

SCR-DC

Power control for the DC elevator lift motor shall be a 6-pulse SCR-DC drive, Magnetek DSD-412 or equal with the following features:

- Four quadrant, fully regenerative, bi-directional power flow.
- Closed loop armature current regulation with smooth stepless 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 less than 0.5% with provision for pre-torqueing at each start and/or Anti-Roll-Back position regulation. An adjustable notch filter shall be available to help reject interference from rope resonance.
- Easy to use, all digital parameter set up and monitoring with on-board local display and programmer. 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. Fast acting main power fuses for protection of SCR devices and motor armature. Agency recognized and approved motor overload software function. Provision for separate fusing of motor field control circuit.

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 rope sheave is preferred. Minimum resolution should be such that the encoder produces greater than 20,000 Hz at contract elevator speed.

A power isolation transformer shall be provided with 3-5% impedance. The transformer may be delta-delta or delta-wye, suitably sized for the application.

An armature current ripple filter shall be provided to minimize acoustic hum from the motor.