

KONE RESOLVE™ WITH UNITY DRIVE

# Modernization of Elevator Control Systems

KONE ReSolve with Unity is a modular modernization solution for elevator electrification, designed specifically for buildings with existing DC gearless elevators. It is based on state-of-the-art drive technology, delivering significant improvements in energy performance. Energy consumption is reduced with low harmonic distortion and a near-unity power factor capability. Full line regeneration of energy provides a high-performance elevator solution with a significantly lower level of energy consumption. The modular structure of KONE ReSolve is designed to correctly interface with many types of existing elevator components, thus ensuring swift, trouble-free installation.

## Electricity consumption reduced by 45%

The Emily Morgan Hotel building is a local landmark in San Antonio, Texas, built in 1924. When the hotel modernized its elevators in 2007 using KONE ReSolve with Unity Drive, they not only enhanced service with improved passenger handling capacity and modern controls. They also reduced electricity consumption by 45.7% in kWh.



## Key benefits

- Modular modernization solution for existing DC gearless elevators
- Complete elevator electrification system
- Easy integration with existing systems

## Eco-efficient

- Low energy consumption
- Very high power factor, near 1.0
- Clean energy usage due to low harmonic distortion
- Full recovery of regenerated energy

## Safe and convenient

- Minimized building disturbance with fast installation
- Safety assured, compliance with latest local, state and elevator codes
- Accurate stopping at floor level ensured by closed-loop drive control

## Reliable

- Comfortable and efficient travel for passengers
- Optimum reliability achieved with the latest control technology

*Emily Morgan Hotel,  
San Antonio, Texas, USA*

### Energy efficiency

KONE ReSolve with Unity Drive reduces energy consumption by 40% compared with Motor Generator (MG) sets and by 25% compared with DC-SCR (SCD-type) drives.

Full line regeneration provides a high-performance elevator solution with significantly lower energy consumption. The line regeneration feature enables the elevators to regenerate almost as much power when they descend as they consume when they ascend. This regenerative feature saves considerable energy (up to 50%), substantially cutting the building owner's operating costs and reducing the environmental footprint.

### KONE ReSolve with Unity Drive

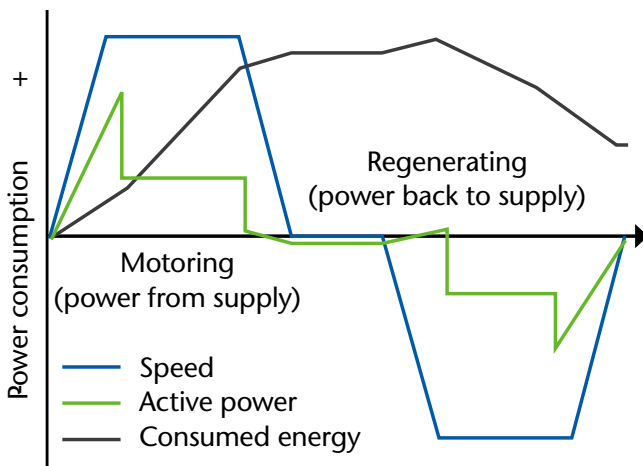
KONE ReSolve with Unity Drive is designed especially for use in demanding applications such as office buildings, hotels, medical facilities and residential buildings.

### High power factor

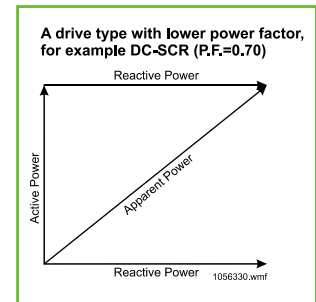
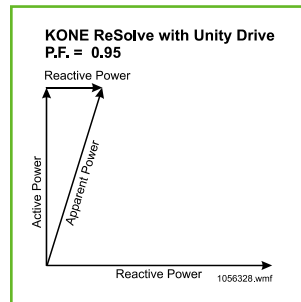
The high power factor (P.F. >0.95) minimizes the consumed power supply kVA compared to lifting power. A high power factor minimizes the stress on the building's electrical supply system. This makes it possible to use smaller fuses and eliminates the need to upgrade the building supply cables to the elevators as part of the modernization.

### Low harmonics distortion

Low harmonics distortion is built into the drive, eliminating the need for additional filtering solutions. The low harmonics distortion (THDI < 8%) eliminates interference with other electrical equipment, and reduces the stress on the building's electrical system. The harmonics level meets the requirement of IEEE 519 at the drive terminals.



KONE ReSolve with Unity Drive	
Total harmonics distortion %	<5 (125 A) <8 (200 A, 250 A)
Power factor	>0.95
Speed	up to 1400 fpm
Max travel	820 ft
Max floors	63
Max elevators in group	8
Leveling accuracy	+/- 1/8 inch
Typical lifetime of electrical components	25 years



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