always the same functions and the numbers and digits are shown correctly. The legend of the pushbuttons can be removed and turned.



By pressing the pushbuttons, you can execute the following functions:

- ▼ **Lower pushbutton**
 - Setting of the installation direction following a mains reset
 - Browsing in parameters and error messages
 - Reducing the parameter value
 - Opening pulse
 - Teach-in run
 - Reset with factory setting (Fact-Setup)
- ▲ **Upper pushbutton**
 - Browsing in parameters and error messages
 - Increasing the parameter value
- ▶ **Right pushbutton**
 - Open parameter menu
 - Change selected parameter
 - Save changed value
- ◀ **Left pushbutton**
 - Cancel parameter change
 - Exit parameter menu
- ◀ ▶ **Left and right pushbutton simultaneously**
 - Error acknowledgement
 - Reset

3.5 Upgrade-Cards

The Upgrade Cards allow you to extend the functional range of the automatic swing door operator units ED 100 and ED 250. During the installation of the Upgrade Cards, information between the control unit and the Upgrade Card is exchanged and assigned. The desired function can be used as long as the Upgrade Card is installed in the drive unit.

- The first installed Upgrade Card becomes the container module. The functions of additional Upgrade Cards are saved in the container module. Each control unit features only one container module.
- The status of the Upgrade Card is indicated by 3 integrated LEDs. The red LED lights in case of the DCW Upgrade Card as soon as the DCW members are logged on and it indicates that DCW telegrams are being exchanged.

3.5.1 Combination options

There are several functions available. The Upgrade Cards are colored in order to differentiate between them.

Upgrade-Card	Color	ED 100	ED 250
Full-Energy	blue	X	
Full-Energy	blue transparent		X
Fire Protection	red	X	
Fire Protection	red transparent		X
Professional	green	X	X
DCW	yellow	X	X
Barrier-free WC	black	X	X

3.5.2 Upgrade-Card Full-Energy – blue/blue transparent

The Upgrade Card Full Energy allows you to make use of the full setting range of the opening and closing speed parameters as well as the opening and closing torque. It can be used for 2-panel systems.

3.5.3 Upgrade-Card Fire Protection – red/red transparent

The Upgrade Card Fire Protection is needed to set up a hold-open system in accordance with EN 14637 or similar standards. The line-monitored detector input for the connection of the RM-ED or the integrated smoke detector is only available with the installed Upgrade Card Fire Protection. The Full Energy function will be automatically activated. It can be used for 2-panel systems.

3.5.4 Upgrade-Card Professionell – green

The Nurse bed, Extended hold-open time, Current pulse and EVAC/ SPV functions can be activated using the Upgrade Card Professional. Use in 2-leaf systems is possible. Two Upgrade Cards are required for 2-leaf systems to use the EVAC/SPV function.

3.5.5 Upgrade-Card DCW – yellow

The Upgrade Card DCW allows the connection of DCW-compatible accessory components to the drive unit. It can be used for 2-panel systems.

3.5.6 Upgrade-Card Barrier-free WC – black

With the use of the Upgrade Card Barrier-free WC, the inputs and outputs of the control unit are assigned with the functions especially required for this application. The required accessory components can be directly connected. The Upgrade Card Barrier-free WC is not used for 2-panel systems.

3.6 Accessories

In addition to an extensive range of accessories, many activators, locking devices, safety sensors and accessories of other manufacturers are available and could be used together with the drive units ED 100 and ED 250. dormakaba cannot guarantee the compatibility with devices from other manufacturers. If those devices are always used, the full functional range of the drive units may not be available or the devices may not function properly. The drive unit or the connected device may also become damaged. The operator can provide a maximum 1.5 A with 24 V DC for external consumers. In case more current is required (even if only temporarily), an external power supply is to be used in order to prevent a malfunction of the drive unit.

3.6.1 Activator

In general, the following types of devices are activators: radar motion sensors, passive infrared motion sensors, pushbuttons, switches, sensor buttons, radio, IR-receivers, access control systems, telephone and intercom systems.

Minimum requirements:

Operating voltage when supplied by the drive unit:
24 V DC +/- 5 %

Pulse duration:
min. 200 ms

Potential-free output:
(in case a signal input internal is used,
external detector or night/bank)

Energized output (telephone systems):
max. 24 V DC/AC +/- 5 %

3.6.2 Locking device

In general, the following types of devices are locking devices: electrical door opener (E-opener), motor locks, multi-point locking device with response contact, holding magnets.

Motor locks without a locking response can be directly connected to the drive unit if the locking time is less than 4 seconds. In order to ensure the safe operation of the combined drive unit and locking device, the locking device must meet the following specifications.

Minimum requirements:

Operating voltage when supplied by the drive unit:
24 V DC +/- 5 %

Operating voltage with an external supply:
max. 48 V DC/AC

Load of the contact relay locking:
max. 1 A

Switch-on time electrical door opener:
min. 30 %

Switch-on time motor lock:
100 %

3.6.3 Key switch button ST 32 DCW

Key left > 3s: A connected DCW program switch switches to off and the red LED is on.

Key right < 3s: Night/bank pulse

Key right > 3s: A connected DCW program switch switches to automatic and the green LED is on.

3.6.4 I/O-module DCW

Adress: 00 (DIP switch position)
In 1 – In 4 are without function

Functions for Out 1 to Out 4
(adjustable via hand terminal)

0	No Function	4	Door closed and locked
1	Door is closed	5	Information or error
2	Door is open	6	Larger than door angle x°
3	Error		

Factory setting:

Out 1 **4** Out 2 **2** Out 3 **5** Out 4 **6**

3.7 Technical data

Application conditions

Ambient temperature	- 15 to + 50 °C
Only for dry rooms	Relative air humidity max. 93 % non-condensing
Power supply	230 V AC +10 %/-15 %, 50 Hz
Protection class	IP 20

General

Dimensions (WxHxD)	685 x 70 x 130 mm
Min. clearance between hinges 2-panel	1,400 mm
Min. clearance between hinges 2-panel with ESR	1,450 mm
Min. clearance between hinges 2-panel with VARIO casing	1,500 mm
Drive unit weight	12 kg
Power supply for external consumers	24 V DC +/- 5 %, 1,5 A
Door opening angle	Max. 95° – 110° depending on the type of installation
Fuse protection provided by the customer	16 A
Operating noise	Max. 50 dB(A)

Inputs

Connecting terminals	Max. 1.5 mm ²
Potential-free activator	Internal and external (NO contact)
Night/bank (intercom)	8 – 24 V DC/AC + 5 %
Night/bank (key switch)	Make contact/ NO/NC contact
Safety sensor	BS and BGS (NC contact)
Test signal safety sensor	BS and BGS
Shutdown drive function (door lock switch)	NC contact/ NO contact

Outputs

Connecting terminals	max. 1,5 mm ²
Potential-free status contact	Door closed Door open Error Door closed and locked

Integrated functions

Latching action	Force is adjustable
Hold-open time in case of automatic opening	0 – 30 seconds (Optional 0 – 180 seconds)
Hold-open time night/bank	0 – 30 seconds
Hold-open time in case of manual opening	0 – 30 seconds
Blocking behavior	Reversing/ door closing function
Unlocking time door opener	0 – 4 seconds
Locking response	Motor lock
Wind load control	Up to 150 N
Voltage independent braking circuit	Adjustable with potentiometer
LED status display	<ul style="list-style-type: none"> green - Operating control voltage red - Error message yellow - Service interval display
Integrated program switch	Off Automatic Permanent open Exit only (only for 1-panel systems)
User interface with information display	Status display and parameterization
Slot for Upgrade Cards	Extension of the functional range
Update interface	Update firmware
TMP – Temperature Management Program	Overload protection
IDC – Initial-Drive-Control	Driving cycle optimization
Cycle counter	0 – 1,000,000 (meaningful division)
Power assist function	Servo assist in case of a manual opening
Push & Go function	Door opening in case of a manual movement of 4°

ED 250

Max. power input	240 Watt
Closing torque	EN 4–6 infinitely variable
Max. door panel weight up to a lintel depth of 300 mm	400 kg, depending on the door panel width
Max. door panel width 301 – 500 mm lintel depth	160 kg
Door panel width	700 – 1,600 mm
Door panel width fire protection	700 – 1,600 mm
Opening speed 0 – 90°	3* – 12 seconds
Closing speed 90 – 0°	4* – 21 seconds
Axis extension	20/30/60/90 mm
Lintel depth slide channel (CPD)	+/- 30 mm (- 60 mm)
Lintel depth standard arm assembly	0–500 mm

ED 100

Max. power input	120 Watt
Closing torque EN 1154	EN 2–4 infinitely variable
Max. door panel weight up to a lintel depth of 300 mm	160 kg, depending on door panel width
Door panel width	700–1,100 mm
Opening speed 0 – 90°	4* – 12 seconds
Closing speed 90 – 0°	5* – 21 seconds
Axis extension	20/30/60 mm
Lintel depth slide channel (CPD)	+/- 30 mm (- 60 mm)
Lintel depth standard arm assembly	0–300 mm

- * Depending on the door leaf weight automatically limited according to EN 16005 or DIN 18650, BS 7036-4 and ANSI 156.19 with operating mode low-energy. Max. speeds will only be reached in operating mode full-energy, a low door leaf weight and a learned opening angle of min. 95°.

3.8 Torque overview

ED 100

Installation type	Lintel mounting on hinge side, pull version of slide channel		Lintel mounting on opposite hinge side, push version of standard arm/ push version of slide channel	
	minimum	maximum	minimum	maximum
Closer size pursuant to EN 1154	EN 2	EN 4	EN 2	EN 4
Manual closing torque (Nm) ^{***}	13	37	13	37
Automatic closing force (N) ^{**}	20	FE: 150/LE: 67	20	FE: 150/LE: 67
Manual opening torque (Nm)	30	50	35	55
Automatic opening force (N) ^{**}	20	FE: 150/LE: 67	20	FE: 150/LE: 67
Opening force of manually activated power-assist function (N) *	23	23	23	23

ED 250

Installation type	Lintel mounting on hinge side, pull version of slide channel		Lintel mounting on opposite hinge side, push version of standard arm/ push version of slide channel	
	minimum	maximum	minimum	maximum
Closer size pursuant to EN 1154	EN 4	EN 6	EN 4	EN 6
Manual closing torque (Nm) ^{***}	26	65	26	90
Automatic closing force (N) ^{**}	20	FE: 150/LE: 67	20	FE: 150/LE: 67
Manual opening torque (Nm)	55	85	60	90
Automatic opening force (N) ^{**}	20	FE: 150/LE: 67	20	FE: 150/LE: 67
Opening force of manually activated power-assist function (N) *	23	23	23	23

FE With installed Full-Energy or Fire Protection Upgrade Card

LE Low-energy basic device without Upgrade Card

* If power-assist support set to maximum, effective from an opening width of approx. 3°.

** The torque is available in the event of automatic opening in automatic mode.

*** In the push version of the slide channel installation type, the forces reduce by approx. 33%.

4 Preparing for installation

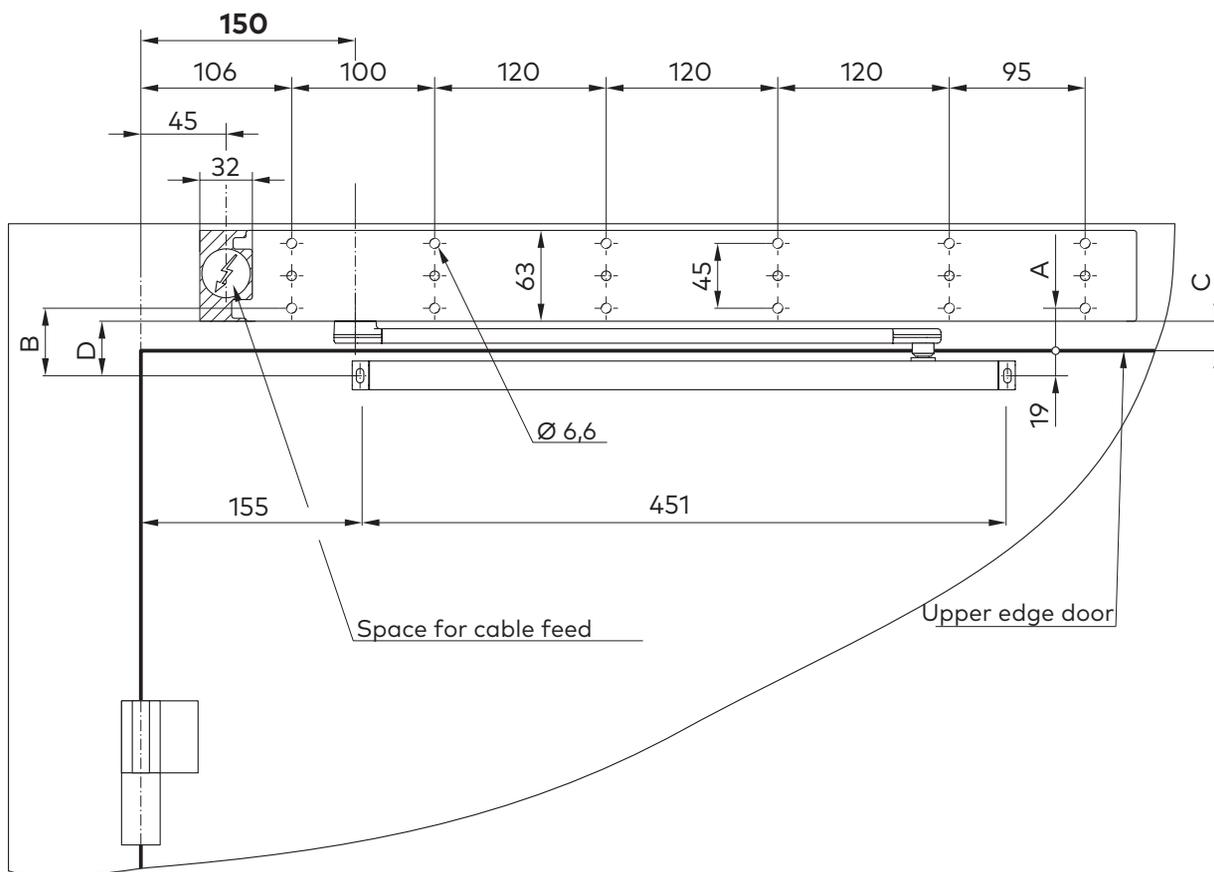
1. Use the following data to check whether the device meets the necessary requirements. You can get started with the installation process if the parameters have been complied with.

	ED 100 EN 3 – 4	ED 250 EN 4 – 6	EN 7
Standard arm 225 29271xxx	F/225	F/225	F/125
Standard arm 500 29272xxx	F/300	F/500	o
Pull version of slide 29275xxx	F/30	F/30	o
Push version of 29275xxx	o	F/EN4/30	o
Pull version of slide channel CPD 29276xxx	F/60	F/60	o
Push version of channel CPD 29276xxx	o	o	o
Axle extension	20 mm 29278012	F	F
	30 mm 29278013	F	F
	60 mm 29278016	F	F
	90 mm 29278019	x	F/350

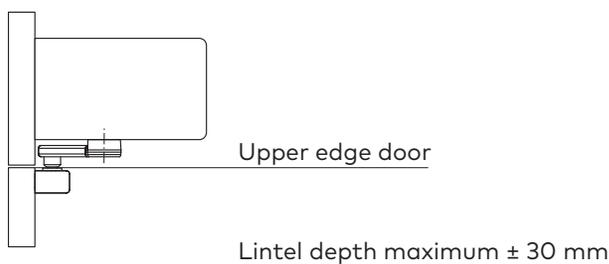
- F** Suitable for use on standard, fire and smoke doors.
- F/xxx** Suitable for use on standard, fire and smoke doors; the lintel depth is limited to xxx mm.
- F/EN4/xxx** Suitable for use on standard, fire and smoke doors; limited to EN 4, the lintel depth is limited to xxx mm.
- o** Suitable for use on standard doors.
- x** Combination not possible

2. Depending on the installation situation, select the corresponding drilling pattern on pages 11 – 18.
3. Drill the holes shown in the drilling pattern in the door leaf and frame/wall.

Assembly on the hinge side pull version with slide channel and short lever bolt

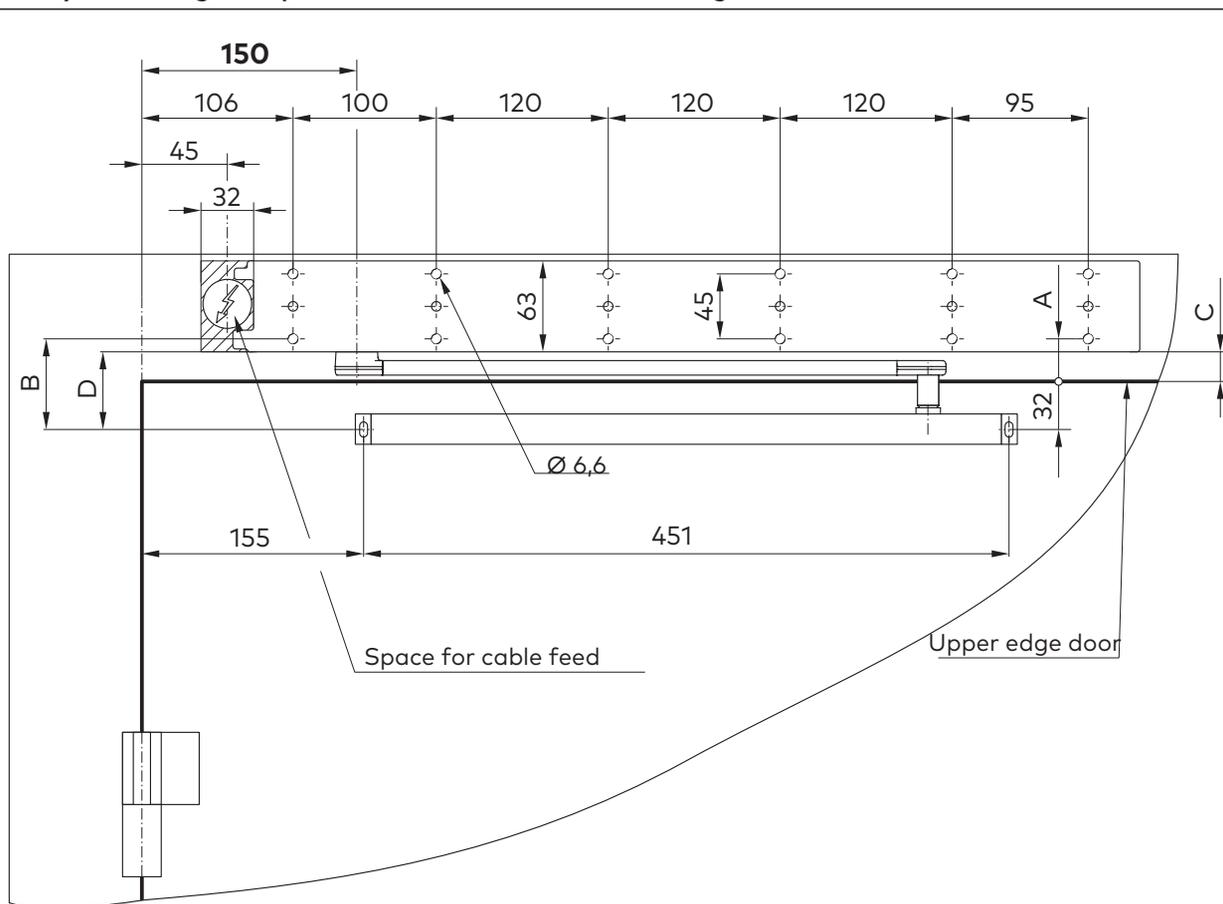


Door without rabbet

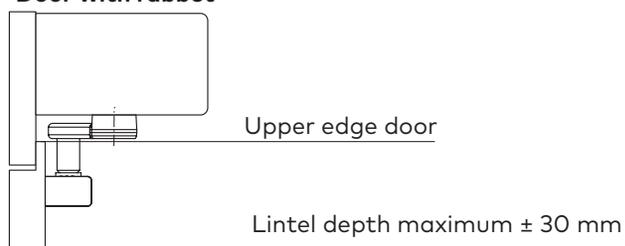


Axis extension	ED 100	ED 250	A	B	C	D
Standard	●	●	31 mm	50 mm	22 mm	41 mm
20 mm	●	●	51 mm	70 mm	42 mm	61 mm
30 mm	●	●	61 mm	80 mm	52 mm	71 mm
60 mm	●	●	91 mm	110 mm	82 mm	101 mm
90 mm	---	●	121 mm	140 mm	112 mm	131 mm

Assembly on the hinge side pull version with slide channel and long lever bolt

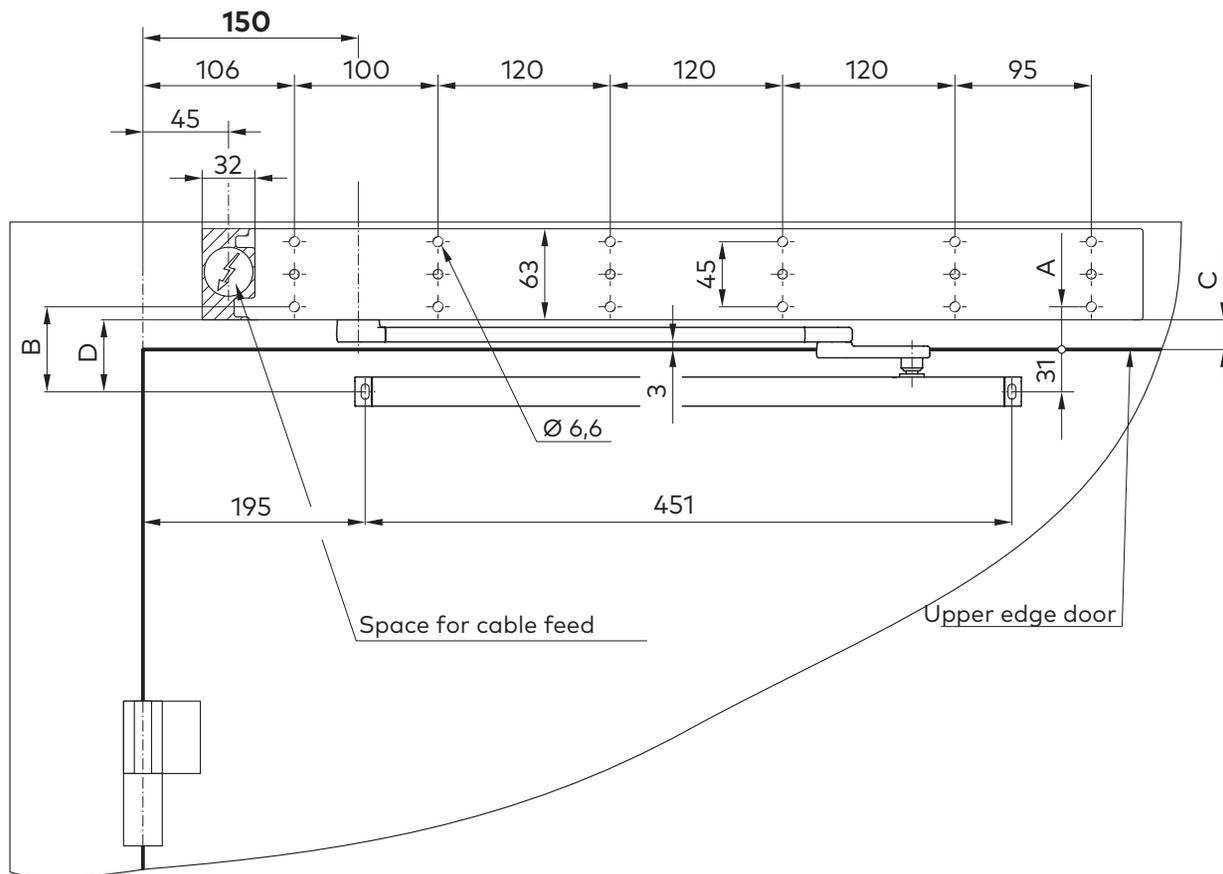


Door with rabbet

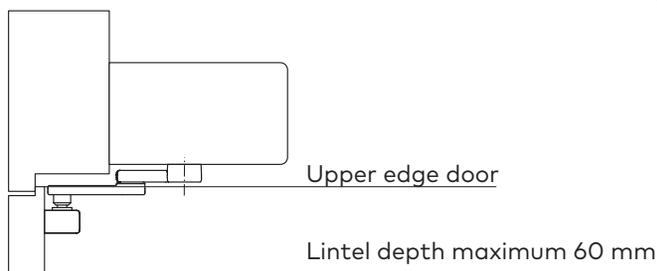


Axis extension	ED 100	ED 250	A	B	C	D
Standard	●	●	31 mm	63 mm	22 mm	54 mm
20 mm	●	●	51 mm	83 mm	42 mm	74 mm
30 mm	●	●	61 mm	93 mm	52 mm	84 mm
60 mm	●	●	91 mm	123 mm	82 mm	114 mm
90 mm	---	●	121 mm	153 mm	112 mm	144 mm

Assembly on the hinge side pull version with slide channel CPD and short lever bolt

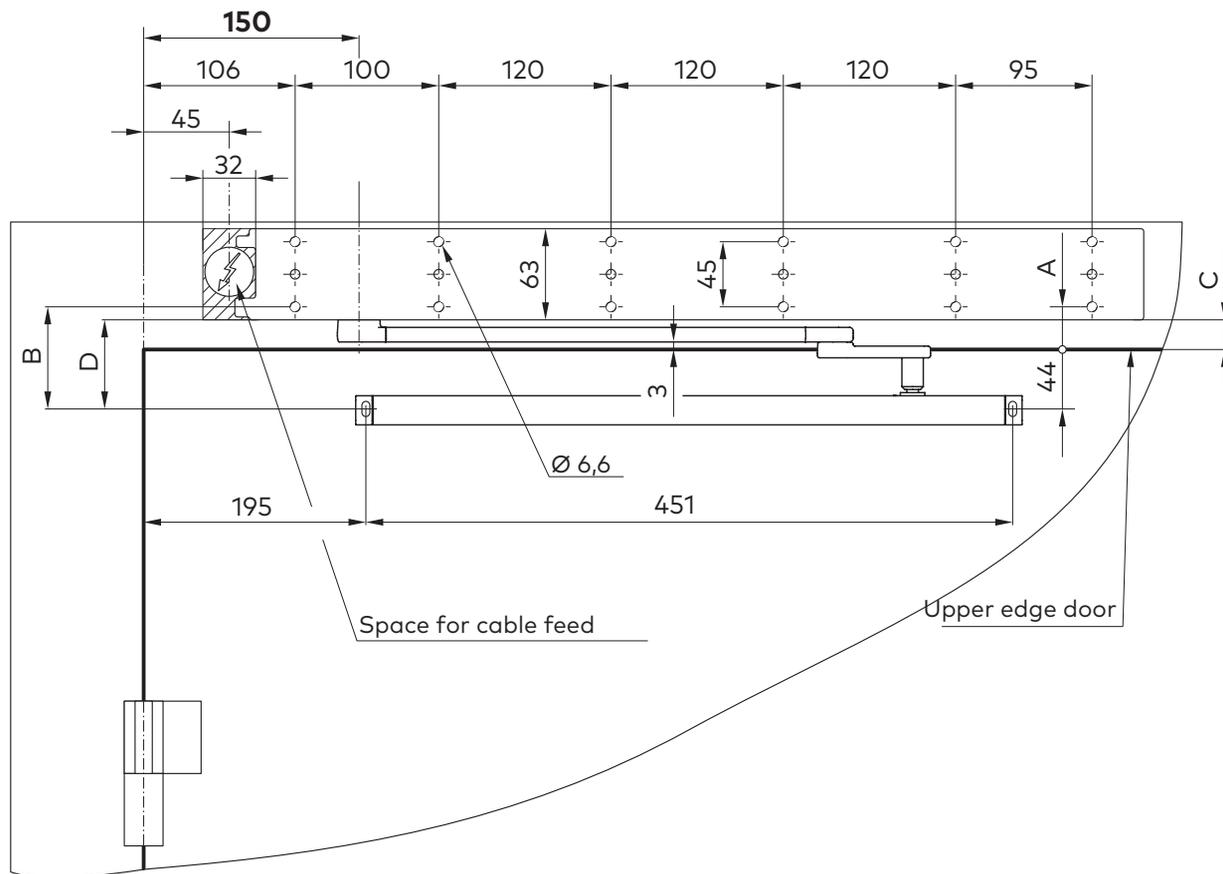


In case the CPD lever is used, about 30 mm must be deducted from the actual lintel depth when the parameter is set.

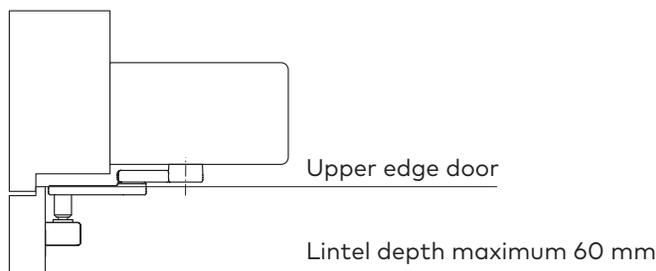


Axis extension	ED 100	ED 250	A	B	C	D
Standard	●	●	31 mm	62 mm	22 mm	53 mm
20 mm	●	●	51 mm	82 mm	42 mm	73 mm
30 mm	●	●	61 mm	92 mm	52 mm	83 mm
60 mm	●	●	91 mm	122 mm	82 mm	113 mm
90 mm	---	●	121 mm	152 mm	112 mm	143 mm

Assembly on the hinge side pull version with slide channel CPD and long lever bolt

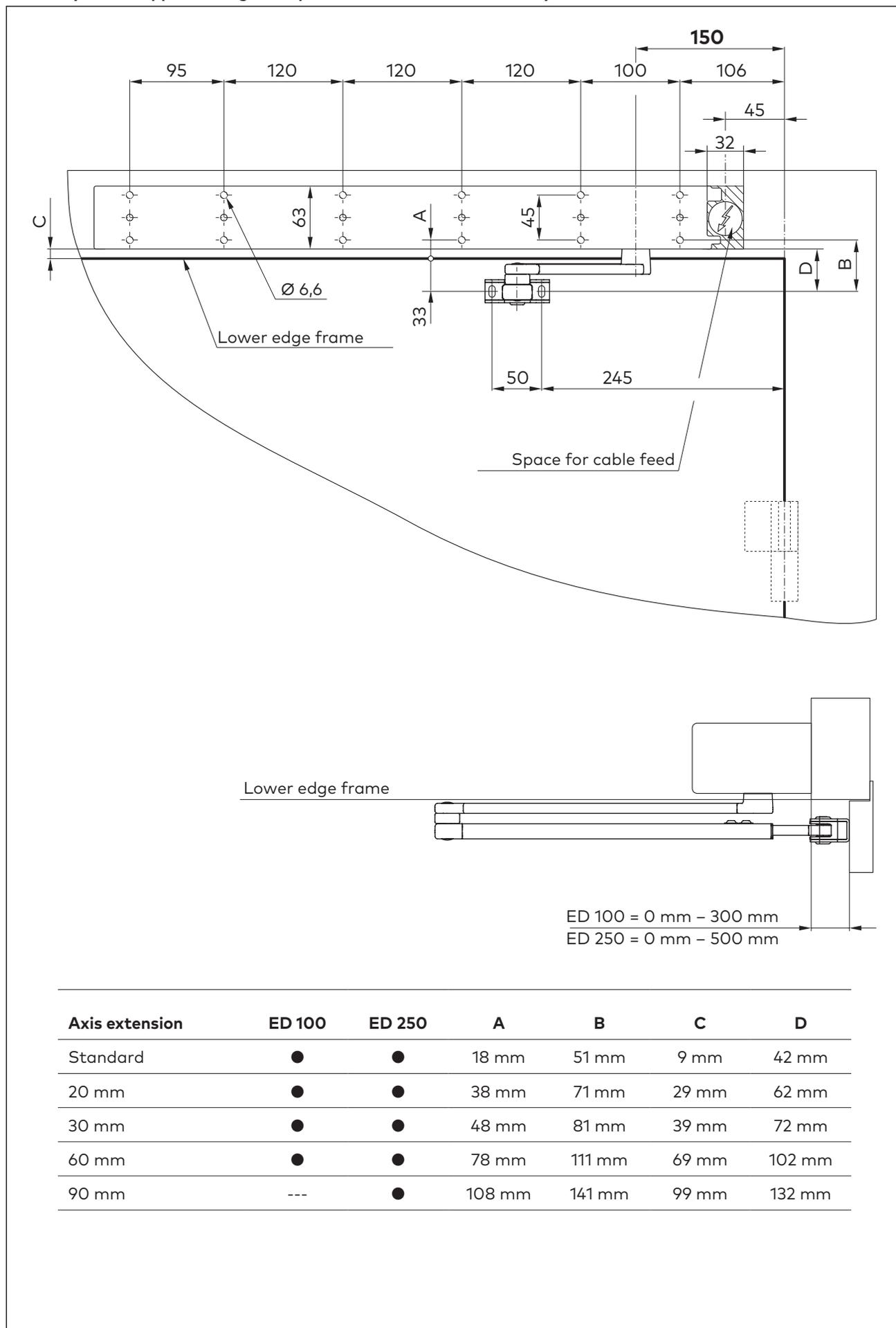


In case the CPD lever is used, about 30 mm must be deducted from the actual lintel depth when the parameter is set.



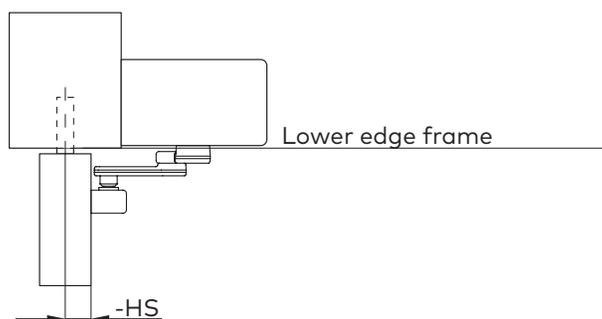
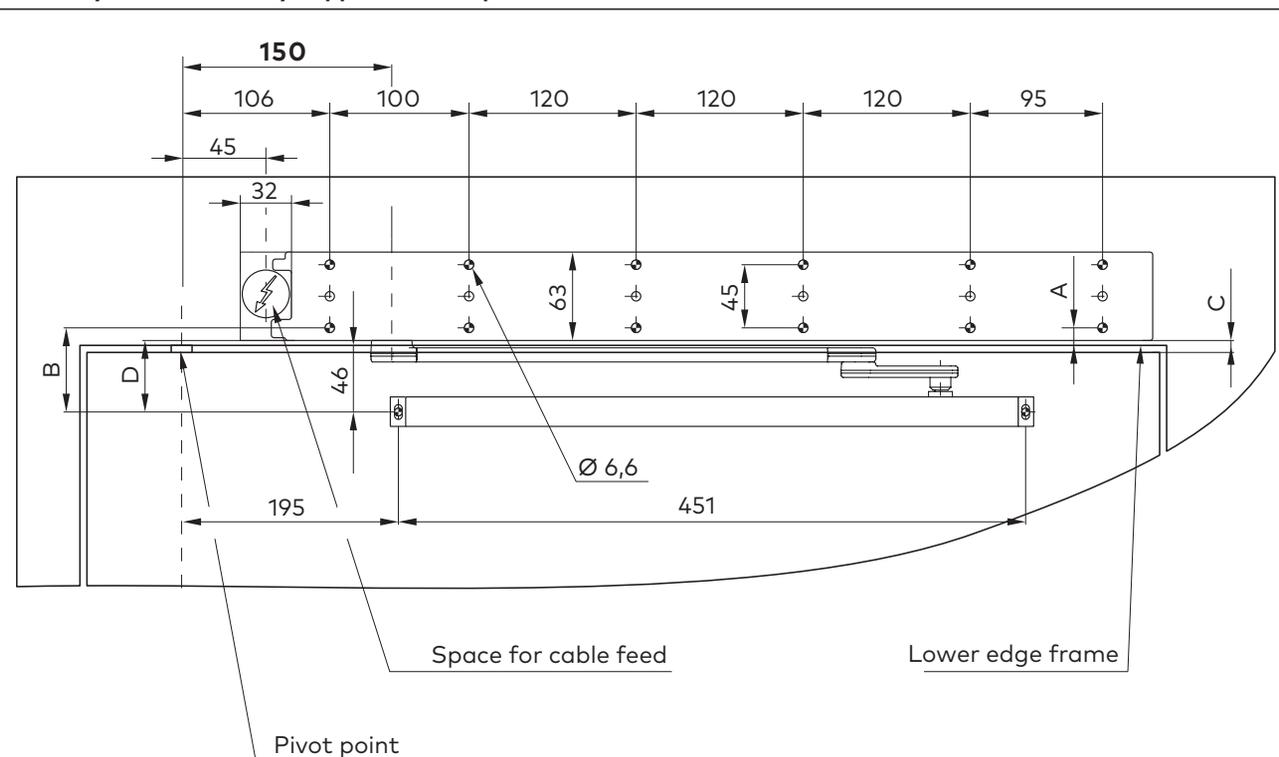
Axis extension	ED 100	ED 250	A	B	C	D
Standard	●	●	31 mm	75 mm	22 mm	66 mm
20 mm	●	●	51 mm	95 mm	42 mm	86 mm
30 mm	●	●	61 mm	105 mm	52 mm	96 mm
60 mm	●	●	91 mm	135 mm	82 mm	126 mm
90 mm	---	●	121 mm	165 mm	112 mm	156 mm

Assembly on the opposite hinge side push version with arm assembly



Axis extension	ED 100	ED 250	A	B	C	D
Standard	●	●	18 mm	51 mm	9 mm	42 mm
20 mm	●	●	38 mm	71 mm	29 mm	62 mm
30 mm	●	●	48 mm	81 mm	39 mm	72 mm
60 mm	●	●	78 mm	111 mm	69 mm	102 mm
90 mm	---	●	108 mm	141 mm	99 mm	132 mm

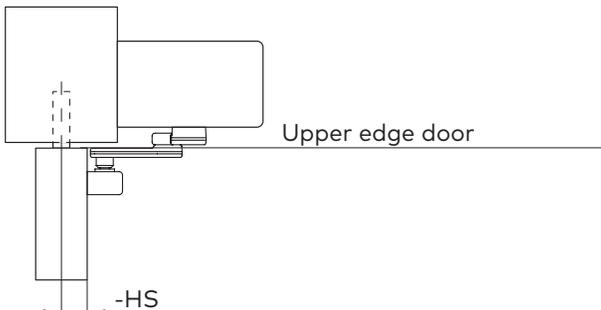
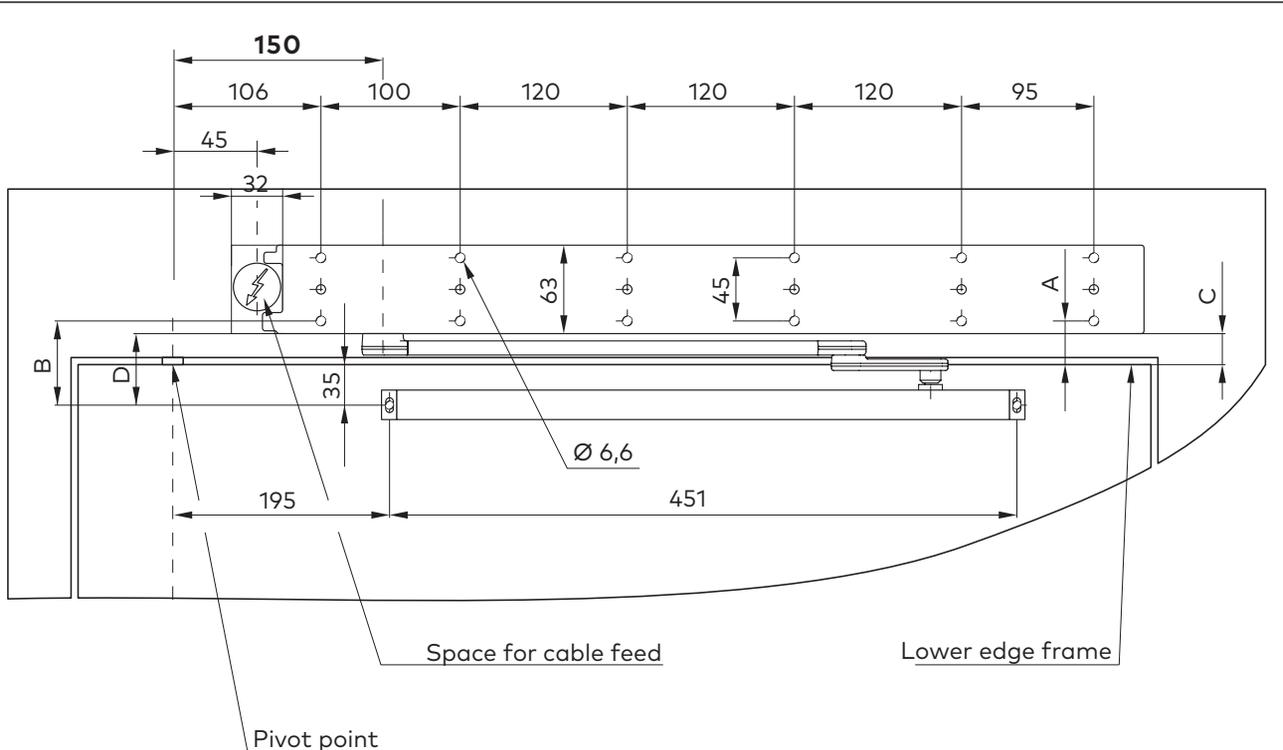
Assembly on the centrally supported door push version with slide channel CPD and short lever bolt



The parameter **HS** (clearance between hinges) must be changed into the negative.

Axis extension	ED 100	ED 250	A	B	C	D
Standard	●	●	15 mm	61 mm	6 mm	52 mm
20 mm	●	●	35 mm	81 mm	26 mm	72 mm
30 mm	●	●	45 mm	91 mm	36 mm	82 mm
60 mm	●	●	75 mm	121 mm	66 mm	112 mm
90 mm	---	●	105 mm	151 mm	96 mm	142 mm

Assembly on a centrally supported door pull version with slide channel CPD and short lever bolt



The parameter **HS** (clearance between hinges) must be changed into the negative.

Axis extension	ED 100	ED 250	A	B	C	D
Standard	●	●	31 mm	61 mm	22 mm	52 mm
20 mm	●	●	51 mm	81 mm	42 mm	72 mm
30 mm	●	●	61 mm	91 mm	52 mm	82 mm
60 mm	●	●	91 mm	121 mm	82 mm	112 mm
90 mm	---	●	121 mm	151 mm	112 mm	142 mm

5 Installing the drive unit



WARNING

Risk of injury by dropped parts.

Dropped parts or tools may result in injuries.

- Secure the workspace against trespassing.

The described procedure is only an example. A different procedure might be preferable due to structural or local conditions, available tools or other circumstances.

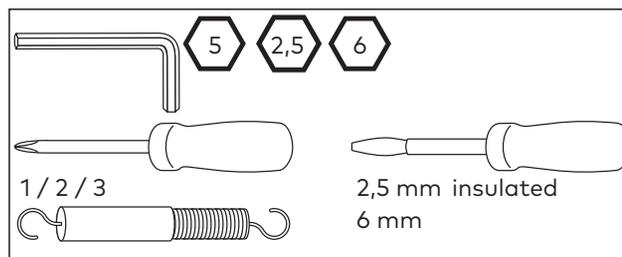
5.1 Requirements

- A 230 V/50-60 Hz connection with a fuse protection of 16 A must be available at the place of installation.
- The door panel must be in a sound mechanical condition and smooth-running.

5.2 Standard tightening torques

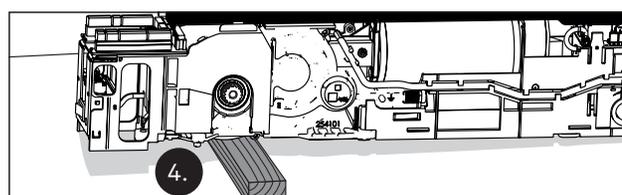
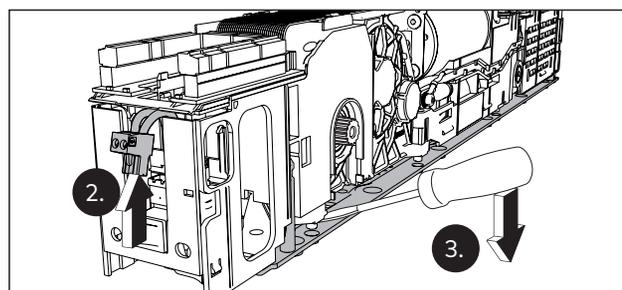
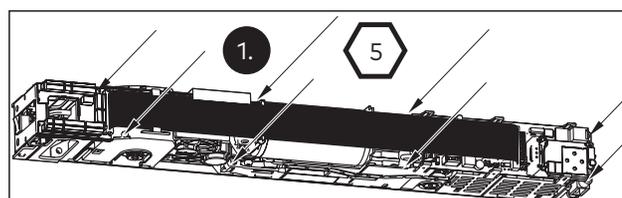
M 5	5 Nm
M 6	9.5 Nm
M 8	23 Nm

5.3 Required tools



5.4 Removing the drive unit from the mounting plate

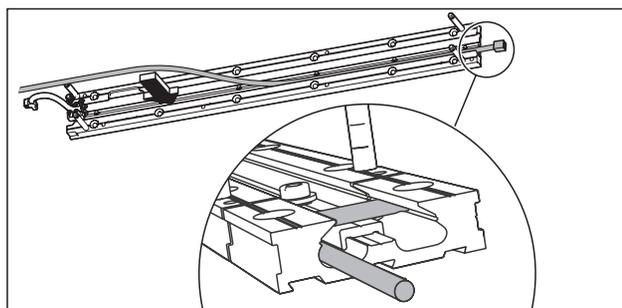
1. Loosen the 8 fastening screws.
2. Unplug the 230 V connector.
3. Disconnect the drive unit from the mounting plate. Use a screwdriver as a lever between the drive unit and the base plate.
4. Place a piece of wood or similar underneath the drive unit so that the connecting part cannot come loose.



5.5 Optional assembly steps

5.5.1 Lay smoke detector cable for integrated smoke detector (optional)

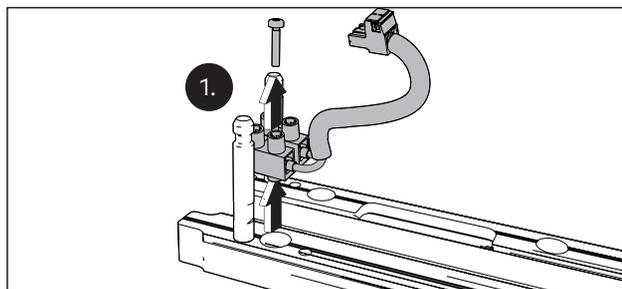
Cf. mounting instruction ED Cover Basic RM, ED Cover VARIO RM.



5.5.2 Mounting the tension relief (optional)

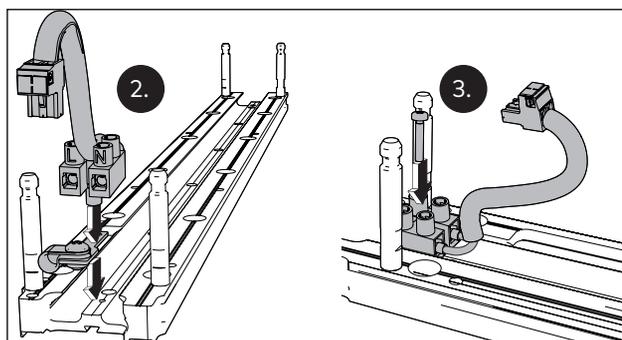
Mount the tension relief before you fasten the mounting plate to the door/wall.

1. Remove the screw and the mains connection from the mounting plate.



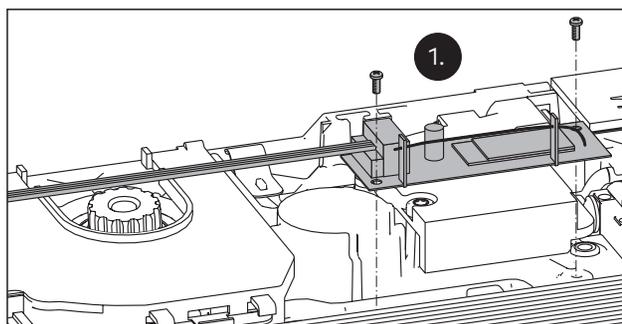
2. Place the tension relief underneath the mains connection.

3. Screw the mains connection and the tension relief to the mounting plate.

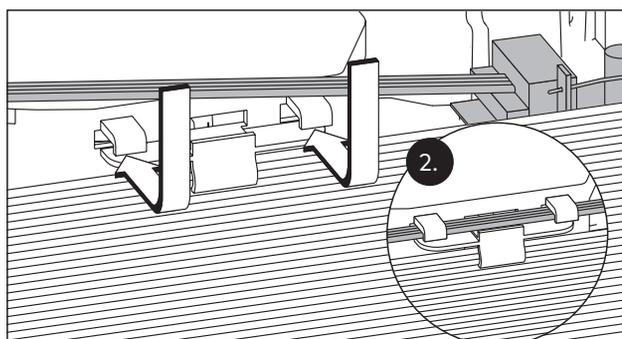


5.5.3 Mounting the receiver (optional)

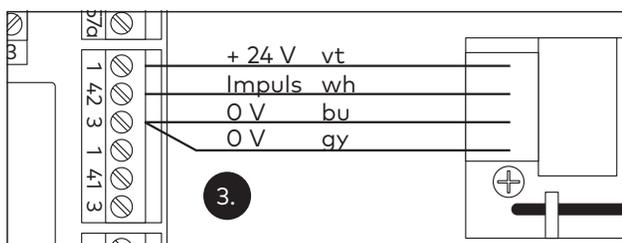
1. Screw the receiver board to the drive unit.



2. Feed the cable through the holder.



3. Connect the receiver.



5.6 Mounting the mounting plate

1. Fasten the mounting plate with 12 screws into the prepared holes.



TIPS AND RECOMMENDATIONS

For the fastening, use dowels and screws that match the background.

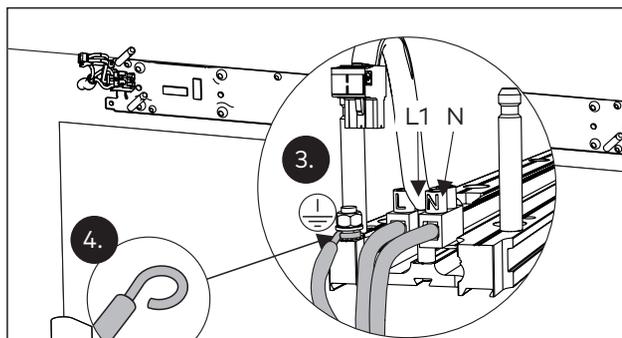
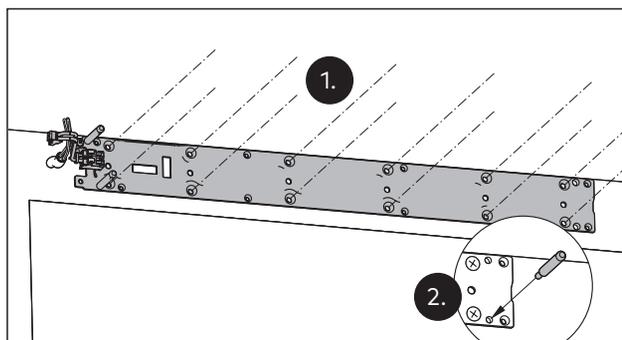
2. Use a hammer to drive the supplied holding pin into the lower one of the 2 holes.



DANGER!

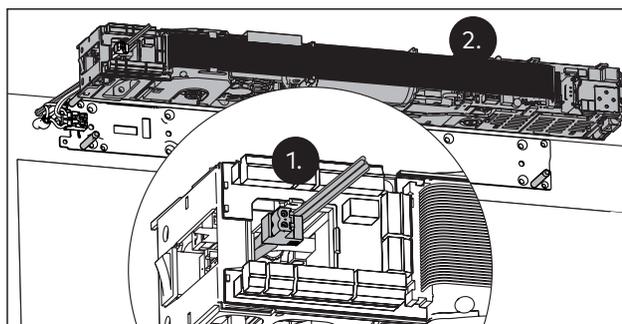
Danger to life through electric current. Work on electrical equipment must be performed by qualified electricians only.

3. Connect the 230 V connecting cable.
4. Bend the cable end of the ground conductor to form an eye and fasten it to the grounding screw.

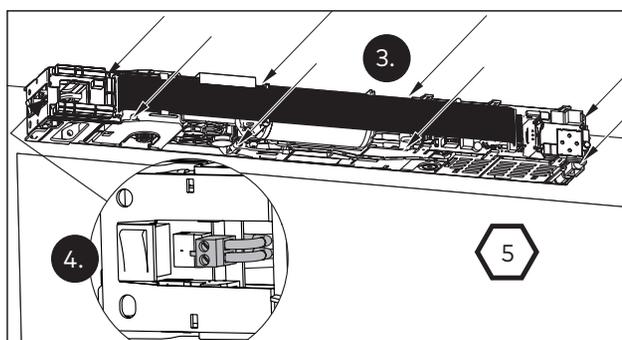


5.7 Fastening the drive unit to the mounting plate

1. Feed the connecting cables through the housing and place the drive unit onto the bolts on the base plate.
2. Push the drive unit until it clicks audibly into place.

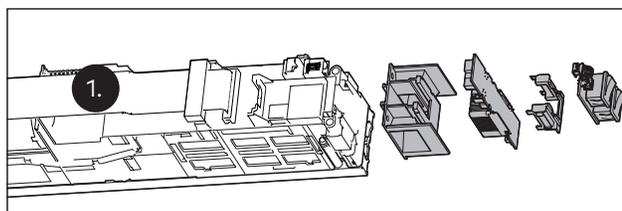


3. Tighten the 8 screws.
4. Plug in the mains connector.



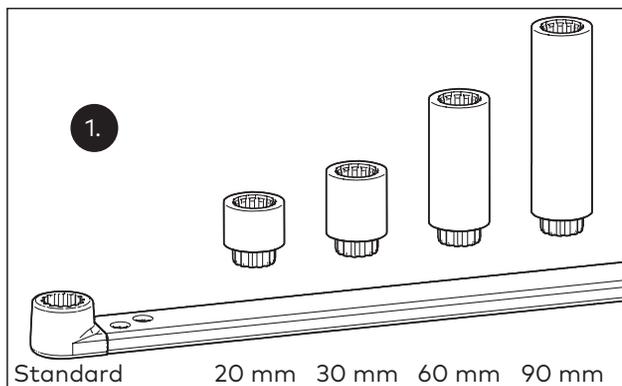
5.8 Mounting the ED Cover Basic RM (optional)

1. Mount the integrated smoke detector on the operator.
Cf. mounting instruction ED Cover Basic RM, ED Cover VARIO RM.



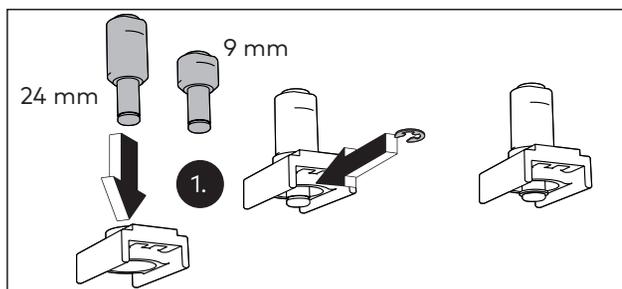
5.9 Driving the axis extension into the lever

1. Drive the axis extension into the lever.



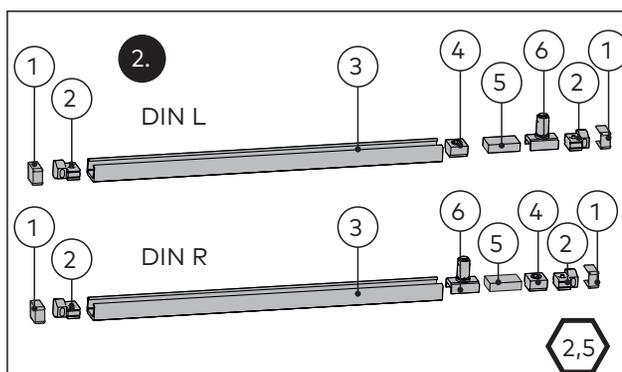
5.10 Mounting the slide channel

1. Insert the lever bolt (short = 9 mm or long 24 mm) into the sliding piece and fasten it with the retaining washer. The short bolt is used for doors without rabbet.

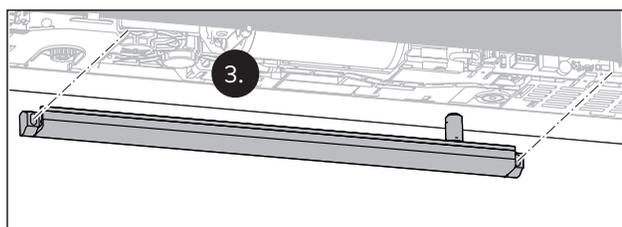


2. Place the individual parts into the slide channel as shown in the illustration and fasten the mounting part.

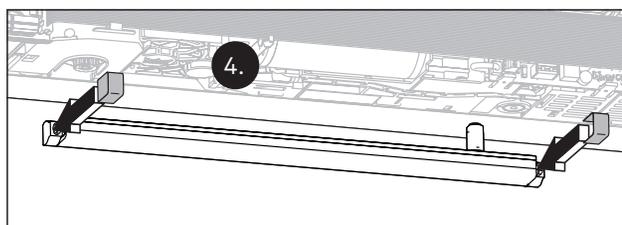
- (1) End cap
- (2) Latching action
- (3) Slide channel
- (4) Buffer
- (5) Sliding piece
- (6) Mounting part



3. Screw the slide channel with 2 screws into the prepared holes. For the fastening, use dowels and screws that match the background.



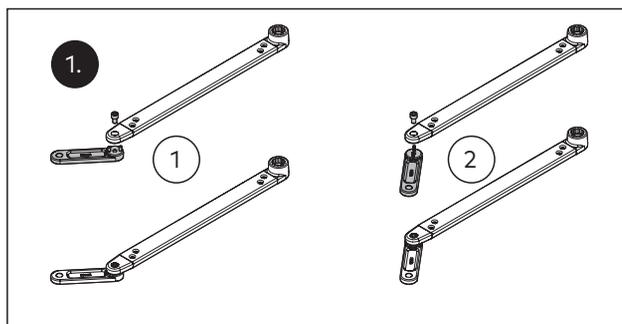
4. Insert the casing onto the slide channel.



5.11 Mounting the slide channel lever CPD

In case the slide channel lever CPD is used, the lever must be assembled.

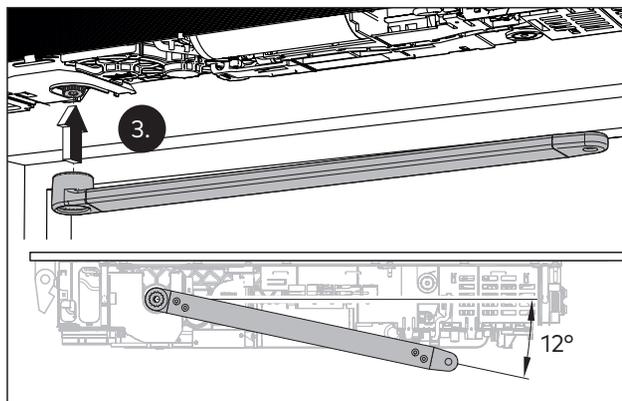
1. Screw together the lever according to the mounting position.
 - (1) Hinge side DIN right and opposite hinge side DIN left
 - (2) Hinge side DIN left and opposite hinge side DIN right



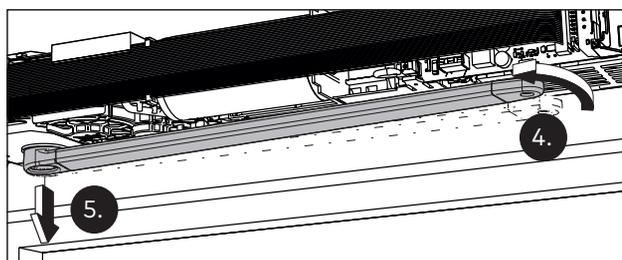
5.12 Mounting the lever

In order to mount the lever in the correct position, the axle must be brought into zero position.

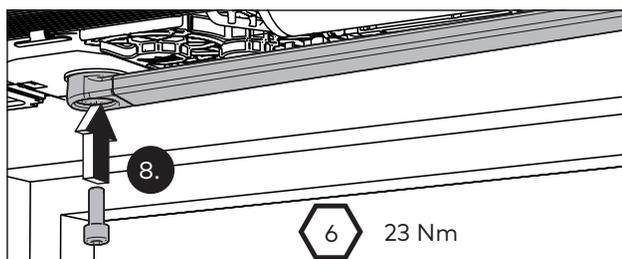
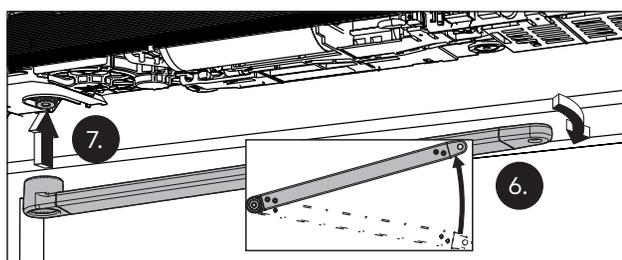
1. Set the spring preload to approx. 10 rotations, see „Adjusting the spring tension“ on page 26.
 - ▶ The axle rotates to the zero position.
2. Turn the spring preload back to 0 rotations.
3. Push the lever onto the axle at an angle of approx. 12° to the drive.
4. Turn the lever with the drive axle approx. 10° in the door's opening direction.
5. Take the lever off the axle.



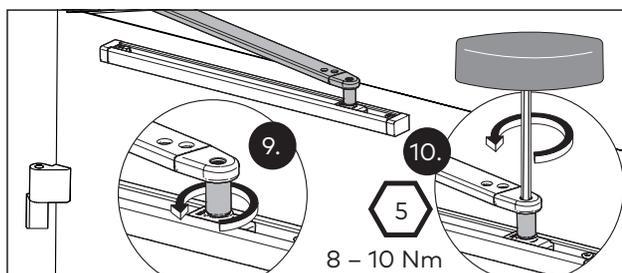
6. Turn the lever one tooth in the door's closing direction.
7. Put the lever on the axle.



8. Screw the lever on tight with 23 Nm.



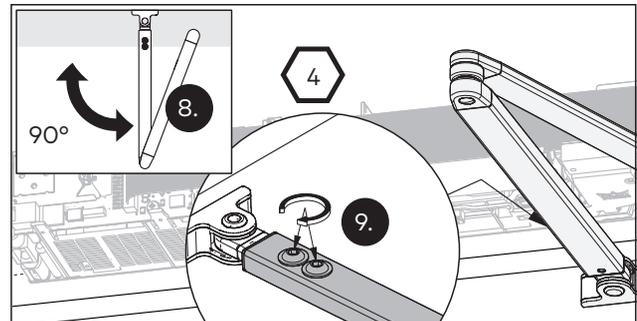
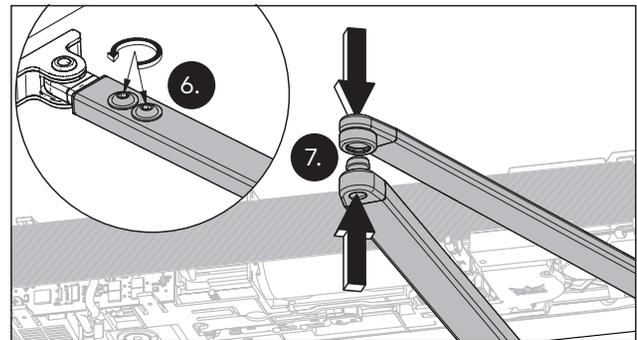
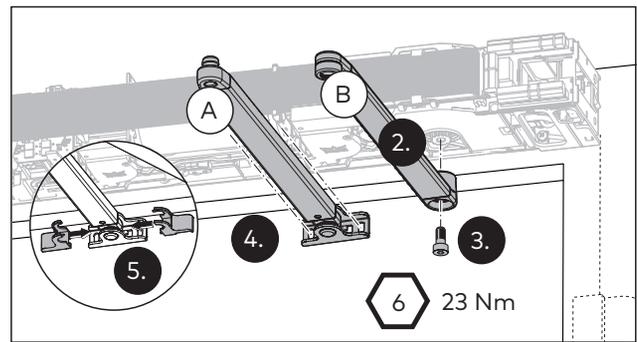
9. Screw the lever bolt into the lever.
10. Screw the lever bolt tight with 8 – 10 Nm.



5.13 Mounting the standard rod

In order to mount the lever in the correct position, the axle must be brought into zero position.

1. Set the spring preload to approx. 10 rotations, see „Adjusting the spring tension“ on page 26
 - The axle rotates to the zero position.
2. Put the lever (B) on the axle at an angle of approx. 90° to the drive.
3. Screw the lever on tight with 23 Nm.
4. Screw the telescopic arm (A) to the door leaf using 2 screws.
5. Place the covers on the telescopic arm's joint.
6. Loosen the 2 screws on the telescopic arm.
7. Push the telescopic arm's ball head into the holder on the lever.
8. Turn the rod so that the telescopic arm is at an angle of 90° to the door leaf.
9. Tighten the 2 screws.

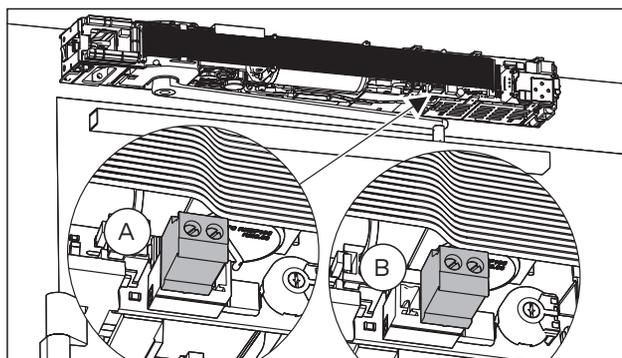


5.14 Setting the braking circuit

1. Ensure that the mains voltage is disconnected.

WARNING!
 Risk of being crushed by the door.
 If the plug is inserted incorrectly, the brake circuit will not work. The door can close at high speed.

2. Insert the connector depending on the type of installation.
 (A) = installation pulling
 (B) = installation pushing



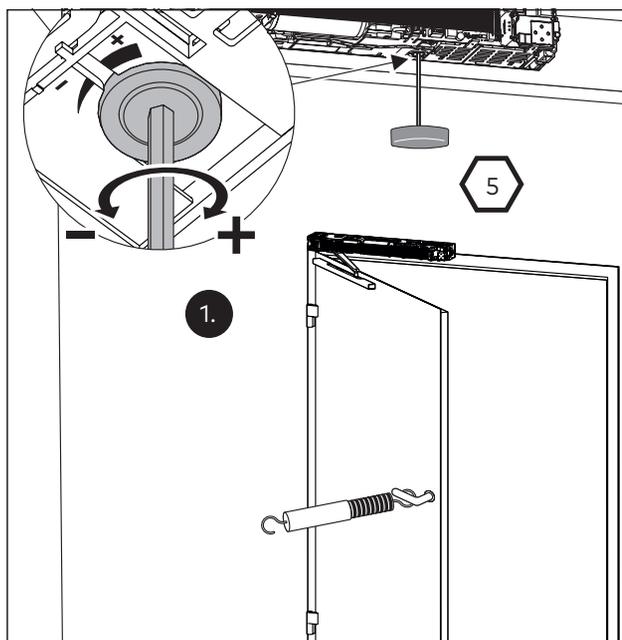
5.15 Adjusting the spring force

The spring is not tensioned when delivered. A primary tension of at least 10 rotations is required for the operation. The adjustment will be tested during the teach-in run. The teach-in run will be aborted if the spring force is too low. A new teach-in run must be carried out if the spring has been readjusted.

1. Refer to the table to find the required rotations for the spring adjustment and adjust the spring force.

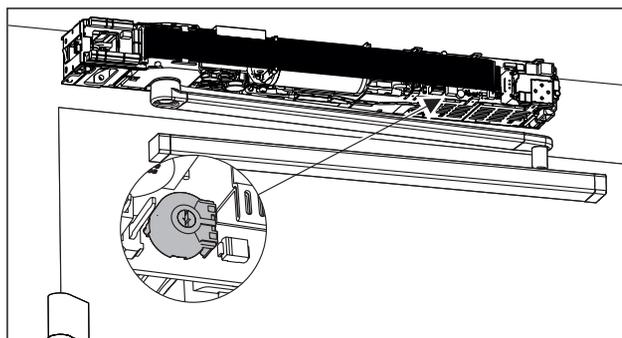
Selection EN class					
Door panel width in mm	950	1100	1250	1400	1600
EN class	EN 3	EN 4	EN 5	EN 6	EN 7
Min. closing torque in case of 2°	18 Nm	26 Nm	37 Nm	54 Nm	87 Nm
Rotations for the spring adjustment					
ED 100	14	16	--	--	--
ED 250	--	14	18	24	24
Possible combination arm assembly					
Standard arm assembly	X	X	X	X	X
Slide channel	X	X	X	X	X

The table shows approximate values. You must therefore test and correct, if necessary, the closing torque at 2° in accordance with EN 1154. In case of lintel depths larger than 300 mm, you must also check the minimum closing torque between 88° – 92°.



5.16 Adjusting the closing speed in a deenergized state

The speed must be adjusted. If the door closes in less than 3 seconds, it will lead to the error message 73 (braking circuit test).



5.17 Commissioning the drive unit.

1. Commission the drive unit.
 Cf. commissioning on page „Commissioning“ on page 35.

5.18 Adjusting the end stop on the slide channel

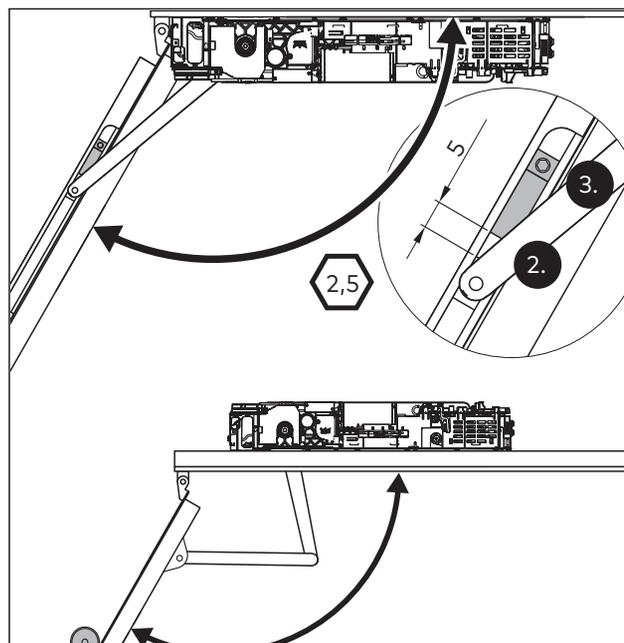
The end stop must be adjusted so that the set opening angle cannot be exceeded when manually pushed.

1. Turn the program switch to the PERMANENT OPEN position.
 - ▶ The door will open to the adjusted opening width.
2. Move the buffer and the end stop to 5 mm to the sliding piece.
3. Tighten the end stop.



ATTENTION!

dormakaba recommends the use of a doorstop. When using the standard rod, a doorstop must be used.



5.19 Installing the casing



ATTENTION!

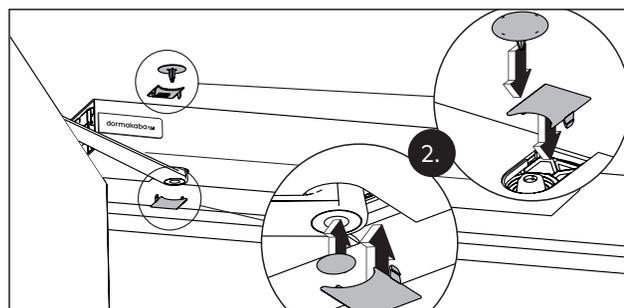
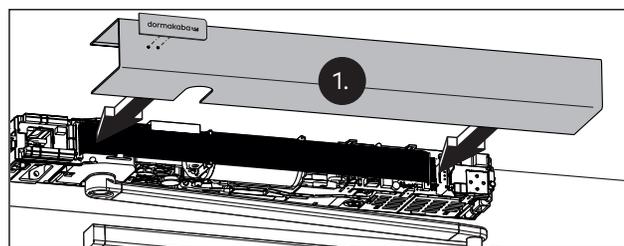
The use of a metallic hood is required for CE conformity.



ATTENTION!

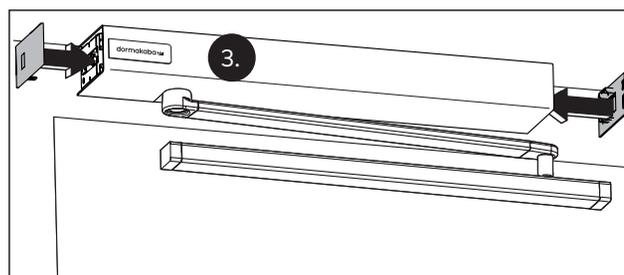
Do not pinch any wires.

1. Push the cover onto the drive unit and press until it clicks audibly into place.
2. Attach the axis covers.



3. Attach the side covers.

On the side with the program switch, you can vary the insertion depth using the notches in order to compensate for slight differences in length of the cover.



5.20 Installing the 2-panel door (optional)

Proceed as follows before mounting the drive units:

1. Disconnect the connecting cable on both drives.
2. Remove the boards with the internal program switches upwards.
3. Press the 3 clamps on the drive unit, which is not installed on the side of the mains connection, on the connection board inward and remove the connection board.
4. Open the 2 covers above the mains connection unit.
5. Unplug the connector.
6. Remove the mains connection unit.
7. Close the 2 covers and insert the connection board.
8. Place the mounting plates on an even base and align it accurately.
9. Measure the length of the cover and use the formula $\text{Cover length} - 91 = X$ to calculate the length of the assembled mounting plates.
10. Screw together the mounting plates. Consider the information shown in figures 4 and 5a – 5c.



TIPS AND RECOMMENDATIONS

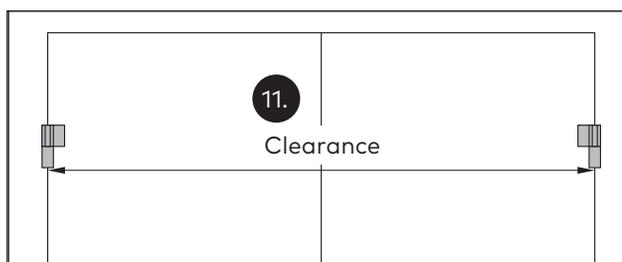
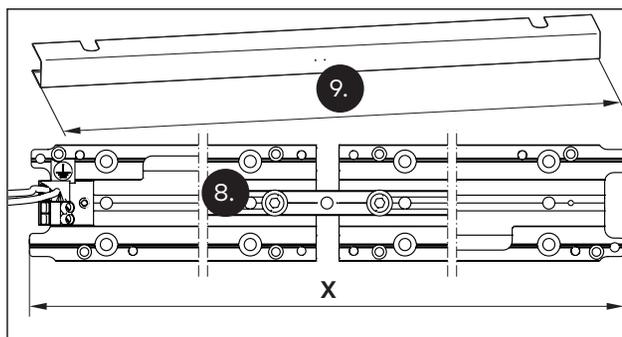
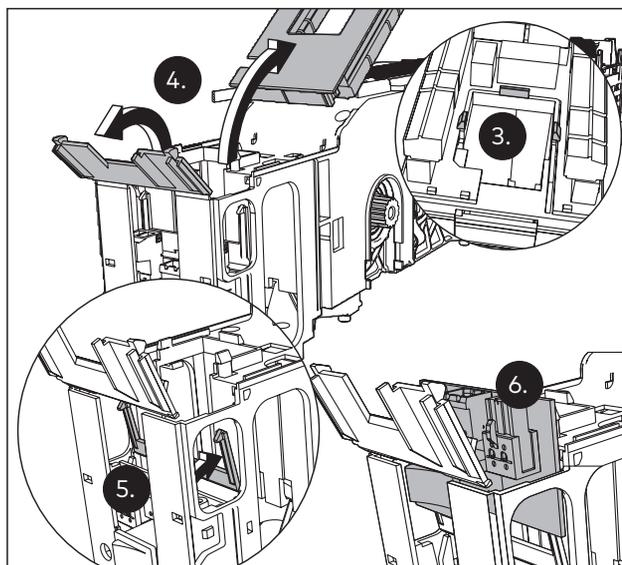
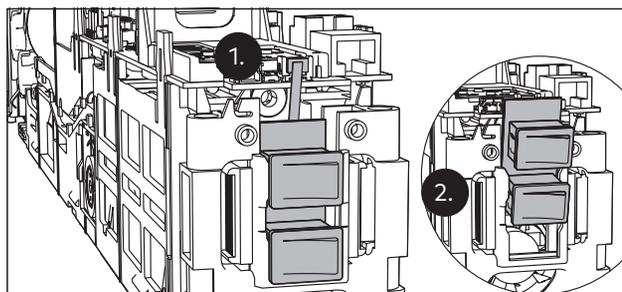
After the assembly of the mounting plates, attach the drive units and check whether the casing fits.

11. Determine the clearance.

12. Connect the mounting plate

There are 3 options to connect the mounting plates. The clearance determines which option is used.

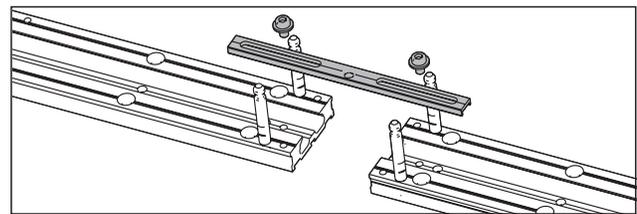
Clearance 1,400 – 1,415 mm = connection "A"
 Clearance 1,416 – 1,475 mm = connection "B"
 Clearance larger 1,476 mm = connection "C"



Connection "A"

Clearance 1,400–1,415 mm

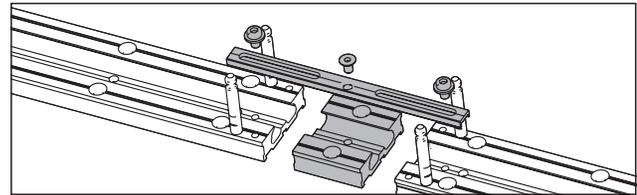
Connect the mounting plates with the large connector.



Connection "B"

Clearance 1,416–1,475 mm

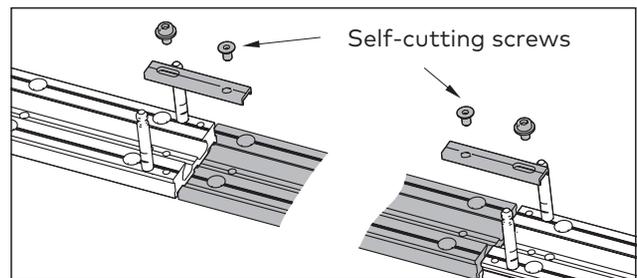
Connect the mounting plates with the large connector and the smaller intermediate plate.



Connection "C"

Clearance larger than 1,476 mm

Connect the 2 mounting plates to the 2 shorter connectors and the customized intermediate plate.

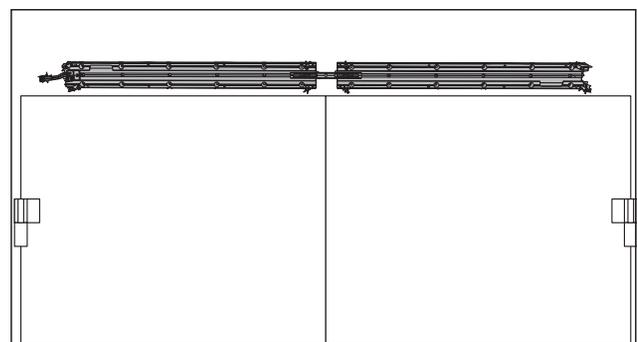


13. Fasten the mounting plate with 12 screws each into the prepared holes.



TIPS AND RECOMMENDATIONS

For the fastening, use dowels and screws that match the background.



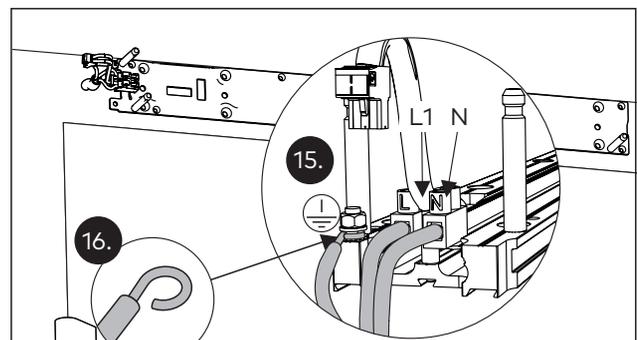
14. Use a hammer to drive the supplied holding pin into the lower one of the 2 holes.



DANGER!

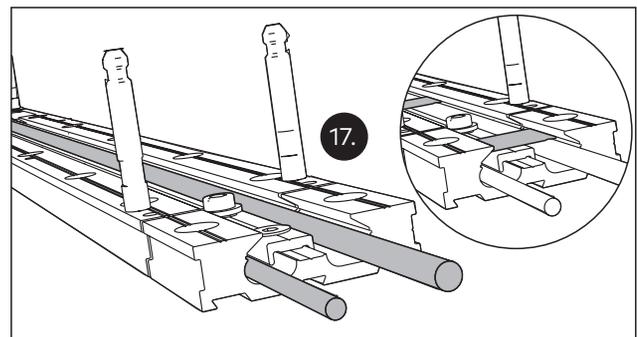
Danger to life through electric current. Works on electrical systems must only be carried out by qualified electricians.

15. Connect the 230 V connecting cable
16. Bend the cable end of the ground conductor to form an eye and fasten it to the grounding screw.
17. Install the mains connecting cable for the second drive and, if necessary, the program switch cable into the groove on the mounting plates and fasten them using the supplied small plastic plates.
18. Install both drive units see page „Fastening the drive unit to the mounting plate“ on page 24, „Fastening the drive unit to the mounting plate“

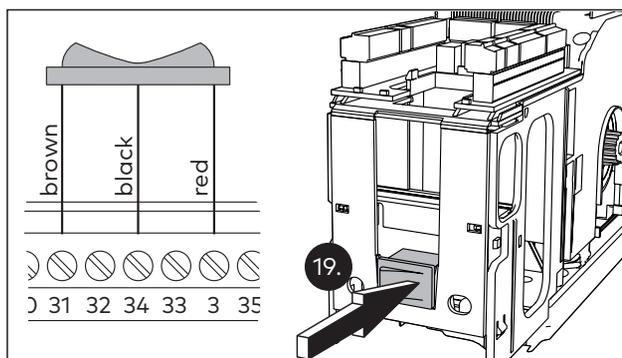


In case the system is to be fitted with an electrical door coordinator, install it now (see installation manual ED 100/250 ESR).

In case the system shall be equipped with an integrated smoke detector, install the integrated smoke detector now cf. mounting instruction ED Cover Basic RM, ED Cover VARIO RM.

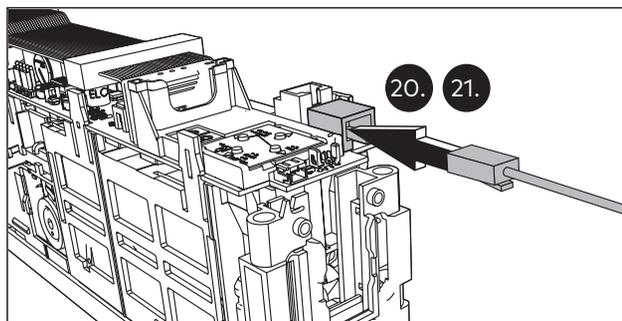


19. Clip the new program switch into the receiver of the removed mains switch and connect it to the drive unit for the active panel. The connection takes place on the connection board on the terminals for the external program switch.



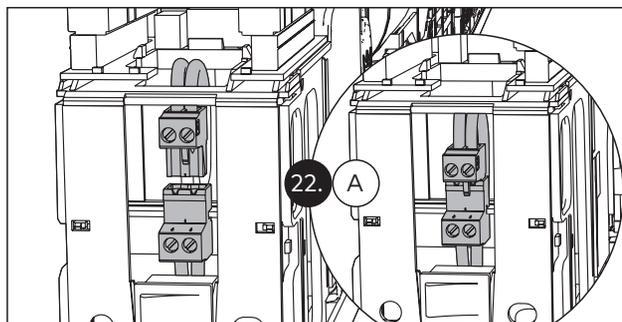
20. In case you have mounted the program switch to the drive unit for the active panel, you must shorten the connecting cable. The cable ends must be provided with cable shoes.

21. Insert the communication cable into the 2 "lying" connectors on the control unit.



22. Connect the mains connection cable for the second drive unit.

A Figure shows the connection on the active panel.



B Figure shows the connection on the inactive panel.

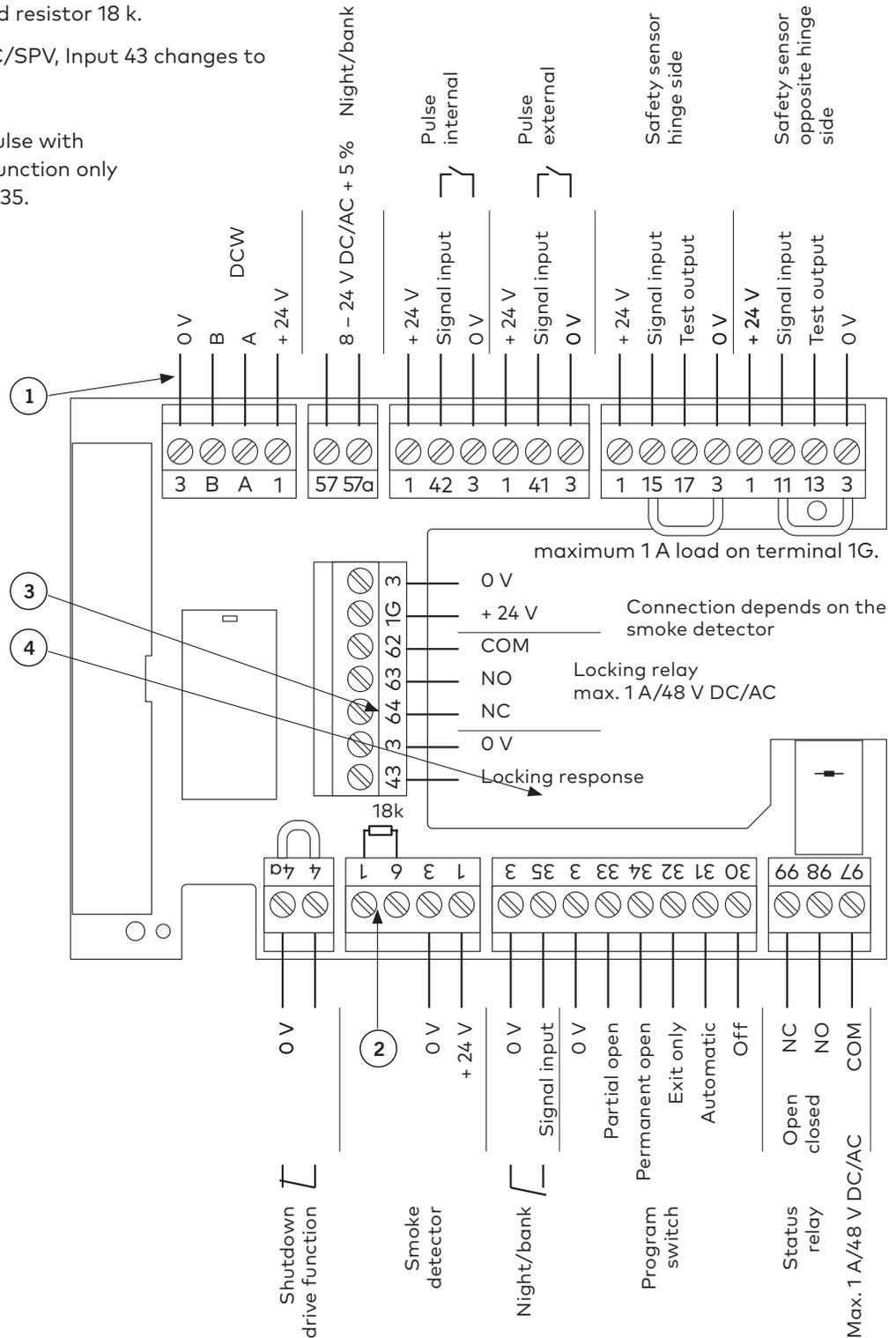


6 Connecting the accessories

1. Connect the connecting cables to the connector and insert the connector into the connection board.
 - Maximum 1.5 A total load on the terminals 1, 1G and 3, maximum 1 A load on terminal 1G.
 - Cable length maximum 30 m for J-Y(ST)Y 0.8 mm

6.1 Terminal assignment

- 1 The terminal is included in the scope of delivery of the Upgrade Card DCW.
- 2 The terminal is included in the scope of delivery of the Upgrade Card Fire Protection. If the Upgrade Card Fire Protection is installed, you must connect either an RM-ED or the load resistor 18 k.
- 3 When using EVAC/SPV, Input 43 changes to Input EVAC/SPV
- 4 EVAC: Opening pulse with activated EVAC function only possible via input 35.

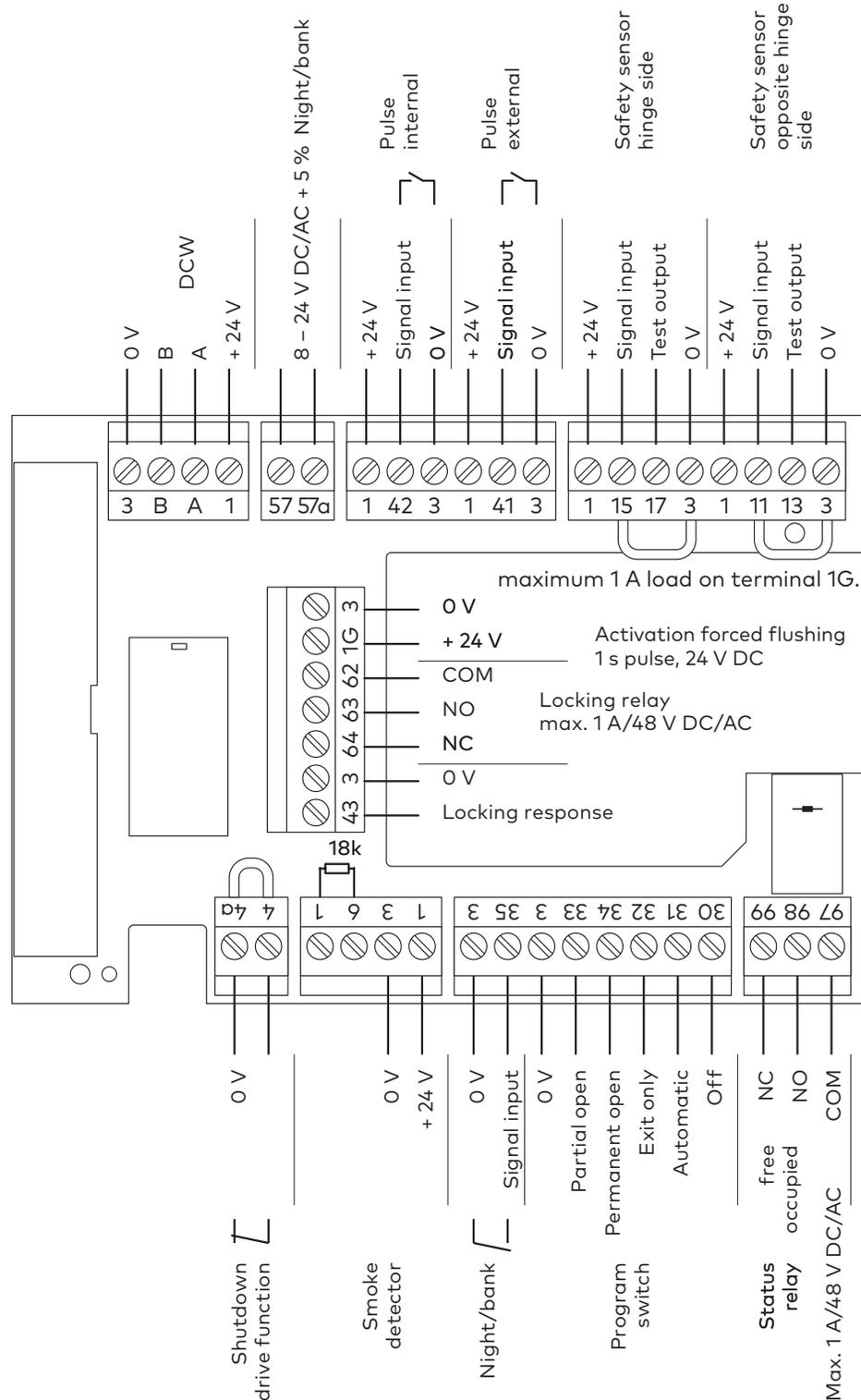


6.2 Terminal assignment for an Upgrade Card barrier-free WC

The door system must be equipped with the following components:

- Closed current door opener or a suitable motor-driven panic lock
- On the inside with a door handle and a knob on the outside
- Flat pushbutton on the inside and outside
- On the outside: a status display „free/occupied“
- On the inside: a status display „occupied“.

Emergency buttons can be installed optionally on the inside and outside. dormakaba recommends to include the barrier-free WC into an emergency call system provided by the customer.



7 Commissioning

(also after a reset with factory setting (Fact-Setup))

7.1 Requirements

- The drive unit is completely installed and correctly connected to the door panel
- The parts delivered separately such as the program switch and activator (microwave detector, night/bank key switch) are installed and connected.
- The motor is cold.

7.2 Commissioning the drive unit

1. Turn on the drive unit using the mains switch.
 - ▶ The display shows a sequence of characters that indicate the current processing status.



The system is being tested.



2 segments in the center moving back and forth indicate that the control unit is waiting for internal signals (maximum 1 second).



2 underlines moving up and down indicate the mounting position can be entered. In case of an incorrect input, the characters on the display are upside down.

2. Press the lower pushbutton (possible only during the initial commissioning).



The device identification will "run" through the display. ED 100 or ED 250 and the firmware version (indicated by XX XX).



A small, spinning "o" and "P" indicate that a further parameterization is required (only during the initial commissioning or after a reset with factory setting).

3. Set the following parameters: type of mounting (AS), lintel depth (rd) and door width (Tb). For the meaning and the value ranges of the parameters, please refer to the table on page 34.

7.3 Changing the parameters

- | | |
|---|----------|
| 1. Press the pushbotton for 3 seconds in order to call up the parameter menu. | ▶ |
| 2. Press the pushbuttons in order to select the desired parameter. | ▼ oder ▲ |
| 3. Press the pushbutton in order to display the parameter value. | ▶ |
| 4. Press the pushbutton in order to select the value for the change.
=> The value flashes. | ▶ |
| 5. Press the pushbuttons in order to set the desired value. | ▼ oder ▲ |
| 6. Press the pushbutton in order to save the changed value. | ▶ |
| 7. Press the pushbutton in order to return to the parameter menu. | ◀ |
| 8. Press the pushbuttons in order to select the next parameter. | ▼ oder ▲ |



After leaving the parameterization mode, the display will show a small, spinning "o" and "P".

7.4 Performing a teach-in run

The teach-in run must be carried out while the motor is cold. The door panel may not be moved manually and stopped during the teach-in run. The control unit would otherwise not be able to correctly determine the parameters.

1. Secure the movement range of the door panels.
2. Close the door and turn the program switch to the OFF position.



A spinning "o" and "O" indicate that a teach-in run is required.

3. Press the pushbutton ▼ for 3 seconds.
 - ▶ The door performs various movements and the display shows a sequence of characters.
 - ▶ Do not stop the movements of the door panel.



The door is in the 70° position and waiting for the opening width to be set.

4. Push the door to the desired open position and press the pushbutton ▼.



In case the spring force is too low, the display will show the small spinning "o" and "F".

5. In this case, increase the spring force and restart the teach-in run.



The door is now operational.



TIPS AND RECOMMENDATIONS

Due to system tolerances, the actual forces on the door panel have to be measured after the teach-in run and adjusted, if necessary, in order to comply with the local standards and regulations.

7.5 Commissioning of a 2-panel system

1. Commission the active panel.
2. Switch the program switch to PERMANENT OPEN after the teach-in run.
3. Commission the inactive door panel.

Additional parameterization

On the active panel:

- Set parameter >dL< (door type) to "1". Set parameter >Ad< (caster angle) to the set value

On the inactive panel:

- Set parameter >dL< to "2".

7.6 Zero point search after mains reset



During the zero point search, the display will show the small spinning "o" and "b".

7.7 Commissioning with integrated smoke detector

cf. mounting instruction ED Cover Basic RM, ED Cover VARIO RM.

8 Installing Upgrade Cards

8.1 Requirements

- The drive unit is completely installed.
- The teach-in run has been successfully completed.
- The mains voltage is turned on.
- The program switch is in the OFF position.
- The information display indicates an inactive state.



8.2 Use in 2-panel systems

Full-Energy:

The Upgrade Card Full Energy can be installed on one or both drive units.

Fire Protection:

The Upgrade Card Fire Protection must be installed on both drive units.

Professional:

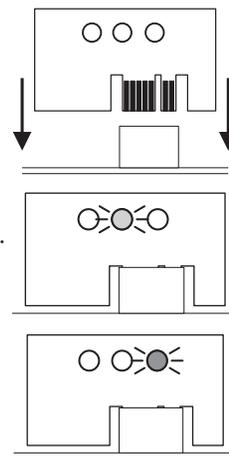
The Upgrade Card Professional will be installed only on the drive for the active panel. For the EVAC or SPV functions in 2-leaf systems, 1 Upgrade Card Professional is required for each drive on which the functions are to be used.

DCW:

The Upgrade Card DCW will be installed only on the drive to which DCW products are connected.

8.3 Installing the first Upgrade Card

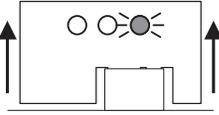
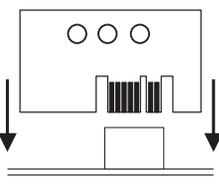
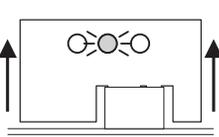
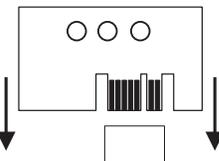
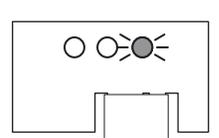
1. Insert the Upgrade Card into the slot (see page 4 position 9).



- ▶ The yellow LED flashes once during the insertion.
- ▶ The data are transmitted. The communication between the modules is indicated by a slow flashing of the green LED.
- ▶ The corresponding function is now enabled and can be activated (see page 39, Parameter F1 – F8).
- ▶ The system is now operational.

8.4 Installing additional Upgrade Cards

You can install additional Upgrade Cards. The first installed Upgrade Card assumes the function of the container module. All installed functions can be used as long as the container module is installed in the drive unit.

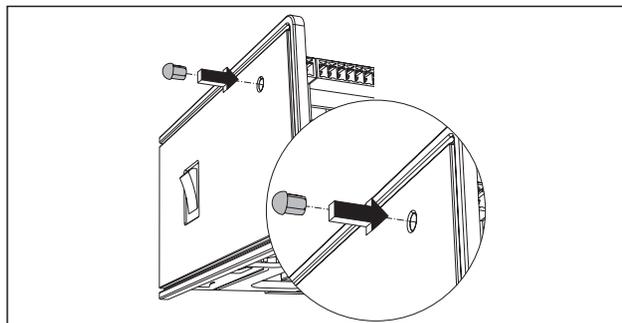
1. Remove the container module. 
2. Insert the next Upgrade Card.
 - ▶ The function will be copied into the drive unit and the Upgrade Card will be devalued. 
3. Remove the Upgrade Card as soon as the yellow LED is on. 
4. Attach the container module.
 - ▶ The control unit identifies the container module and will save the new function in it. 
 - ▶ The slow flashing of the green LED indicates a successful operation; the function can be activated (see page 39, parameter F1 – F8). 

During the installation, also observe the following items:

- If the container module is removed, the previously enabled functions will be deactivated after some time.
- For a new installation of the Upgrade Cards, it is necessary to carry out an extended factory setting.
- In case the control unit is replaced, the container module will be taken from the old control unit and attached to the new one. The new control unit synchronizes with the container module and all functions will be available again.
- The Upgrade Card will be rejected if an already enabled Upgrade Card is attached. This is indicated by a fast flashing of the yellow LED. The module is not devalued then.
- If the container module of an external control unit is inserted, the container module will be rejected. This is indicated by a fast flashing of the yellow and the green LED. The module can be synchronized only with a control unit.

8.4.1 Installing the Upgrade Card Fire Protection

1. Install the Upgrade Card Fire Protection as described in 8.3 and 8.4.
2. Insert the supplied light conductor into the larger hole in the side covers on the mains switch side.



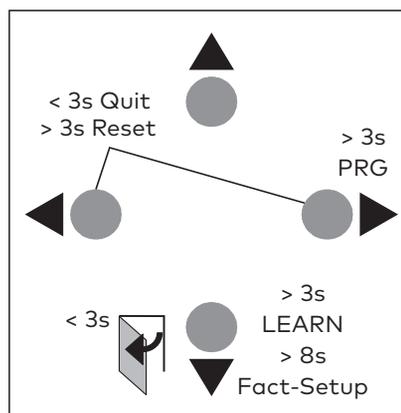
8.4.2 Upgrade Card Barrier-free WC

1. Install the Upgrade Card Barrier-free WC as described in 8.3 and 8.4.
2. Switch off and on again the ED 100, ED 250 so that the functions are applied. When using the Upgrade Card Barrier-free WC, observe the changed terminal assignment under 6.2.

9 Parameterization

After a completed teach-in run, the drive unit can be operated with the basic parameters.

The system also offers the option to adapt the moving parameters to the actual conditions and to activate the enhanced functions. These parameters should already be set during the commissioning according to the preferences of the user.



Parameter / display	Value range	Unit Factory setting = bold	Explanation
Assembly type 	0 – 5	0	Lintel installation hinge side, slide channel pull version
		1	Lintel assembly opposite hinge side, arms push version
		2	Lintel assembly opposite hinge side, slide channel push version
		3	OHC_R
		4	OHC_L
5	Lintel assembly opposite hinge side, arms push version EN7		
Lintel depth 	ED 100: – 3 – 30 ED 250: – 3 – 50	0	The lintel depth is set in 10 mm steps. The required measure can be taken from the assembly drawings. In case the CPD lever is used, 30 mm must be deducted from the real lintel depth.
Door panel width 	ED 100: 7 – 11 ED 250: 7 – 16	10	The rabbet will be included in the door panel width. The door width is shown in 100-mm steps.
Door type 	0 – 4	0	1-panel door
		1	2-panel door, active panel, overlapping door panel
		2	2-panel door, inactive panel, overlapping door panel
		3	2-panel door, active panel, non-rebated door panel
		4	2-panel door, inactive panel, non-rebated door panel
Opening speed 	ED 100: 8 – 50 ED 250: 8 – 60 (in case of low energy reduced to a maximum of 27°/sec.)	Degree / second 25	The opening speed relates to the automatic mode. Country-specific limits must be complied with and tested after the setting. The full setting range is available only if an Upgrade Card Full Energy has been installed. The speed can be changed using this parameter. The permissibility of the setting is checked via internal monitoring. If exceeded, the set value is shown alternating with the active value.
Closing speed 	ED 100: 2 – 50 ED 250: 2 – 60 (in case of low energy reduced to a maximum of 27°/sec.)	Degree / second 25	The closing speed relates to the automatic mode. Country-specific limits must be complied with and tested after the setting. The full setting range is available only if an Upgrade Card Full Energy has been installed. The speed can be changed using this parameter. The permissibility of the setting is checked via internal monitoring. If exceeded, the set value is shown alternating with the active value.
Hold-open time 	0 – 30 (in case of low Energy min. 5 s) 0 – 180 with Upgrade-Card Professional	second 5	The hold-open time should be adjusted so that people have enough time to pass through the door. If a longer hold-open time is desired, you can increase the setting range to 180 s using the Upgrade Card Professional. The hold-open time starts once the contact/voltage on the activator inputs, internal, external, safety, Push & Go is opened/drops and the door is in the open position. The signal can be retriggered. In the operating mode Low Energy, the hold-open time may not fall below the minimum hold-open time of 5 s. The values of 0 – 30 seconds can be set in 1 second steps and values over 30 seconds in 5 seconds steps.
Hold-open time night/bank 	0 – 30	second 10	The hold-open time night/bank (key switch button) can be set separately. The hold-open time night/bank starts once the contact on the activator input night/bank is opened and the door is in the open position. The signal can be retriggered.
Hold-open time in case of a manual opening 	0 – 30	second 1	The hold-open time after a manual opening is in effect with any purely manual opening, even in case of an activated power-assist function and after a stop by the sensor bar.

Parameter / display	Value range	Unit Factory setting = bold	Explanation
Wall suppression BS 	60 – 99 99 = deactivated	Degree 80	Once the set angle has been reached, the input signal of the safety sensor hinge side will be ignored. The wall suppression is required if the door opens against an obstacle. The wider the detection range of the used safety sensor, the larger the range has to be within which the detection is ignored. To protect people, we recommend to minimize this range. If the wall suppression angle is exceeded during the opening of the door, a fast flashing point will appear on the top left on the display of the control unit. This display will disappear when the angle is smaller.
Test Safety sensor 	0 – 6	0	Test off. The safety sensors will not be tested. To be used with the safety sensor IRS-2. In combination with safety sensors according to EN 16005 or DIN 18650, one of the parameters 1 – 6 must be used. The test level Low and High active depends on the sensor and must be set on the sensor to the same value as the drive unit.
		1	Test sensor BS - Level High active
		2	Test sensor BGS - Level High active
		3	Test sensor BS & sensor BGS - Level High active
		4	Test sensor BS - Level Low active
		5	Test sensor BGS - Level Low active
		6	Test sensor BS & sensor BGS - Level Low active
Pulse by safety sensor opposite side hinge 	0 – 1	0	The input signal of the safety sensors will be ignored as soon as the door is closed.
		1	With the door closed, the safety sensor can trigger an opening pulse.
Suppression safety sensor BS during initial run 	0 – 1	0	The safety sensor BS is not active during the initial run (will be suppressed).
		1	The safety sensor BS is active during the initial run.
Unlocking time 	0 – 40	100 ms 1	The unlocking time starts after the pulse. The door will be opened only after the unlocking time has lapsed. When set to "0", the pushing will not be carried out before the unlocking. Depending on the locking device used and in combination with the response contact, the process will change.
Unlocking force 	0 – 9	0	The unlocking force determines the force with which the door is pushed in the „CLOSED“ direction prior to the opening. The time is determined by the unlocking time parameter. The pushing in the "CLOSED" direction can be practical in order to relieve a possibly existing e-opener and to ensure its opening. The higher the value is set, the higher is the load on the arms mounting. In order to have a long service life of the system, adjust this force only as high as really required.
PR-module test 	0 – 1	0	Test off
		1	In case of the SVP-2000 DCW and the M-SVP 2000 DCW from V1.5, it is possible to use a power reserve module that needs to be tested on a regular basis. The test is automatically activated if a fire protection module is detected in combination with a SVP-2000 DCW or M-SVP 2000 DCW from V1.5. The parameter can be subsequently set to 0 but will be reactivated if reset to the factory setting. The test of the PR module is carried out every 24 hours, 10 minutes after the mains has been turned on. In case of an error, no more unlockings will be carried out and therefore also no more automatic door movements will be started.
Static force in the opening direction (basic parameter for wind load control) 	2 – 15 (reduced in case of low Energy)	10 N 6	The forces acting on the closing edge can be changed using this parameter. The permissibility of the setting is checked via internal monitoring. If exceeded, the set value is shown alternating with the active value. Due to system tolerances, the actual forces on the door panel have to be measured after the automatic drive teach-in run and adjusted, if necessary, in order to comply with the local standards and regulations.
Static force in the closing direction (basic parameter for wind load control) 	2 – 15 (reduced in case of low Energy)	10 N 6	The forces acting on the closing edge can be changed using this parameter. The permissibility of the setting is checked via internal monitoring. If exceeded, the set value is shown alternating with the active value. Due to system tolerances, the actual forces on the door panel have to be measured after the automatic drive teach-in run and adjusted, if necessary, in order to comply with the local standards and regulations.

Parameter / display	Value range	Unit Factory setting = bold	Explanation
Latching action pulse 	0 – 9	0	The motor-driven latching action allows you to overcome door seals or locking devices during the closing. Starting with a small value, the setting is to be increased in order to prevent damage to the door.
Latching action angle 	2 – 10	Degree 3	The door opening angle is determined by the latching action angle after which the motor-driven latching action pulse is effective.
Locking force 	0 – 9	0 = off 1 – 9 = on	The locking force will be permanently applied after the latching action. This force is to keep the door in the CLOSED position even if wind pushes against the door. The locking force can be set between 0 (off) and 9 (maximum).
Push & Go 	0 – 1	0 = off 1 = on	Once activated, the door will be automatically opened when the door is manually moved from the "CLOSED" position by an angle of 4° into the direction of "OPEN". For this function, the value "hd" must also be set to 0.
Program switch type 	0 – 4	0	The internal program switch is active.
		1	An external program switch with contacts on the connection board is connected. The connector of the internal program switch must be unplugged.
		2	An external DCW program switch is connected to the connection board. The connector of the internal program switch must be unplugged.
		3	Control of the program switch via TMS software
		4	Control of the program switch via Door Pilot interface, TMS software or DCW program switch
EPS DCW – behavior after a mains reset 	0 – 1	0	In case of a power failure or after a shutdown of the drive unit, the program switch will be automatically switched to the last known position once the mains is switched on. Important: The switching on of the mains may also take place outside business hours and will therefore affect the insurance requirements.
		1	In case of a power failure or after a shutdown of the drive unit, the program switch will be automatically switched to the OFF position when the mains is switched on. This function should be used if the insurance-company approved lock must be provided.
Internal program switch – switch on delay 	0 – 1	0	The function of the internal program switch will be applied by the drive unit immediately after the switching.
		1	After the switching of the internal program switch, the function will be applied with a delay of 10 s. This function is practical if the PGS is to be repositioned and the person must pass the door through the standard detectors after the switching. An additional pushbutton night/bank is not required.
Day activation 	0 – 1	0	The door will always be locked when it reaches the CLOSED position.
		1	In the automatic operating mode, the door will not be locked when the CLOSED position is reached. The locking contact is permanent. This results in a faster opening in combination with motor locks. When an e-opener is used, this opener must be suitable for a 100 % switch-on time in order to prevent damage.
Status relay function 	0 – 6	0	The status relay is deactivated.
		1	The status relay will be switched as soon as the set CLOSED position has been reached.
		2	The status relay will be switched as soon as the set OPEN position has been reached.
		3	Error All errors that result in a message to the internal display will be displayed on the status relay.
		4	Door CLOSED and locked.
		5	Error or information All errors or any information that result in a message to the internal display will be displayed on the status relay.
6	The status relay will be switched if the open door exceeds the parameter "Status contact angle". The value of the parameter can be changed only via the hand terminal.		

Parameter / display	Value range	Unit Factory setting = bold	Explanation
Control unit output 1G, with the input 4/4a 	0 – 1	0 1	Output 1G is independent of contact 4/4a. The locking output (terminal 1G) switches as soon as the contact 4/4a is opened. The contact switches permanently. Therefore, an e-opener with a 100% switch-on time is required for the application, e.g. a closed current contact. This function is not active for motor locks via DCW.
Cycle counter 	0 – 99	10.000 Cycles	The display takes place in increments of 10,000 cycles. Example: display 4 = 40,000 cycles, display 53 = 530,000 cycles. The hand terminal can display the value accurately. The value 99 on the internal display therefore means 990,000 or higher.
Delete error memory 	0 – 1	0 1	Without function. Derror memory will be deleted. The parameter will then be automatically reset to 0.
Resetting the service interval display (LED yellow) 	0 – 1	0 1	Without function. The service cycle and time counter will be reset to the values 200,000 cycles and 12 months. Any setting different from that must be made with the hand terminal (see also Function Service LED).
Factory setting level 	1 – 2	1 2	By pressing the Fact-Setup pushbutton on the user interface > 8 seconds, the drive unit can be reset to the factory setting. The SI parameter can be used prior to the factory setting to determine which data are to be deleted. Standard factory setting: All parameters will be reset to the factory setting. However, the installed Upgrade Cards are kept and do not have to be reinstalled. Extended factory setting: All parameters will be reset to the factory setting. The installed Upgrade Cards will be deleted from the memory of the control unit. The control unit and Upgrade Card can be used independently of each other again (delivery state).
Opening angle 	0 – 110	Degree	The opening angle set during the teach-in run will be displayed here. It can be changed only by performing a teach-in run. Due to assembly and parameter tolerances, the display may differ from the actual door position.
Door closer/automatic mode 	0 – 1	0 1	The automatic mode should be used if the door is preferably opened automatically and if motion sensors are used. In case of blockages during the closing, the drive will automatically reverse. The movement has been optimized for a safe closing. The wind load control and the Push & Go function can be used only in the automatic mode. The door closer mode should be used if the door is opened manually most of the time and only rarely automatically. In case of blockages during the closing, the door will remain in the current position. The movement has been optimized for the manual opening. The power-assist function is to be used only in the door closer mode.
Power-assist starting angle 	1 – 5	Degree 3	Sets the angle after which the power-assist function is to be effective. The smaller the value, the more sensitive the response of the power-assist function.
Power-assist power assistance 	0 – 10	0	Sets the power-assistance. The higher the value, the easier it is to open the door manually. At 0, the function is deactivated. The power-assist function is available only in the door closer mode (hd=1). If the assistance has been set too high, the door can open automatically.
Assistance manual mode in CLOSED position 	0 – 99	0	Setting of the strength of the power-assist in the CLOSED position. The higher the value, the easier it is to manually open the door from the CLOSED position. The power-assist function is available only in the door closer mode (hd=1).
Upgrade-Cards	0 – 3	0 1 2 3	Upgrade Card not installed, function not available. Upgrade Card installed, function not activated. Upgrade Card installed, function activated. Upgrade Card has been removed, function is no longer available.

Parameter / display	Value range	Unit Factory setting = bold	Explanation
Upgrade Card Fire Protection 		0,2,3	Once installed, the value will change to 2. The Upgrade Card Fire Protection is needed for a hold-open system according to EN 14637 or similar standards. The line-monitored detector input for the connection of the RM-ED is available only with the installed Upgrade Card Fire Protection. The Full Energy function will be automatically activated.
Upgrade-Card Full-Energy 		0, 2, 3	After the installation of the Upgrade Card, the value 2 will be automatically activated. The full setting range will be available for the parameters So, Sc, Fo and Fc after the activation.
Upgrade-Card Professional Impulse relay 		0, 1, 2, 3	Once installed, the value will change to 1. The function must be activated by also setting the parameter F3 to the value 2. With the impulse relay, the door can be controlled according to needs via a pushbutton without a hold-open time. The door opens with the first pulse and closes only with the second pulse of the pushbutton. The pushbuttons must be connected to a night/bank input (3 & 35 or 57 & 57a). Internal and external detectors will still be controlled via the hold-open time dd. The combination with the nurse bed function is possible; in addition to the night/bank inputs, pulses on the inputs nurses or beds will then cause a permanent opening.
Extended hold-open time 		0, 2, 3	After the installation, the value will change to 2. The setting range of the parameter dd will be extended from 0 – 30 seconds to 0 – 180 seconds; the door can thus be held open for a longer period of time.
Nurse beds (combination with EVAC function not possible) 		0, 1, 2, 3	After installation, the value changes to 1. The function must be additionally activated by setting the F5 parameter to the value 2. The function allows separate (only active door leaf, nurse) or joint (active and passive door leaf, beds) opening of 2-leaf doors. The activator for the nurse opening must be connected to the terminals of the outside detector 41 & 3, the one for the bed opening to the terminals of the inside detector 42 & 3. If the Push & Go function, parameter PG, is activated at the same time, only the active door leaf opens automatically during manual access. The Night/Bank entrances cause the active door leaf to open only. When this function is activated, the program switch function output is not available. A combination with the current impulse function is possible. Impulses at the nurses or beds' inputs then cause it to open permanently.

Parameter / display	Value range	Unit Factory setting = bold	Explanation
EVAC/ SPV 		0	no Upgrade Card Professional installed
		1	Upgrade Card installed
		2	EVAC mode activated The function is controlled via input 43. The effective direction is set via the hand-held terminal. Special function menu: Switch mode EV/S: Normally closed/ normally open contact. Function Input 43 not active Normal operation Input 43 active - Display IN 18 <ul style="list-style-type: none"> • Low-energy operation automatic opening possible via input 35, hold-open time limited to 20s. • Power assist support possible, see parameters hA, hF, hS • Optional: Switch-off of safety sensors, see parameter S6 • Optional: End stop EVAC, see parameter S7
		3	SPV mode activated The function is controlled via input 43. The effective direction is set via the hand-held terminal. Special function menu: Switch mode EV/S: Normally closed/ normally open contact. Function Input 43 not active Normal operation Input 43 active - Display IN 19 <ul style="list-style-type: none"> • Travel parameters SPV are used. • Setting only possible via hand-held terminal. Special functions menu • Power assist function is switched off, operator operates in automatic mode hd=0 • Speed Up/ SPV ED 100: 2 – 50%/s ED 250: 2 – 60%/s with Low Energy, each reduced to max. 27%/s • Force open/close SPV ED 100: max. 150N ED 250: max. 200N with Low Energy each reduced to max. 60N • Optional: Locking force SPV Function See parameter FH • Optional: End stop pulse SPV Function See parameter S7 • Optional: Pressure time SPV Strength 0-10s After closing, the door is pressed shut for the set time with increased force. • Optional Safety sensors switch-off, see parameter S6
4		Upgrade card was removed, 2/3 deactivated	
Upgrade Card Handicapped WC 		0 , 1, 2, 3	Once installed, the value will change to 1. The function must be activated by also setting the parameter F7 to the value 2. A mains reset is also required after the activation. Turn off the device and turn it on again after 10 seconds. With the use of the Upgrade Card Barrier-free WC, the inputs and outputs of the control unit are assigned with the functions specially required for this application. The required accessory components can be directly connected.
Upgrade-Card DCW 		0 , 2, 3	Once installed, the value will change to 2. The DCW bus on the drive will be available after the activation. The following components can be connected: - Program switch EPS DCW (max. 2 pieces), - Motor lock controls SVP-S 2x DCW (max. 2 pieces) - Motor lock SVP 2000 (max. 1 piece) - Key switch button ST 32 DCW (max. 2 pieces) - I/O module DCW (max. 1 piece)
Configuration of the interface COM1 (upright connector) 	0 – 1	0	Hand terminal operation. The interface has been programmed for the communication with the hand terminal.
		1	<ul style="list-style-type: none"> - Door Pilot Interface for controlling the device using the Door Pilot App. - TMS software

Parameter / display	Value range	Unit Factory setting = bold	Explanation
Opening dampening when opened manually 	5 – 40	10°	In this case, enter the angle after which the door is braked when manually opened. The entered value counts backward from the set opening angle. Example: Opening angle: 90° Parameter bc: 12° => opening dampening starts at 78°
Door thickness 	0 – 99	0... 35 ...99 mm	The door thickness affects the measured door opening angle. If a more accurate resolution is required, you can enter the actual door width.
Shutdown drive function effective direction 	0 – 1	0	Normally closed contact In case of a normally closed contact, the drive function will be shut down. This effective direction must be used for door lock switches which are equipped with a changeover contact or normally open contact.
		1	Normally open contact In case of a normally open contact, the drive function will be shut down. This effective direction must be used for door lock switches which are equipped with a normally open contact.
Night/bank effective direction 	0 – 1	0	Normally open contact The night/bank function will be triggered in case of a normally open contact. This effective direction is preferred for a key switch button or access control.
		1	Normally closed contact The night/bank function will be triggered in case of a normally closed contact. This effective direction is often used for the connection to an RWA or GLT system in order to activate doors with a normally closed contact.
Triggering the hold-open system by disengaging the door panel 	0 – 1	1	Function switched on If the drive is operated as a hold-open system, the manual triggering can be carried out via the manual closing of the door panel by 10° (+/- 2°) from the taught hold-open time. A manual release button is not required.
		0	Function switched off If the drive is operated as a hold-open system, a manual release button will be required for the manual activation.
Castor angle for 2-panel doors 	0 – 30	0... 30°	Here you can adjust the angle the active panel has to travel before the inactive panel begins to open.
Clearance between hinges 	+ 5 – - 5	3	The clearance between hinges is crucial for the calculated door angle. It may only have a small effect but it can be adjusted in extreme cases to increase the accuracy. The basic setting of the parameter HS is 3, for 30 mm. In case of center-pivoted doors, the setting must be changed to the negative. A teach-in run is then required as the system creates an angle table as a function of the set parameters.
Dauerauf über Nacht/Bank-Eingang 	0 – 1	0 = nicht aktiv 1 = aktiv	Wird der Impulsgeber Nacht/Bank >5 Sekunden betätigt, wechselt der Antrieb in die Funktion Dauerauf. Die Funktion wird durch nochmalige Impulsgebung aufgehoben.
Vandalismus Freischaltung 	0 – 1	0 = nicht aktiv 1 = aktiv	Wird die Tür manuell entgegen der Motordrehrichtung betätigt, wird dies erkannt und der Motor freigeschaltet um Schäden an der Mechanik zu vermeiden.
Sonderfunktion 	0 – 1	0 = nicht aktiv 1 = aktiv	Reversieren bei Auslösung SL-BGS im Betriebsmode hd=1
Special function EVAC/SPV mode, safety sensors inactive 	0 – 1	0	BS and BGS safety sensors are active in EVAC/SPV mode
		1	Safety sensors BS and BGS are deactivated in EVAC/SPV mode. Switching them off can create danger points and people may be hit by the door. We recommend continuing to use safety sensors, especially when using the SPV function. Any switch-off should be documented in the risk assessment.
Special function EVAC/SPV mode, end stop angle 	0 – 10	0...10°	The end stop angle defines the door opening angle from which the motorized end stop pulse is effective in EVAC/SPV mode. This can be used independently of the standard end stop EP.

10 Diagnosis/troubleshooting

dormakaba drive units ED 100, ED 250 meet a high safety standard and comply with all technical regulations and requirements. Internal as well as external safety circuits managed by the drive unit will be periodically monitored.

During the operation of the devices, situations may arise that lead to an error message.

The drive unit tries to determine the cause and react accordingly. The reaction takes place depending on the severity of the cause and ranges from an information to the shutdown of the automatic functions of the drive unit.

In this case, the drive unit switches into the emergency mode and acts as a door closer.

The door can be manually passed through.

Information "In" and error messages "EO" ... "E9" will be shown on the display of the user interface and the red LED on the internal program switch.

The output to the LED is coded and can be taken from the error table.

Error messages "EO" ... "E9" will be saved in the error memory and can be read off the display of the interface or from the hand terminal. A current error information will always occupy the error message memory cell E0. In case of another error or its acknowledgement, it will be moved to the error message memory cell E1.

A maximum of 9 errors can be saved in the error memories

E1 – E9. The same error messages occurring successively will not be saved again.

To call up the error messages E0 ... E9 briefly press  .

10.1 Information "In"

Information is provided for the easy servicing of the drive unit and points to both faulty states and operating states that suppress the automatic operation of the drive unit.

Example:

In 08 Emergency stop is pressed; the drive unit does not perform automatic functions.

In 01 A blocking has been detected; the drive unit keeps operating.

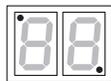
An information can become an error message in case of a repeated occurrence.

10.2 Error messages "EO" ... "E9"

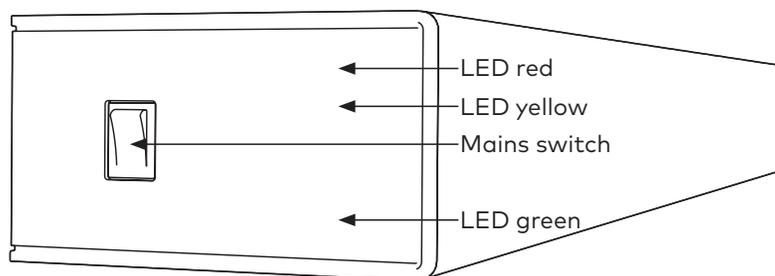
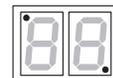
Error messages indicate a hardware defect. However, installation errors and the manual operation during safety tests can also cause error messages, and the system will switch into the emergency mode. The following options are available for the reset of error messages:

- Switching the program switch to off or resetting by pressing the reset button of the user interface with the casing open.
- Mains reset. Switching off the mains switch. Restart after 10 seconds.

The cause should be analyzed and eliminated before an error message is acknowledged. The following table will provide assistance.

Error	Possible cause	Remedy
The door can be passed only manually or the door does not open automatically after an opening pulse.	Testing of the green LED.	The mains switch must be switched on.
	If the green LED is not lit, there is a problem with the power supply.	The power supply must be tested and restored, if necessary.
	Testing of the red LED.	If power is supplied but 24 V DC is not available, the mains adaptor must be replaced.
	If the LED flashes on the mains switch, the control unit found an error and the emergency mode is activated.	The troubleshooting is described in the „Information and error messages“ list.
During the installation: It is difficult to manually open the door and the closing movement takes place at a high speed.	The program switch is in the Off or Exit only position.	Put the program switch into the Automatic or Permanent Open position.
	There is a signal from the safety sensor on the hinge side. This signal prevents the opening.	The signals of the safety sensors will be displayed for the diagnosis directly with the 2 decimal points of the LED display on the user interface.  In case of a detection, the respective decimal point will light. The wiring and function of the system must be tested. If the LED at the top left flashes, the wall suppression will be active. There is no error.
	The connector of the braking circuit is in the incorrect position.	The connector must be positioned correctly depending on the arms assembly used. See page 23 point 5.11

Error	Possible cause	Remedy
The teach-in run cannot be started.	The program switch is in the incorrect position.	Turn the program switch into the „OFF“ position.
	The signal shutdown drive function (4/4a) is active.	Test the wiring of the smoke detector or the stop signal on 4/4a.
The internal/external program switch does not work or works incorrectly	The parameter program switch type is incorrectly set.	The type used must be correctly set as parameter program switch type.
	The cable of the internal program switch is not attached.	Test the cable and connect, if necessary.
	Connection error or switch defect.	The wiring and function of the switch must be tested.
The door opens automatically but closes only after a long time or not at all.	The hold-open time is too long.	Reduce the hold-open time.
	The program switches in the Permanent Open position.	Switch the program switch.
	There is a signal from the safety sensor on the opposite hinge side and it prevents the closing.	The signals of the safety sensors will be displayed for the diagnosis directly with the 2 decimal points of the LED display on the user interface. In case of a detection, the respective decimal point will light. The wiring and function of the system must be tested. If the LED at the top left flashes, the wall suppression will be active. There is no error.
	There is a signal from a connected activator that prevents the closing.	The wiring of the connected activator must be tested. A normally open contact is to be used in all cases. The signal input 57/57a may be operated with external voltage. Remove the signal lines 35, 57, 42 and 41 one after another in order to localize the error.
The speeds differ strongly from the set parameters.	The teach-in run was performed with a warm motor and the door panel weight was therefore incorrectly determined.	Repeat the teach-in run with the motor cold.



11 Error messages

Display	Display LED	Meaning/cause	Troubleshooting
In 01	none	Blockage The door is blocked due to an obstacle and the door movement was stopped by the drive unit.	The door movement should be tested in a deenergized state and a possibly existing stiffness must be eliminated. The permanent operation of a defective door may damage the drive unit. A blocking is also often triggered by people. The reason for this might be that the detection range of the sensors is not suitable for the drive unit and that the door will inevitably be touched during the passage. In this case, the detection range of the sensors and/or the opening speed of the drive unit should be increased. The effectiveness is to be verified by passing through the door.
In 08	none	Shutdown drive function The contact 4/4a is opened. The drive unit switches into the emergency mode and only a manual passage is possible.	An emergency command mechanism, a door lock switch or other safety system may be connected to the input. Either the system has actually triggered or there is a defect. The activation must be reset. The drive unit starts the operation automatically. If this is not the case, the wiring and the causing systems must be tested.
In 09	none	Upgrade Card signal error The installed Upgrade Card was removed or the initially installed Upgrade Card (container module) had not been inserted during the installation of 2 Upgrade Cards.	Installed Upgrade Cards must remain permanently in the control unit and must not be removed. If several Upgrade Cards are installed, the Upgrade Card used first has the function of a container module and must be the last one to be attached to the control unit (see chapter Upgrade Card). In case of a defective container module, a new set of functional modules must be used.
In 11	Red LED lights	Resolution hold-open system The hold-open system was triggered.	The hold-open system can be triggered automatically by the smoke detector and manually by a hand trigger button or by disengaging the door panel. According to DIN 18263-4, the recommissioning must be deliberately performed. Depending on the configuration of the system, this is done by manually opening the door up to the taught opening angle, via the PGS by switching into the OFF position or by a reset via the pushbuttons and on the internal user field. It has to be ensured that the smoke detector has not been triggered. If a reset has not been successful, there may be a defect on the smoke detector connection and the system must be inspected by qualified personnel.
In 14	none	The 24V for external components is not available.	The most common cause is a short circuit of the 24V supply.
In 18		EVAC mode is active	
In 19		SPV mode is active	
In 23	none	Locking alarm The door is blocked in the CLOSED position. An opening is not possible.	The most frequent cause is a closed door. The error can be avoided if a door lock switch is installed. The door lock switch detects the switching state of the deadbolt and switches the drive unit off, if necessary. A door lock switch is recommended as the permanent opening against the closed door may damage the drive unit or the door.
In 61	none	Communication error in case of a 2-panel operation The communication between the 2 devices is interrupted.	The communication cable between the 2 drive units must be checked. After a visual inspection, check if the correct interface on the control unit has been used.
In 71	none	Error in 2nd switch-off path. 2nd switch-off path test failed	After an error has been detected in the 2nd switch-off path, the test is repeated during the next closing movement. If there is no error then, the information is deleted, otherwise the error is still displayed.
In 72	none	Current measurement circuit The periodically performed test of the internal current measurement circuit could not be successfully performed.	System tolerances and environmental conditions influence the current measurement. That is why it cannot always be successfully completed the first time. The information is shown in this case. This, for example, is the case if the door is manually passed through during the measurement. The test will be automatically repeated.

Display	Display LED	Meaning/cause	Troubleshooting
In 73	none	Braking circuit test The periodically performed test (every 24 hours) of the internal braking circuit could not be successfully performed.	System tolerances and environmentally conditions influence the braking circuit test. Therefore the test cannot always be successfully completed the first time. The information is shown in this case. This, for example, is the case if the door is manually passed through during the measurement. If the test has been negative 10 x in a row, the error message E 73 will be displayed.
In 91	none	DCW communication At least 1 registered DCW device is missing.	Reconnect the corresponding DCW device. If this is not possible, you must restart the drive unit. Press simultaneously ◀ and ▶ on the internal user field for a minimum of 3 seconds.
E 02	2 x flashing	Locking error The drive unit tries to open or close a locking device with a feedback contact or a DCW locking device. An error occurred.	In this case, you have to assume a defect on the locking device or an error in the wiring. The locking feedback contact must be tested and replaced, if necessary.
E 03	3 x flashing	DCW program switch is missing	Check and replace, if necessary, the DCW program switch.
E 04	4 x flashing	Test error safety sensor The test of the corresponding safety sensors has not been successful. A test signal is sent to the corresponding sensor prior to each opening or closing movement. The drive unit expects a response within a certain time window	First, it must be checked whether the parameter „Test safety sensor“ is configured accordingly. Then it is to be checked whether the test has also been activated on the sensor itself and whether it is operated with the same level. The test is turned off when the sensors are delivered.
E 12	12 x flashing	EEPROM error The internal memory check could not be successfully completed. The drive unit operates in the closer mode.	You can try a reinitialization by reloading the current firmware. If that fails, the control unit must be replaced.
E 13	13 x flashing	Excess current detection More power is taken from the system than the mains adaptor can provide	The motor consumes too much power or the control end stage is defective. In case of recurrence, the components motor gear unit and/or control unit are to be replaced.
E 15	15 x flashing	Faulty teach-in run The teach-in run could not be completed.	The error can occur if the teach-in run has been interrupted, e.g. through manipulation of the door during the process. The teach-in run must be restarted.
E 25	5 x flashing	SVP DCW PR module The test was negative.	Check the wiring and, if necessary, replace the PR module.
E 51	5 x flashing	Incremental encoder error	In case of an error, the plug connections of the incremental encoder and the motor as well as the circuit of the locking device are first to be checked for a short circuit. If no error can be found, the motor gear unit must be replaced. The error can be caused by a defective motor or a short circuit in the electric circuit of the locking device. The motor gear unit must be replaced in case of a defective motor.
E 52	5 x flashing	The incremental encoder monitoring has detected a faulty state.	
E 53	5 x flashing		
E 62	6 x flashing	The second system has an incompatible firmware version for the 2-panel operation.	Both control units are to be fitted with the same firmware version.
E 63	6 x flashing	The second system has an incompatible fire protection setting.	In case of 2-panel systems, the Upgrade Card Fire Protection must be installed in both control units.
E 71	7 x flashing	System error 1 (2nd switch-off path) In order to switch off the drive unit always reliably, several switching elements are used. They are periodically tested for its functioning.	If the test is always negative, the control unit must be replaced
E 72	7 x flashing	System error 2 (current measurement circuit) The current measurement circuit is part of the safety mechanisms and will be periodically tested for its functioning. The drive unit operates in the emergency mode.	If the test is always negative, the control unit must be replaced.
E 73	7 x flashing	System error 3 (braking circuit) The braking circuit is a safety element in the closer mode and will be tested every 24 hours. During the test, the motor is shut down during the closing movement and the door closes a set angle in the emergency mode. The test can be noticed as a short jerk on the door panel and is no reason for a complaint.	The door closes in the deenergized state too fast (in under 3 seconds). Check and reduce, if necessary, the closing speed (see page 24, point 5.13). If the test is always negative despite the correctly set closing speed, the control unit must be replaced.
PF		Short circuit of the 24V supply voltage	Eliminate short circuit.

Display	Display LED	Meaning/cause	Troubleshooting
- 1		Energy management The motor is too hot (e.g. due to an excessive ambient temperature).	The movement dynamics in the CLOSED direction will be reduced.
- 2		The system responds automatically.	The movement dynamics in the OPEN and CLOSED direction will be reduced.
- 3			The system shuts down for 3 minutes (door closer mode).
- 4			The hold-open time will be extended.

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