“An ounce of prevention is worth a pound of cure” or more aptly in this case, an ounce of preventative maintenance is worth avoiding a possible meltdown.

The buss bar in the photos below is part of the remains of a damaged 100-horsepower variable frequency drive (VFD) that was in service at a nearby wood manufacturing facility. This drive failed because of a clogged on-board cooling fan and associated filter media that caused moisture-laden sawdust to create an internal arc across the buss bars. The damage as seen in the photos is the result. Delta Automation was able to fully repair this drive. However, the repair came at a cost of $6,000.00 and some extended downtime. Thankfully, no one was injured when the arc flashing occurred.

With a little proactive preventative medicine, this failure and potentially hazardous condition could have been easily avoided. Delta Automation offers a comprehensive preventive maintenance service that includes a multi-point inspection which checks critical drive components and systems including wiring, cooling airflow, and looks for signs of overheating. Chief among the items we check are cooling fans, filter media, and dust removal because a common cause of drive failure is overheating, that can result from these problem areas.

The typical cost of such a VFD PM inspection ranges from 100 to 300 dollars—a fraction of the cost of just one major repair! In retrospect this is a very small price to pay to avoid a catastrophic failure and compromised safe operating conditions.

Avoid these kinds of problems with your VFDs by having Delta perform a low cost comprehensive preventive maintenance. We can spot potential problems before they occur, provide detailed drive information for your records and budgeting purposes, and keep your drives operating reliably, safely and at peak energy efficiency.
The five-second interval was initially programmed before there was a mechanical brake in place. It was required to be that long because there was no dynamic braking electronics within the VFD to “dump” the regenerative voltage. If the deceleration time was set to below five seconds, the VFD definitely would have faulted on a high DC bus voltage due to the regeneration voltage feedback from the motor acting as a generator. With the mechanical braking installed and performing the entire braking job, the VFD actually could just coast the system to a stop. Once the deceleration time was re-programmed to a “coast to stop” option, the machine stopped well within the required time frame.

LESSONS LEARNED

- Purchasing equipment from Delta, saved money
- The client had our support and knowledge available locally to assist him with the fine-tuning of the VFD for his new application.
- Had the client purchased the VFD from a catalog “big box” store, at a minimum, he would most likely have had to purchase a bank of braking resistors, which may or may not have been as effective as the mechanical braking.
- An additional safety benefit: the mechanical brake system is independent of any controls or electrical prerequisites to function in a power failure or emergency situation.
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and enter your call-back number when prompted.
Someone will respond within fifteen minutes!

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DELTA is published quarterly by Delta Automation, Inc. at 2704 Charles City Road Richmond, VA. 23231
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