

Engine block manufacturer drives production with Current Technology® surge suppression systems

Engineers and plant administrators at Nemark in Monterrey, Mexico, take power quality issues seriously. Nothing can stand in the way of customer deliveries. Customers such as Ford Motor Co., DaimlerChrysler and General Motors Corp. depend on shipments in less than 48 hours.

Nemark is the largest aluminum cylinder head foundry in the Western Hemisphere. It was created as a joint venture between Ford and Mexico-based Alfa. In addition to cylinder heads, it makes block castings used in automotive engines.

When orders doubled production volume, Nemark built two more plants. Each is about the size of nine soccer fields and can produce 2.4 million cylinder heads a year.

Nemark's manufacturing process relies heavily on sensitive electronic machines to melt aluminum scrap and pour liquid metal into semi-permanent steel molds. But electrical surges threatened this process in the new plants.

Margarito Alanis Lopez, engineering maintenance chief for Nemark's Plants 3 and 4, said that every two weeks a molding machine would break down and

force production to other machines. Each time he found a damaged circuit board inside the machine.

Alanis Lopez sent the boards to the manufacturer, who concluded the damage probably stemmed from a power quality problem.

So for help he turned to Diram, a factory-trained solution provider recruited by ARCO, the Current Technology® representative in Mexico.

"We performed our power quality analysis and in two days we recorded 49 surges, the highest of which measured 561 volts," said Luis Ramon of Diram. "We also found that Nemark was experiencing a lot of interference caused by high-frequency noise."

Nemark's surge and noise problems are common with manufacturing processes that require an AC to DC power conversion, Ramon said.

To operate, Nemark's molding machines require the conversion, which created the internally generated surges that damaged the circuit boards.

Every surge-related shutdown cost Nemark two hours of production and \$3,000 for each new circuit board.

Ramon recommended Current Technology's MasterPLAN™ approach, which put surge suppression at the service entrance and on each molding machine.

Nemark installed two Current Technology Select® SEL200 selenium-enhanced suppression filter systems, which protect large ampacity service entrances.

The selenium handles voltage swells that destroy other surge protectors equipped with only metal oxide varistors.

To safeguard the machines against the internally generated surges, the plant also installed more than 50 Current Technology TransGuard® TG60 and TG80 units. Filter capacitors inside the suppressor's Failure-Free Integrated Surge Suppression Bus® also solved the high-frequency noise that caused sporadic machine malfunctions.

The MasterPLAN approach gives Nemark increased performance and long-lasting protection of their critical loads. The benefits include improved voltage clamping, expanded system reliability and increased product longevity.

Nemark now safeguards its equipment from the surges that

disrupted its delivery schedules.

"Had we not installed Current Technology surge suppression, we would have replaced half of our machine boards to prevent missing our scheduled customer deliveries," Alanis Lopez said.

Nemark requires its molding machine manufacturer install a



TransGuard unit inside each molding machine.

"We don't put a new machine in our plants unless it has a Current Technology surge suppressor inside of it," Alanis Lopez said.

Adalberto Moreyra Munoz, superintendent of Plants 3 and 4, agreed Current Technology products offer a permanent solution to Nemark's on-going surge problem.

"We are definitely convinced that Current Technology surge suppressors have brought us economic and tangible benefits in addition to the excellent service and support Diram provides," he said.



Nemark depends on Current Technology to protect its equipment.

Current Technology

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