



Product

VCSD-FL Braking System with SOBO® iQ

Application

Commercial Building Freight Elevator

Highlights

Twiflex VCSD-FL Caliper Brakes

Spring applied, hydraulically released floating modular brakes

Svendborg Brakes SOBO iQ Controller and HPU

Unique soft braking control and custom hydraulic power unit

Imperial Electric, a custom manufacturer of AC and DC motor systems, needed a heavy-duty braking system for use on an 3,600 kg capacity freight elevator in one of the tallest buildings in Milwaukee, Wisconsin. The brakes are mounted to a pair of pedestals on a gearless AC machine that is driven by a 104 HP electric motor and reaches speeds of 609 m/min. The machine features a modular design which allows it to be installed and assembled in very limited elevator shaft spaces.

Imperial had been using a series of four smaller electromagnetic brakes for the lower capacity range of their machines. However, using 4 larger caliper brakes on the higher capacity range of machines created problematic design issues due to increased torque stresses on the brake pedestals. A more powerful hydraulic solution, utilizing two brakes vs. four, was required. One caliper functions as the primary brake and the other caliper serves as the emergency brake.

After searching the web for a brake supplier that could meet the application challenge, the lead project engineer at Imperial contacted Twiflex based on a previous successful elevator brake application found at twiflex.com. To fit within the tight machine footprint, Twiflex engineers supplied dual VCSD-FL spring applied, hydraulically released brakes with a braking force of 60 kN. The compact FL (floating) caliper brakes, comprised of a single spring module fitted to a floating half, provide up to 10 mm of axial movement. The brakes included an analog sensor mounted to each spring module to monitor brake (on/off) status and wear condition.

Svendborg Brakes, another Altra Industrial company, supplied a SOBO iQ soft braking controller that combines cutting-edge technologies to provide significant flexibility, safety and durability. The controller features three-state digital modulation and a revolutionary dual-loop PI control (pressure/speed). A custom hydraulic power unit was also included in the brake package.

Contact Twiflex

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