PCS100 SFC - ABB’s frequency conversion technology is helping Fisher & Paykel cross international borders seamlessly

Background
Fisher & Paykel (F&P) are a New Zealand whiteware manufacturer who export their products to many countries around the world. With development facilities in NZ (50 Hz) F&P also need to test at 60 Hz to ensure quality control is upheld. F&P therefore needed a solution to convert the voltage in their factory to a different voltage to match the power requirement in other countries to carry out this testing. Due to F&P expanding their operations at their Whiteware Product Development site, the existing inverters did not have the capacity to supply the extra load of the new labs and workshops. To ensure their products are tested to simulate the end-users premises, the existing inverters needed to be replaced with a larger 120 V + 120 V 60 Hz PCS100 SFC. Because the PCS100 SFC was able to convert F&P’s voltage (50 Hz) to match the requirement of the country’s load (60 Hz in the U.S. specifically), F&P could carry out their testing without any inconsistencies in voltage. This resulted in reduced operating and maintenance costs with high reliability, providing maximum power availability. The PCS100 SFCs small footprint in design, enabled it to be installed into a confined space, saving further on costs.

Technology driven
For this project, the PCS100 SFC allows connection of 60 Hz powered equipment to a 50 Hz supply network. Alternatively, the PCS100 SFC allows connection of 50 Hz powered equipment to a 60 Hz supply network. The system functions by converting the input AC power through a sine-wave rectifier to a DC link, and then through an AC sine-wave inverter to produce a clean, full sine-wave output at the new frequency and voltage. One unique feature critical to the reliability of the converted output supply is the built-in redundancy capability which is an intrinsic part of the modular system design. In an unlikely event where either a single rectifier or inverter module encounters a fault and stops functioning, the master controller that oversees the power modules will provide a warning notification - while allowing the system to continue to operate.

ABB has a history of selling power conversion equipment to F&P, having sold around 10 units spanning back to 2000. Maurice Cleland F&P’s Electronics Technician commented on ABB’s technology, “We have been very impressed with our previous inverters, and believed that ABB would continue to develop and improve on the existing technology.”

Fisher & Paykel
Fisher & Paykel has been designing products since 1934 and has grown into a global company operating in 50 countries and manufacturing in Mexico, Italy, Thailand and New Zealand. Fisher & Paykel products are available in more than 80 countries worldwide. The company’s trademarked appliances include Active Smart refrigerators, AeroTech ovens, DishDrawer dishwashers, Smart Drive washing machines and Smartload top loading dryers. The company also manufactures gas and electric cooktops.

To find out more about ABB’s frequency conversion solutions, visit: www.abb.com/pcs100-power-converters.