



We take elevator safety for granted. Brake controllers from Orchid Technologies make that possible while conserving energy too.



*“Our old brake control technology used large power resistors and contactors. Orchid’s new controller has really saved us both physical space and operating costs.”*

*- President, CTO  
Advanced Development*

## Three Phase Off Line Brake Controller

We take elevator safety for granted. We enter the car without a second thought. Such carefree attitudes are possible because elevator brake technology is extremely reliable and safe. When the moving car stops, the brake is automatically applied. Prior to starting the car again, the elevator car’s brake is ‘picked’, that is, the brake is energized, thereby allowing the car to move freely. Orchid was chosen to design a low-energy efficient PWM controlled three-phase off line brake controller. Old style brake controllers consume large amounts of energy when holding the brake free. Elevator energy consumption can be reduced by using PWM controlled brake energizing devices. On a per-car basis, the energy savings is significant while saving physical space within the equipment rack.

## Three Phase Off Line Design

220 VAC triple phase power is used as the energy source to ‘pick’ the brake. Orchid’s brake controller floats on the triple phase power system. Floating the control circuitry simplifies the overall controller design, but makes for some interesting development-time challenges. High energy PWM control of the brake allows a great deal of energy and size savings when compared to older relay-resistive brake controller designs.

## ARM Cortex-M3 Microcontroller

Firmware running on an NXP1751 ARM Cortex-M3 microcontroller provides adjustable energy (PWM) and timing parameters. Adjustment of timing and energy allow the brake controller to operate with a wide variety of braking devices.

## Orchid Technologies: Energy Saving Design

The development of custom electronic products for our OEM clients is Orchid’s entire business. The design of custom electronic products with rapid design cycles, demanding technical requirements, and unforgiving schedules sets us apart. Call Orchid Technologies today!

