

Case Story | VACON® NX

Electrosteel Castings achieves highest productivity with zero downtime using Danfoss Hybridization solution for multi-motor applications



Background:

Electrosteel Castings Limited, is one of the largest manufacturers of Ductile Iron (DI) Pipes in the Indian sub-continent, based out of Kolkata, India. The company has a production capacity of 280,000 MT per annum. The present turnover of the company is US\$277 Million. Electrosteel was the pioneer in setting up a Ductile Iron Spun Pipe Plant in India in 1994 and is among the five largest producers of Spun Iron pipes in the world.

Challenges faced by Electrosteel:

The customer has existing power plants with a capacity of 12MW, which runs synchronised with local Grid. Local Grid is volatile and frequent voltage dip is a regular phenomenon. For this auxiliary system of the plant suffers from frequent tripping specially in the monsoon season. This resulted in significant downtime and subsequently in a loss of profitability. The process requires demineralised water which is also wasted because of the system tripping.

Solution Offered:

Products Installed:

- NXI0730 (DC-DC Converter),
- NXP0385 (Variable Frequency Drive),
- MCD5-0331B (Soft Starter),
- NXP0300 (Variable Frequency Drive),
- MCD5-0331B (Soft Starter),
- NXP0105 (Variable Frequency Drive)

Danfoss supplied a complete LT VFD line-up package to the customer, for their new power plant of 5MW to cope up with similar problem as a proactive measure, which consisted of 9 numbers of AC VFDs, 4nos. Soft-starter and 1 common DC-DC converter for the complete system. While on stable grid supply, the VFDs operate normally from AC auxiliary system and run the auxiliary fans and pumps of the 5MW power plant. The common DC-bus is constantly being monitored and is connected to the DC-DC converter, which in turn is connected to a single battery bank back-up system consisting of 2V x 200 cells for a 1-minute backup. The batteries are being charged when the grid supply is stable, through the DC-DC converter. The minute the system monitors a fluctuation or voltage sag in the grid, the DC-DC converter discharges the batteries and feeds the critical VFDs

