



ELEVATOR SYSTEM HAVING A FORCE-ESTIMATION OR
POSITION-SCHEDULED CURRENT COMMAND CONTROLLER

ABSTRACT OF THE INVENTION

The invention provides an elevator system for controlling movement of an elevator car with respect to guide rails in an elevator hoistway, having a force-estimation or position-scheduled current command controller and a magnet driver circuit without the need for a flux sensor. The force-estimation or position-scheduled current command controller responds to a force command signal, and further responds to a sensed gap signal, for providing a force-estimation or position-scheduled current command controller signal as a current command to the magnet driver circuit. The magnet driver circuit responds to the force-estimation or position-scheduled current command controller signal, for providing a magnet driver circuit signal to control said horizontal movement of the elevator car with respect to the guide rail in the elevator hoistway, whereby the horizontal movement of the elevator car is controlled without sensing magnetic flux. Other applications include any system that uses an electromagnet to produce an attractive or repulsive force across a large air gap, such as magnetic levitation trains or shuttles, and magnetic bearings.