

Redundant Drives

Maximize Uptime in Critical Applications

In many mission-critical applications, system downtime due to a drive fault or failure is simply not an option, particularly those in which life, safety or system integrity may be put at risk. While adding a bypass is a temporary, quick-fix option, a far more energy efficient solution is a redundant variable frequency drive (VFD) package that provides immediate load transfer while maintaining the versatility and energy-saving performance VFDs have to offer.

Years ago, motor drives were far less reliable than they are today and a bypass was a sensible addition to a drive system to maintain operation while a drive was repaired or replaced. Today's robust VFDs rarely fail and installing a bypass can cost as much or more as adding a second drive. Furthermore, the limited constant-speed/full-speed operation in bypass mode not only eliminates the advantages of a VFD, it can actually damage system integrity. For example, many variable air volume systems cannot withstand the full volume and pressure of full-speed bypass operation..

The redundant drive packaged solution

The photo (right) shows two identical drives in one cabinet (the second drive is strictly a back-up for the first). The motor is connected to Drive #1 (left). The transfer of the motor load is done via the contactors shown directly below Drive #1 and can be performed manually through an operator control or automatically in the event a fault or failure is detected in the operating drive.



Applications

- Hospital operating suites
- Unmanned data centers
- Research laboratories
- Other temperature/pressure-sensitive environmental or mechanical systems

Redundant Drive Solutions

Control Techniques offers a full line of VFDs ranging from fractional to 2,900 HP and 120 V to 690 V. These versatile drives provide scalable communications protocols, PLC intelligence and additional I/O using snap-in SM Option Module technology.

These world-class drives deliver exceptional control and the ability to interface with virtually any fieldbus network creating high-speed drive-to-drive networks optimized for peak performance and low cost.

Energy-Savings Tools

Control Techniques' complimentary energy optimization software helps you analyze energy usage for different applications and calculate cost savings using VFDs.

Key features:

- Estimation of energy consumption using VFDs for fan and pump applications

- Comparison of energy consumption between VFDs and conventional control methods
- Display of energy cost, savings and payback data
- Graphical representation of flow vs. cost and time
- Customized client report facility including view, print, e-mail and file export functions
- Built in engineering calculator for horsepower, torque, AC motors, Ohm's Law and AC power circuit calculations

Schematic diagram of a redundant drive solution

