

Motor Control Applications Summary for Carotron, Inc.

by John N. McMurray, Sales Engineer

1 – Solid State Starters – Reducing high peak motor starting torque

Replacing your conventional, across-the-line or reduced voltage, WYE-DELTA AC motor contactor with a [SAF Solid State Starter](#) can lower the initial peak starting current, bring down power company demand meter charges, and sharply reduce impact loading on belts and gearboxes. Optional Integrated Bypass Contactors further increase system efficiency during periods of continuous motor runtime.

2 – Solid State Starters w/ DC Injection Braking – Fast speed reduction of rotating equipment

A DC Injection Brake unit added to your SAF Solid State Starter quickly slows the AC motor driving a saw blade or other high-inertia load and minimizes the opportunity for injury. Codes in some areas require each machine over a certain horsepower to be equipped with such a device.


3 – Retrofit of Aging DC Drives

With the volatility of the DC drives market making the supply of controls and the availability of technical service uncertain, Carotron provides the products and assistance you need to respond quickly when your customer is down. Our [Elite Pro regen and non-regen Digital DC Drives](#) offer state-of-the-art technology and incorporate, as standard, the features most often needed to allow legacy drive replacement, usually without the need for additional interface cards and accessories.

4 – AC Inverters – Tough Drives

Some AC drive applications are just plain tougher than others. Applications that include Impact Loads or Eccentric, Unstable Loads are some of the toughest. Impact Loads (like Rock Crushers, Metal Forming Presses, Saw Mills, and Injection Molding Machines) can cause the AC motor to become a part-time generator, unless the drive is specifically designed to prevent this condition from occurring. Regenerative energy must be removed from the system or the drive will trip on “Overvoltage.”

Most competitive [AC drives](#) are not designed to prevent this condition from occurring. The manufacturers of these products typically tell their customers they need to add Dynamic Braking Resistors whenever an AC drive is used on this type of load. Our Phoenix DX and EX Series of AC inverters from US Drives, with their unique DC Bus Follower circuit, is the perfect solution for these tough applications. No drive over-sizing is ever required, and US Drives guarantees trip-free operation, 100% of the time, at maximum load, and over the entire operating speed range. (Adapted from US Drives “Tough Drives” Flyer #TDRV001, 11-01-05)



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