



ED 100
ED 250

Operating instructions

This instruction manual is designed for all those operating their automatic door system with an ED 100 or ED 250.

It is intended for the person responsible for the technical maintenance and reliable functioning of the door system.

Please read these instructions carefully and keep them readily to hand within the close range of the door system.

Contents

	Page
1. For your safety	16 - 17
2. EC declaration of conformity	18
3. EC declaration of incorporation	19
2. System setup	20
3. Technical specifications	20
4. Functional characteristics	21 - 22
5. Malfunctions	22
6. Accessories	23

„Translation of original operating instructions”

1. For your safety

This documentation contains important information regarding the mounting and the safe operation of the door system. Read these instructions carefully before operating the ED 100/250.

It is important for your personal safety to abide by all enclosed instructions.

An incorrectly performed installation might cause serious injuries.

Using control elements, making adjustments or performing procedures that are not described in this documentation might cause electric shocks, danger caused by electric voltage/current and/or danger due to mechanical incidents.

Please keep these documents for further reference and hand them over to the person in charge in case the system is transferred to another party.

Explanation of symbols



NOTE This symbol underlines important information that may facilitate your work.



REMARK This symbol warns you of possible system damage and explains how to avoid this damage.



WARNING This symbol indicates dangers that might cause personal or material damage or even kill people.

Intended application

As electromechanical swing door operators, the ED 100 and the ED 250 are only designed to open and close interior swing doors with a door-leaf weight of up to 100 and 250 kg respectively.

Simply select the suitable version according to your prevailing door-leaf width and weight.

Both operators are suitable for installation as pull-version with ED slide channel set and as push-version with the ED standard arm. The closing force paths have been optimised for the respective ways of mounting and comply with the requirements of EN 1154.

Limitation of liability

The ED 100/250 may only be used according to their specified intended application. DORMA GmbH + Co. KG will not accept any liability for damage resulting from unauthorised modifications of the ED 100/250. Furthermore components/accessories that have not been approved by DORMA are exempted from liability.

Safety instructions

! Work on electrical equipment may only be performed by properly qualified staff (electricians).

- Do not allow children to play with the ED 100/250 or its rigidly mounted adjustment and control devices.
- Keep remote controls out of reach of children.
- Never stick metal objects into the openings of the ED 100/250; otherwise you might sustain an electric shock.
- The ED 100/250 has to be secured against water and other liquids.
- Only specially qualified staff may open the power supply housing.
- Disconnect the ED 100/250 from power supply (de-energise the system) before removing the cover of the power supply housing.

Low-energy product

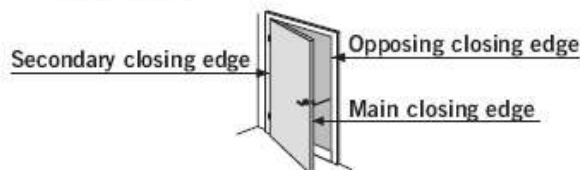
The ED 100/250 meets the requirements of a low-energy application in accordance with the German DIN 18650 (industrial standard):

- Reduced dynamic force at door leaf and reduced contact force via low driving speeds
- Reduced static force at door leaf and reduced contact force via force limitation

The door system does not compulsorily require additional safety equipment.

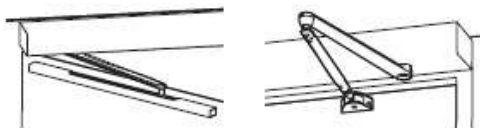
Dangers at closing edges

! Automatic doors may cause hazards by crushing, shearing, hitting and drawing-in at the different closing edges.



Dangers caused by slide channel and arm

! The slide channel and the arm may cause hazards by crushing and shearing.



Residual risk

Depending on the structural conditions, the prevailing door version and the available safety equipment, residual risks (such as crushing and hitting – with limited force) cannot be excluded.

All people using a door are generally aware of the danger spot at the secondary closing edge of every swing door (also at manually operated doors).

This danger spot cannot be influenced by the manufacturer of the operator and a protection of this closing edge often cannot be realised due to its construction and technical function.

A suitable clamping protection (like a rubber or textile cover) is available in the specialised trade and not part of the scope of delivery.

Recycling and disposal



Both the ED 100/250 and its packing mainly consist of recyclable raw material.

The ED 100/250 and the respective accessories must not be disposed of as domestic waste. Please ensure that the old appliance and the respective accessories (if available) are properly disposed of.

Abide by the prevailing national statutory provisions!

Inspection and system approval

Before the first commissioning and depending on requirements, however, at least once a year, the ED 100/250 has to be inspected by a properly qualified technician and serviced if required.

A person trained by DORMA has to perform the inspection and approve the system with the aid of the inspection book.

The respective results have to be documented in accordance with DIN 18650-2 and the facility operator has to keep these documents for at least one year.

We would recommend taking out a maintenance agreement with DORMA.

Maintenance and Care

The system has to be de-energised/disconnected from power supply before any kind of maintenance work or cleaning is performed (switch off fuse).

You may clean the ED 100/250 with a damp cloth and standard commercial detergents.

You should not use scouring agents for cleaning purposes as they might damage the surface finish.

Wear

The following wear parts have to be inspected once a year and replaced if required:

- Arm
- Slide shoe
- Slide channel

Only use original spare parts.

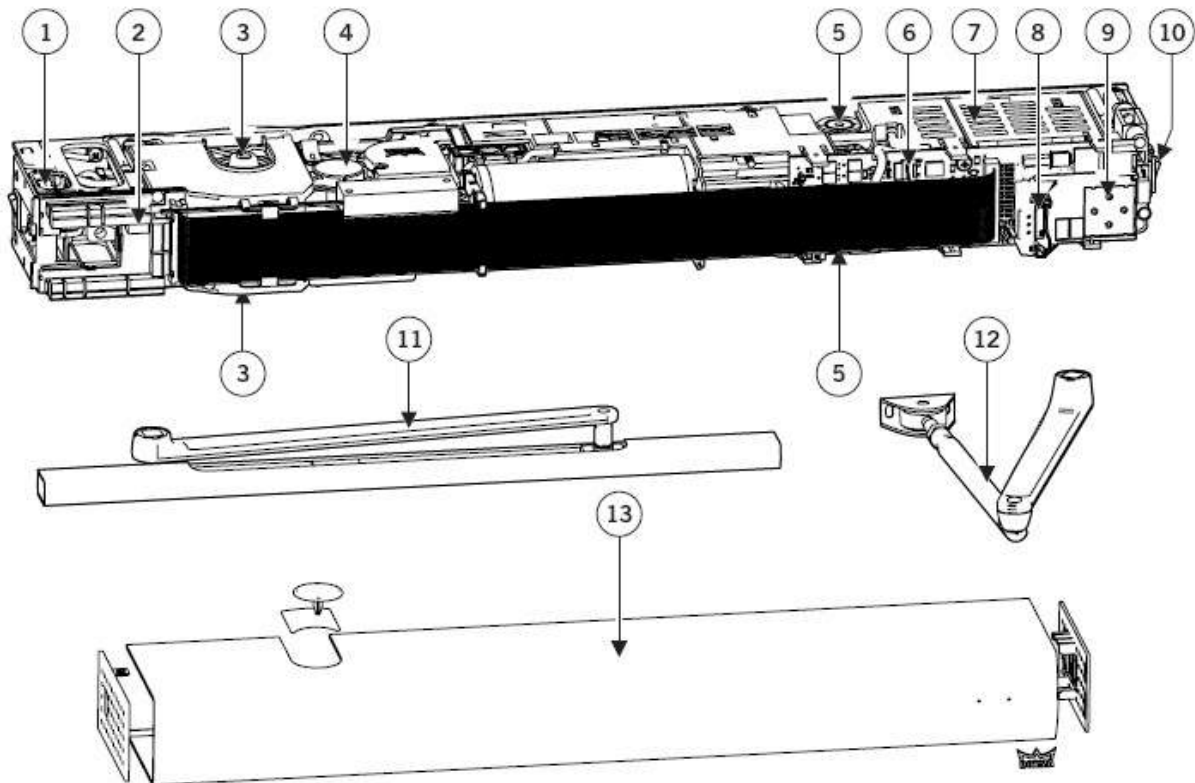
4. System setup

Operator system

The operator system comprises all core components.

Select the system in accordance with the door-leaf width and the door-leaf weight.

- | | |
|--------------------------------------|--|
| 1. Mains connection | 8. Slot for DORMA Upgrade Cards |
| 2. Connection unit | 9. User interface with information display |
| 3. Axle connection on both sides | 10. Internal program switch |
| 4. Drive system (motor/gear/ spring) | 11. * Slide channel (Set) |
| 5. Adjustment of closing force | 12. * Standard arm |
| 6. Control unit | 13. * Complete cover |
| 7. Switching power supply unit | * Not part of the scope of delivery. |



5. Technical specifications

Required operating conditions

Ambient temperature
Only suitable for dry environments
Power supply
Power consumption for external accessories Max.

-15 to +50° C
relative humidity max. 93%, non-condensing
230 V AC +/- 10% 50 Hz
1500 mA

General specifications

Dimensions (WxHxD)
Operator weight
Power supply for external accessories

685 x 70 x 130 mm
12 kg
24 V DC +/- 10%, 1.5 A

ED 100

Power consumption
Closing force EN 1154
Opening speed*
Closing speed*

Max. 120 Watts
EN 2-4, adjustable (Fire protection from EN 3 on)
Max. 45° / second
Max. 45° / second

ED 250

Power consumption
Closing force EN 1154
Opening speed*
Closing speed*

Max. 240 Watts
EN 4-6, adjustable
Max. 60° / second
Max. 60° / second

4. Functional characteristics

DORMA ED 100 and **ED 250** are electromechanical swing door operators and suitable for various fields of application. Select the respective version depending on the prevailing door-leaf width and the door weight.

While the **ED 100** is suitable for doors with a weight of up to 100 kg and a door width of 1,100 mm, the **ED 250** is designed for doors with a width of 1,600 mm (1,400 mm when installed at fire and smoke doors) and a door weight of 250 kg.

Both operators may be installed as push-version with standard arm and as pull-version with slide channel. All these variants are suitable for application at fire and smoke doors.

The swing door operator opens the door automatically as soon as an activator has been triggered.

In case a suitable locking device is installed, it will be unlocked before the door starts to move.

The adjusted hold-open time starts as soon as the door is open and the door closes automatically on expiry of the adjusted time.

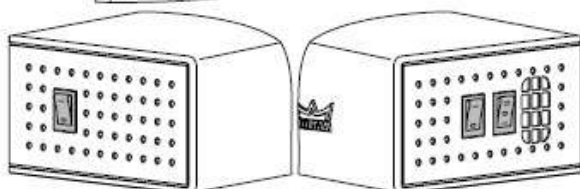
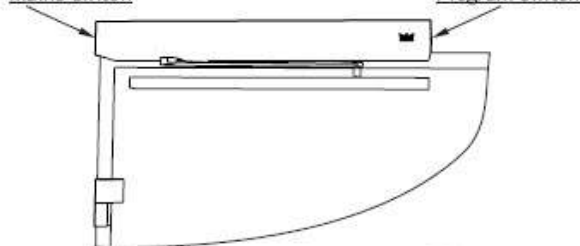
Users may access the door manually at any time. In this case the operator has the function of a common door closer.

Switches

The mains switch is always installed on the side of the door hinge, while the internal program switch is always installed on the side of the main closing edge. The external program switch is mounted within the close range of the door.

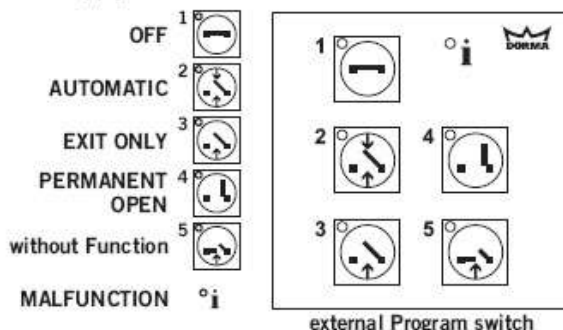
Mains switch

Program switch



Power supply

internal Program switch



external Program switch

Program switch

The program switch may be installed internally or externally and is available in a 4-position and a 3-position version.

The 3-position program switch does not offer an EXIT ONLY function.

Functions

- OFF** The door opens automatically when the Night-/Bank activator is triggered and closes on expiry of the Night-/Bank hold-open time.
- AUTOMATIC** The door opens automatically when one of the activators is triggered and closes on expiry of the adjusted hold-open time.
- PERMANENT OPEN** The door opens automatically and remains open until the function is deactivated.
- EXIT ONLY** The door only opens automatically after the internal activator or the Night-/Bank activator has been activated. The door closes on expiry of the adjusted hold-open time.

Selection of functions

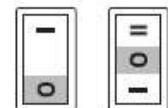
Activate the desired function by pushing the respective key on the external program switch (see picture at the bottom of the left column).

When performing adjustments with the aid of the internal program switch, you have to adjust both switches in a certain combination:

The front switch is only adjusted to "I" if you want to adjust the EXIT ONLY function.

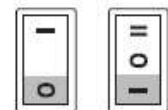
OFF

Adjust both switches to "0".



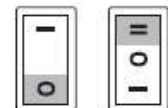
AUTOMATIC

Adjust the front switch to "0", and the other switch to "I".



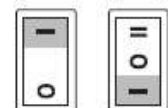
PERMANENT OPEN

Adjust the front switch to "0", and the other switch to "II".



EXIT ONLY

Adjust the front switch to "I", and the other switch to "I".



Activators

Internal and external activators, a Night-/Bank activator and an intercommunication system may be connected to the door system. The internal activator is normally installed inside the building or room while the external activator is installed on the outside of the building or room. A Night-/Bank activator is mounted on the outside and often realised as card reader or key switch.

Manual locking device

When the door is locked by hand:

- The operator must be adjusted to OFF in order to avoid damage to the door system.
- If a lock switch is installed, the operator will be switched off automatically.

DORMA recommends installing a lock switch.

Safety equipment

The required safety equipment in accordance with the latest state of the common and country-specific standards, laws, codes and regulations has to be installed before the system is mounted.

The **ED 100** and **ED 250** operators may be used in a low-energy-mode and a full-energy-mode.

Low-Energy-Mode

The low driving speed of the door avoids dangers resulting from the automatic movement of the door as far as possible. The door opens at an extremely low speed and thus offers a high safety level.

Full-Energy-Mode

Due to the high driving speed of the door, the swing path has to be protected with the aid of sensors.

Safety sensors that are mounted to the door leaf monitor the swing path and thus avoids that people are hit by the door as far as possible.

Safety sensors on hinge side

In case an obstruction is detected within the detection range of the safety sensors:

- The door stops during its opening cycle
- The door remains closed (does not perform an opening cycle) if the door is in "closed" position.

The operator will resume standard operation as soon as the detection range is no longer obstructed.

Safety sensors on opposite hinge side

In case an obstruction is detected within the detection range of the safety sensors:

- The door will reverse during the closing cycle
- The door will remain open.

The operator will resume standard operation as soon as the detection range is no longer obstructed.

Maintenance interval indicator

In case you have installed the internal 4-position program switch, you will have a maintenance interval indicator. A yellow LED informs you that the system has to be serviced. DORMA Service may adjust the maintenance interval indicators.

7. Malfunctions

Malfunctions may have different reasons.

Ambient conditions often cause malfunctions, thus the operator tries to analyse these conditions and to respond correspondingly. In this case the operator interrupts its currently adjusted function and restarts following a certain standby-time or when a new pulse has been triggered. In case this fails, the automatic function of the operator is switched off and the system displays an error message.

A red LED at the program switch indicates the malfunction. The LED either blinks or shows a continuous light and thereby indicates that the malfunction has to be removed by DORMA Service.

Self-help in case of malfunctions

You have the following options to reset error messages:

1. Set program switch to OFF or reset the system with the aid of the RESET key on the user interface while the cover is open.
2. Mains reset: Set mains switch to OFF; then wait for 10 seconds and set it back to ON position.

Always analyse and remove the cause for the malfunction before you acknowledge the respective error message. The following table is designed for you assistance.

Please check the following questions in case the door still does not close or open:

- Is the power supply available?
- Is the mains switch adjusted to ON?
- Is the door freely movable?
- Is the door locked manually? Has the lock switch been activated?
- Is the program switch properly adjusted (correct position)?
- Is the swing path unobstructed?
- Has the hold-open device been triggered?

In case you have checked all the above-mentioned questions and the system still does not work, please contact DORMA Service to remove the malfunction.

8. Accessories

Electrical connection

Apart from the broad range of DORMA accessories, also other manufacturers offer various activators, locking devices, safety sensors and further accessories that are compatible with ED 100 and ED 250 operators. All accessories that are approved by DORMA for application at ED 100 and ED 250 operators are listed on the positive list for accessories.

www.dorma.com/positivliste

DORMA cannot ensure the compatibility of devices that are not listed on the positive list. If these components are used nonetheless, it might happen that the full range of functions is **not** available or that the operator works improperly. Furthermore the operator or the connected component might be damaged.

See **limitation of liability** on page 3.

Activator

In general we refer to the following devices as activators:

- Radar motion detectors
- Passive infrared motion detectors
- Pushbuttons
- Switches
- Sensors
- Radio systems, infrared receivers
- Access control systems
- Telephone systems and intercoms

Minimum requirements

Operating voltage with power supply via operator:

24 V DC +/- 10%

Pulse width:

min. 200 ms

Potential-free output

(When installed at internal signal input, external detector or Night-/Bank)

Energised output (telephone systems):

8 - 24 V DC / AC + 10%

Locking device

In general we refer to the following devices as locking devices:

- Elektrische Türöffner (E-Öffner)E
- Electric strikes Motor locks with feedback contact
- Multi-point locking device with feedback contact
- Door magnets

Motor locks/multi-point locking devices without feedback contact cannot be directly connected to the operator. In order to ensure that the operator and the locking device work together properly, the locking device has to comply with the following specifications:

Minimum requirements

Operating voltage with power supply via operator:

24 V DC +/- 10%

Operating voltage with external power supply:

max. 48 V DC/AC

Current load for relay contact of locking device:

max. 1 A

Rated for continuous duty: electric strike:

min. 30%

Rated for continuous duty: motor lock:

100 %



Door Control



Automatic



**Glass Fittings and
Accessoires**



**Security/Time and
Access (STA)**



Movable Walls

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