

Case Study: Arc-Damaged Drive Repair



Quad Plus®



Aluminum manufacturer has eight ABB ACS580 drives with arc damage from short circuits.

Objective

- Evaluate and Repair 8 ABB ACS580 Drives.

Solutions

- Reformed all capacitors.
- Performed internal and external cleaning.
- Checked the fault history of each drive through the control unit and manual inspection.
- Determined the cause of excess dust and steel particles in the drives that were contributing to recurring short-circuiting and arc damage to the drives.
- A packaged drive system with a filtered and ventilated cabinet was recommended to house the ABB ACS580 drives and protect them from environmental issues.

Results/Benefits

- The customer experienced immediate and future relief after seeing the improved drives and drive system.
- The recurring drive issues the customer was experiencing before contacting Quad Plus have been solved.
- We provided education on proper housing methods for ABB ACS580 drives and the timeline for cleaning and repairs, along with advice and future opportunities for preventative maintenance.
- The customer will enjoy less unexpected downtime, a higher drive life expectancy, and better housing for their drives.

Background

The Quad Plus Drive Team was sent eight ABB ACS580 drives from an aluminum manufacturing company in Texarkana, TX, to evaluate and repair. Each was out of commission due to arc damage caused by short-circuiting. The customer was not sure what was causing repeated damage to these drives and needed to get to the bottom of the issue and have their drives repaired.

Quad Plus Solution

First, our technicians evaluated the drives, including a visual inspection, reforming the capacitors (as the drives were unused in storage), and internal and external cleaning.

Once the drives were fully reformed, cleaned, and powered on, the technicians read the fault history through the control unit (CU). If no CU was available, technicians performed a manual inspection. The times that the drive does not come with a CU, we install one to further test and troubleshoot the drive. During the internal cleaning phase, our technicians noticed fine steel particles in the dust that had accumulated inside the drive.

We then contacted the company to inquire about the storage conditions of the ABB ACS580 drives on site. The state of the drives during our evaluation caused our technicians to question the environment in which they were being housed and whether the NEMA rating was suitable. We offered the idea of a packaged drive system,