

# Upgrade your safety

## ED 100/250 swing door operators with EVAC & SPV



### Flexible functions for modern buildings

Doors should open any time with little force, and should always close securely. As simple as this sounds, the technical implementation is becoming increasingly complicated. Buildings need to offer barrier-free escape routes, stairwells are kept free of smoke with pressure aeration, stack effects create permanent drafts – and all these factors may even be combined.

The currently available swing door operators can be optimised for one of the above situations, and generally work very well. But if the weather changes or a fire breaks out, the settings no longer fit, and doors frequently function poorly as a result. They no longer open and close reliably, or the barrier-free escape route is no longer available.

To satisfy such complex requirements, we have completely revised the ED 100/250 series. In addition to the usual functions, two new features have been implemented with firmware V2.8: **EVAC** and **SPV**.

The **EVAC (evacuation)** function makes it possible to keep barrier-free escape routes open for a longer period in case of a fire, so a building can be evacuated more quickly. The **SPV (smoke pressure ventilation)** function provides a second parameter level, which can be activated if needed to react precisely to changes in pressure/air flow.

The new functions of the ED 100/250 are unique features not available with any other system in the world. No competitor is currently able to provide comparably flexible swing door operators.

# The EVAC function – Complete control even in case of a fire

In the event of a fire, swing door operators are completely shut off, which means they work like normal door closers. The doors can still be used manually, but the force needed to open them is usually too great to constitute a barrier-free escape route. The safe evacuation of a building can thus require more time than is available in a dangerous situation.

With the **EVAC (evacuation)** function of the ED 100/250, a barrier-free escape route can be provided even in case of a fire thanks to power assist or limited-time fully automatic opening. Unlike the complete shut-down that is currently the norm, the operator can be precisely controlled to keep the barrier-free escape route open for as long as possible. In standard operation, all functions of the operator are available as usual. If there is a fire in the building, a signal sent by the fire detection system activates the operator's EVAC mode.

The motion detectors and safety sensors are disabled to prevent the door from being opened inadvertently or even staying open permanently when the sensors are malfunctioning due to smoke. The operator switches to the safe low-energy mode. In this mode, movement speeds and forces are reduced to a level that is generally safe depending on the size of the door, so that it can be operated without safety sensors. The EVAC function is now fully active, and with the power assist feature it is still possible to open the door easily in case of an alarm.

In addition, a separate push button can be used to initiate temporary automatic opening of the door for up to 20 s. Since the barrier-free escape routes remain available, persons can escape easily and the building can be evacuated more quickly. The door is still fully guaranteed to close safely after being opened thanks to the integrated door closer function. The operator switches back

to standard operation as soon as the signal from the fire detection system is recalled. If the fire spreads, a second signal from the fire detection system or from a locally installed smoke detector can shut down the operator function completely for a longer period of time.

## Technical requirements

The function is available for all operators from firmware V2.8. Older systems can be updated with a firmware upgrade. To use the function, the "Professional" upgrade card must be installed; for dual-leaf systems each operator must be equipped with a "Professional" upgrade card. Further upgrade cards are needed to use the full-energy function. The control signal of the fire detection system should be configured as a potential-free NC contact.

## Advantages

- Easier evacuation of buildings, because barrier-free escape routes can be kept open longer.
- Precise control of individual doors depending on the distance to the fire source.
- Suitable for new systems and for upgrades to existing operators (firmware upgrade may be required).



Thanks to ED 100/250 with EVAC, barrier-free escape routes can be maintained longer than before.

# The SPV function – Strong when it counts

Required escape routes often lead through stairwells. In fire mode, they are usually put under pressure or an extraction system is used to create suction, to keep them free of smoke gas. In such cases, swing door operators that are optimised for normal mode often cannot overcome the resulting pressure differences, meaning they no longer open or close reliably. On the other hand, if they are optimised for fire mode, they are often too fast in normal mode or close too noisily.

With the **SPV (smoke pressure ventilation)** function of the ED 100/250, reliable operation can be achieved in both normal and fire mode. In normal mode, the pressure difference between two building areas separated by a door is significantly lower or even near zero, while in fire mode there may be pressure differences of more than 30 Pa. Instead of merely choosing a compromise for the force and speed settings in order to facilitate operation in both normal and fire mode, the SPV function provides two separate sets of parameters for force and speed: one for normal mode and another for fire mode. This way, the key movement parameters can be much better adapted to the respective conditions. In normal mode, no special measures are required.

The operator functions fully as always. In the event of an alarm, a signal from the fire detection system activates the SPV function of the operator, and it switches to the set of parameters optimised for fire mode. These can be set to operate the door with greater force and speed values in opening or closing or even in both directions.

In addition, a latching action can be activated to improve the closing function in the final degree. With the ED 100, forces of up to 150 N can be achieved. With the ED 250, the SPV function even makes it possible to apply up to 50 N in additional force when the function is activated, thus providing up to 200 N.

Due to the high forces and possible speeds, it is obligatory to install safety sensors to secure the swing path, even if the operator is normally used in low-energy mode. The system is ideal for use in combination with motion detectors or push buttons to send opening signals, since manual opening in fire mode is very difficult. The operator switches back to normal mode as soon as the signal from the fire detection system is recalled.

## Technical requirements

The function is available for all operators from firmware V2.8. Older systems can be updated with a firmware upgrade. To use the function, the "Professional" upgrade card must be installed; for dual-leaf systems each operator must be equipped with a "Professional" upgrade card. Since high levels of force and high speeds are usually required, the use of the full-energy function is necessary in addition. Further upgrade cards are needed to use the full-energy function. The control signal of the fire detection system should be configured as a potential-free NC contact. The settings for the SPV parameter set must be entered using the hand terminal. The normal parameter set can be changed at the internal operator terminal. Detailed information on the SPV parameters is available in the corresponding installation instructions.

## Advantages

- Smooth in normal mode and strong in fire mode.
- Increased personal safety in fire mode.
- Protects the door mechanism, as high forces are only applied when necessary.
- Suitable for new systems and for upgrades to existing operators (firmware upgrade may be required).



The ED 100/250 with SPV is strong when it counts.

# There is no bad weather – staying flexible year-round with the ED 100/250

In winter, cold air rises; in summer, cooler conditioned air pushes downward. The larger a building, the greater the impact of stack effects in stairwells and elevator shafts. Air flows through open doors, heating and cooling energy is lost. The air stream pulls at doors and swing door operators no longer open or close reliably.

Thanks to the **SPV (smoke pressure ventilation)** function of the ED 100/250, reliable operation is now possible. Many situations in which doors must close against an air pocket can be mastered with the well-known wind load control of the ED 100/250. However, the wind load control is not suitable for dynamic processes throughout the year, when the direction of the air flow changes.

In winter, the air rushes into the building; in summer, it pushes out. Conventional swing door operators use a compromise in their force and speed settings to achieve fairly adequate functioning throughout the year. This is where the SPV function can significantly improve the operation. The function provides two separate sets of parameters for force and speed: one for summer operation and another for winter.

This way, the key movement parameters can be much better adapted to the respective conditions at different times of the year. The operator functions fully as always. It is switched from summer to winter operation manually by means of a switch or automatically with a temperature sensor or a signal from the building technology systems.



ED 100/250 with SPV flexibly adapt to the seasons.

## Technical requirements

The function is available for all operators from firmware V2.8. Older systems can be updated with a firmware upgrade. To use the function, the "Professional" upgrade card must be installed; for dual-leaf systems each operator must be equipped with a "Professional" upgrade card. Since high levels of force and high speeds are usually required, the use of the full-energy function is necessary in addition. Further upgrade cards are needed to use the full-energy function. The control signal to switch between summer and winter operation must be configured as a potential-free contact. The settings for the SPV parameter set (winter) must be entered using the hand terminal. The normal parameter set (summer) can be changed at the internal operator terminal. Detailed information on the available SPV parameters is available in the corresponding installation instructions.

## Advantages

- Functionality optimised for the season.
- Less heating and cooling energy lost due to poorly closing doors.
- Protects the door mechanism, as high forces are only applied when necessary.
- Suitable for new systems and for upgrades to existing operators (firmware upgrade may be required).