

Speed, safety and comfort – for new and modernized lifts



We take your lifts



to a higher level

- High speed
- Safe operation
- Travelling comfort

Speed, safety and comfort are essential in all lift systems. Emotron offers efficient and reliable solutions, designed especially for this purpose. You will benefit from optimized operation, irrespective of lift size, motor type and drive technology.

Complete range optimized for lift control

Emotron variable speed drives are designed for lift control in new and modernized systems. They operate with both gearless and geared winches, using synchronous or asynchronous motor technology. You can install them in a machine room or directly within the lift shaft. Our complete range includes three-phase AC drives of up to 132 kW and digital DC drives of up to 90 kW. We also offer softstarters for hydraulic lifts.

We are familiar with all aspects of your lift operation

After 30 years of developing drives and more than 15 years of designing lift solutions, we have acquired extensive knowledge in areas such as power electronics, motor design, electrical and mechanical engineering. We take all these aspects into account in order to create optimal functionality for your lifts. We work closely together with motor manufacturers and can thus offer efficient solutions for all leading motor makes.

Plug-and-play solutions save time

Our unique plug-and-play solutions minimize installation time. You can order the drives ready to use, with parameter settings for your specific motor and the characteristics of your lift system, such as wheel diameter and speed. Maximum flexibility is offered through various connection options as well as fieldbus communication. Emotron takes your lift control to a higher level!



Security for passen



gers and installers

- Safety stop
- Emergency evacuation
- All regulations fulfilled

Emotron lift solutions meet the highest demands for safety. Maximum security is ensured for lift passengers as well as for persons involved in installation, commissioning and maintenance.

Safety to meet the highest demands

The Emotron lift solutions offer maximum security for passengers as well as for persons involved in installation, commissioning and maintenance. Of course, they fulfil all applicable regulations, for example the EMC directive, the low voltage directive, the machine directive and the European standards for safety in electrical installations and electric equipment in machinery.

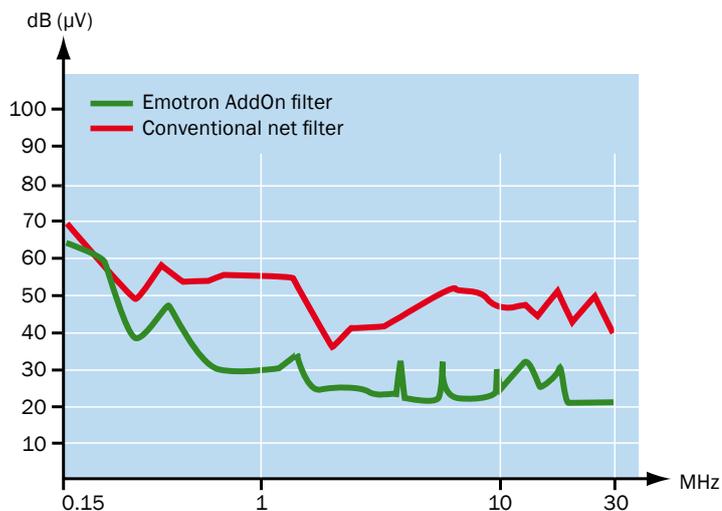
Safety stop and emergency evacuation

Our variable speed drives offer a safety stop function, which immediately activates the mechanical brakes in case of overload. Emergency evacuation is available as an option. If a lift has stopped between floors due to power failure, it is automatically and safely moved upwards or downwards to the nearest landing in order to allow passengers to exit. No manual intervention is required. Power is supplied using batteries or an uninterruptible power supply system.

Efficient protection for drive and motor

The Emotron AddOn filter offers more efficient EMC protection than conventional net filters. The drives and surrounding equipment, such as motors and lift PLC's, are protected against net interference. By using the Emotron DriveProtector filter, you also protect the motor against fast voltage rising which could cause damage.

Efficient protection from net interference



The Emotron AddOn filter offers more efficient EMC protection than conventional net filters. Net interference is reduced to a very low level, protecting the drive and the surrounding equipment.

Smooth, silent

MIRA



and comfortable

- Soft starts and stops
- No jerky movements
- Silent operation

Maximum travelling comfort is ensured thanks to very smooth and silent operation. Soft starts and stops, high levelling precision and low noise levels all interact in order to ensure that passengers experience the lift ride as safe and comfortable.

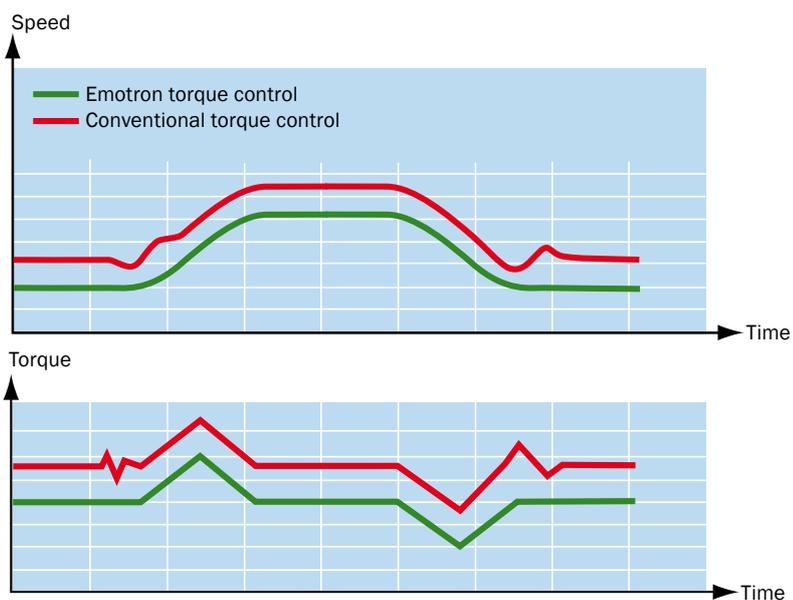
Soft starts and stops with high precision

Emotron variable speed drives offer soft starts and smooth stops with precise levelling at landings, without any jerky movements. This is the result of highly accurate speed and torque control and perfect matching with the mechanical brakes. Virtual load measurement ensures smooth acceleration and deceleration. The software uses fuzzy logic control for smooth and precise starts and stops, independent of load, direction and winch temperature.

Low noise and vibration levels

Today, the topic of noise and vibration is just as important as engineering in order to ensure that a lift system complies with customer demands as well as CE standards. This requires carefully matched mechanical components and precise electronic regulation. Emotron variable speed drives offer very quiet operation thanks to a unique harmonic pulse width modulation based on modern trench-IGBT technology. Exact control of torque, position and speed is offered through a high-resolution read-out using an encoder with 1Vpp technology.

High comfort without jerks or vibration



Emotron variable speed drives offer accurate torque control across the entire speed range. A comfortable ride is ensured thanks to smooth starts and stops without jerks and with minimized vibration.

Power under



full control

- Accurate control of speed and position
- High efficiency with up to 6 m/s
- Compact all-in-one solutions

Emotron variable speed drives ensure efficient lift operation by means of highly accurate control of speed and position. Smooth operation at up to six meters per second means the drives meet the highest demands for performance and comfort.

Accurate control of speed and position

Emotron variable speed drives guarantee efficient lift operation through very accurate control of speed and position. They offer up to six meters per second of speed and up to 132 kW of lift capacity. Precise torque control across the entire speed range makes the drives highly suitable for gearless systems where regulation at low speed is often critical.

Speed and comfort at high standards

Fast operation in combination with excellent travelling comfort make Emotron solutions the optimal choice for high standard lifts in tall buildings. Soft starts, quick and smooth S-curve acceleration, perfect matching with the mechanical brakes and precise levelling at landings all contribute to comfortable and safe operation without jerky movements.

Compact solutions save space

Our drives are available in several designs. A flat version is offered for machine-roomless lifts. A compact all-in-one solution integrates the contactors, chokes and filters in a screened housing. This saves space, improves EMC protection and minimizes external wiring. Options include fieldbus communication, encoder and filters for EMC, motor and mains protection.



Space-saving and



flexible installation

- Space-saving installation
- Flexibility for customized solutions
- High performance
- Reduced construction costs

Machine-roomless lift systems are winning ground thanks to the benefits they offer. Space and construction costs are reduced without compromising on performance, reliability and comfort. This is also an efficient solution when providing existing buildings with lifts to increase accessibility.

Perfect solution when space is scarce

In all buildings you need to use space as efficiently as possible. In this example, the challenge was to incorporate a lift system in an existing building to fulfil new demands for high accessibility. The need was for a space-efficient solution, still offering high performance and excellent comfort. The chosen solution was a machine-roomless system with a synchronous permanent magnet motor controlled by an Emotron DSV frequency inverter.

Flat drives mounted in shaft

The synchronous technology and the Emotron frequency inverter offered precise control of speed and position, without the need for gearing. Locating the drive system within the lift shaft eliminated the need for a separate machine room, which would have added half the size of the lift area. The flat version of the Emotron DSV was mounted on the wall, requiring only 160 mm of depth thanks to integrated guards and plug connectors located sideways. Construction and installation costs were minimized as was the space required.

Low energy and maintenance costs

The solution also offered high reliability and low operating costs. Using compact gearless machinery with speed control minimized energy consumption and mechanical wear. Optimized functionality was offered thanks to the integrated PLC functionality of the Emotron DSV and a software package for machine-roomless solutions.

Minimized noise and vibration

Minimizing noise and vibration is critical when the drive unit is located in close proximity to the lift car. The gearless machinery in itself possesses good noise performance. In this case, the Emotron frequency inverter also offered silent operation thanks to unique PWM optimized for modern trench-IGBT technology. The Emotron AddOn filter reduced EMC noise to very low levels, protecting the drive and the motor against distortion. Installing the Emotron DriveProtector filter protected the motor against damage due to fast voltage rising.



Old charm and m



Modern technology

- Improved performance
- Energy and maintenance savings
- Plug-and-play installation
- Original features maintained

Old lift systems have great charm, but they become outdated with the introduction of new technology and safety regulations. Modernizing is a cost-efficient way of improving performance and reliability, while maintaining the original features. Emotron offers solutions for all drive technologies and unique plug-and-play solutions to minimize installation time.

New demands and new possibilities

Several circumstances lead to the decision to modernize this lift system. The owner of the building wanted to meet rising demands for speed and comfort. Stricter safety regulations had to be met and maintenance was increasing as original parts wore out and became harder to replace. Modernization would be cheaper than replacing the whole system and it would allow them to keep the original appearance. Disruptive building works would also be kept to a minimum since no structural changes were required.

Modern drive technology introduced

When deciding on what drive technology to use, several factors were taken into consideration: the demand for lift capacity and speed, the state and capacity of the building's power system, the space available for the drives, the type of motor, brakes, lines and other components. The Emotron DSV frequency inverters support all technologies and could be applied in any condition. The drive software uses fuzzy logic control for smooth and precise starts and stops, irrespective of load, direction and winch temperature.

Quick installation and energy savings

The modern technology increased both speed and capacity of the lift system. More efficient motor control also reduced energy consumption. Exchanging old geared motors for modern gearless technology with speed control is generally expected to yield energy savings of between 25% and 60%. The smooth starts and stops improved passenger comfort, but also reduced mechanical wear on winding machines, brakes and lines. The Emotron plug-and-play solution shortened installation time considerably. The drives were delivered with the complete parameter settings for the motor and only fine-tuning had to be carried out. Fieldbus communication was introduced to allow for remote monitoring.



Digital technology im



proved performance

- Using existing DC motor
- Improved performance
- Energy and maintenance savings
- Plug-and-play installation

When modernizing this lift a motor generator system was replaced with an Emotron GSV digital DC drive. The result was a reduction of energy and maintenance costs as well as an improvement of performance and reliability. The existing DC motor could be used and the Emotron plug-and-play solution made installation quick and easy.

Modern digital technology introduced

More and more motor generator control systems are replaced with digital drive technology as part of modernization programs or to reduce operating costs. Digital DC drives also offer considerable energy savings and more accurate speed and torque control compared to motor generator systems as well as analogue DC drives. Performance is improved, downtime is minimized and maintenance costs are reduced.

Energy and maintenance savings

This lift was generating high costs. Power was drained even when it was not running and maintenance was frequent and costly. The system was under-dimensioned causing heavy wear. Carbon dust in the machine room damaged electrical equipment. An Emotron GSV digital drive of 90 kW was installed to control an existing DC motor fitted with brushes and equipped with a shaft encoder. This solution eliminated the need for rotating components, which led to great maintenance savings. Conversion efficiency was greatly improved and idle losses reduced, resulting in lower power consumption. Space was also freed in the machine room thanks to the smaller size of the new drive.

Quick installation and improved performance

The Emotron GSV drive also offered higher accuracy in regard to the control of speed and position. The improvements in efficiency and the smoother operation not only lead to a reduction of energy and maintenance costs. It also allowed passengers to benefit from higher speed and travelling comfort. The unique Emotron plug-and-play solutions offered quick and simple installation thanks to the fact that the drives were delivered with the required parameter settings for the motor used.



Dedicated drive

Emotron develops products for starting, protecting, controlling and stopping machines and processes driven by electric motors. Our drive is to create measurable benefits for our customers through reliable, cost-efficient and user-friendly solutions. By focusing on selected applications, such as pumps, cranes and lifts, we can offer functionality optimized for specific needs.

Since 1975 we have established a solid position as an innovative and pioneering company. Research and development takes place at our head office in Sweden and at our subsidiaries in Germany and the Netherlands. Germany is also the location for the Emotron technical centres for lift and crane solutions. We have sales offices in Sweden, Germany, the Netherlands, China and Latin America, as well as a worldwide network of authorized service partners.



Products for your specific needs



Our complete product portfolio offers optimum solutions for your specific needs. The products are all based on the same technology platform and can easily be integrated in complete solutions. Wide power range, high protection class and compliance with global standards mean they fulfil the highest demands.

- *Shaft power monitors* – protect your process from damage and unplanned downtime.
- *Softstarters* – ensure smooth starts and safe stops.
- *Variable speed drives* – minimize energy consumption and wear.



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