CONTROL TECHNIQUES

ADVANCED ELEVATOR SYSTEM

PEEL HOUSE | ELEVATORS

DRIVE OBSESSED

MASSIVE IMPROVEMENTS DUE TO INNOVATIVE SYSTEM

A set of lifts in the 14-storey Peel House building in Manchester have been refurbished using a pioneering technology based on Control Techniques drives that provides direct-to-floor control.

The Challenge

The lifts at Peel House were in urgent need of refurbishment. Previously, the lifts had a creep-to-floor control profile, where a series of shaft encoders returned position signals to the controller, indicating when to slow to creep speed.

It had been assumed that gearless lift systems (which don't have the benefit of geared ratios to improve a drive's effective response) needed a load weighing device to provide the lift controller or variable speed drive with an analogue signal as a torque feed forward signal.

The Benefit

Brought in by Manchester company ANSA Elevators, controller manufacturers Lifteknic supplied a direct-to-floor system based on Control Techniques' drives.

The system is based on a Unidrive SP AC drive with a 22kW synchronous permanent magnet gearless AC motor working in conjunction with the Lifteknic Quatrain control system.

The direct-to-floor profile uses a drive in speed mode, which is changed to position mode, initiated by correction sensors located 430 mm above and below each floor. Any positional error is corrected constantly, giving high accuracy, reduced floor-to-floor times and a high quality, smooth ride. The drive is fitted with an applications module programmed with the unique direct-to-floor programme and accepts Sin/Cos feedback from a motor-mounted encoder that gives a resolution of more than 4 million ppr – a key factor in eliminating the load weighing device.

The Solution

The innovative system is a massive improvement & gives independent lift suppliers a technical and performance advantage over the more traditional lifts suppliers.

The system lowers costs as the load weighing device and fewer in-shaft sensors are required, and meets rigorous safety requirements.

Every Unidrive SP has a 48 Volt DC backup power supply connection that allows full load operation of the motor at a slow speed, in case of a power outage and a "secure disable" function, which meets the requirements of EN954-1 category 3 for the prevention of motor operation. This can be used as the ultimate control function in a safety interlock system and replaces up to two safety contactors, saving money on equipment and installation costs.

Reduced costs

Quicker & easier to install

Direct-to-floor system