

Quattro DC

Power control for the DC elevator lift motor shall be a PWM-DC drive with active front end convertor, Magnetek Quattro or equal with the following features:

- Four quadrant, fully regenerative, bi-directional power flow.
- Current harmonics at the utility power line to be less than 8% THDi without external filters.
- Operating power factor to be greater than 98% without addition of external components
- Closed loop armature current regulation with smooth step less control of torque at all speeds. Protective current limiting with up to 250% current available during acceleration. Auto-Tune sensing of motor electrical characteristics.
- Closed loop motor field current regulation with automatic field weakening to limit maximum motor voltage at running speed. Adjustable field current settings for Accelerating, Running and Standby conditions. An adjustable timer to hold motor field current fully energized at each elevator stop if desired.
- Infinitely variable closed loop speed regulator with provisions for self-generated, internal S-Curve profiling or the use of external analog or digital velocity reference inputs. Speed regulation shall be better than +/-0.5% with provision for pre-torquing at each start and/or Anti-Roll-Back position regulation. An adjustable notch filter shall be available to help reject interference from rope resonance.
- A contactor shall be provided to safely interrupt the DC motor circuit as required by code. A second positive power disconnect means shall also be provided to meet redundant code requirements.
- Velocity feedback shall be from a dual channel, incremental encoder with differential signaling electrically isolated from motor frame and shaft. Direct coupling to the elevator motor shaft is preferred. Minimum resolution should be such that the encoder produces greater than 20,000 Hz at contract elevator speed. 5V and 12V isolated power must be available to operate said encoder.
- Provision for optional hand held programmer with parameter text display, or serial communications to car controller, or use of personal computer for adjustment and storage of configuration and parameter set point data.
- CSA listed basic motor control hardware. Agency recognized and approved motor overload software function. Fusing to be included for primary power input and the motor field control circuit.
- All components to be contained in a NEMA 1 type enclosure.