Classic luxury yacht refitted using Mitsubishi Electric drives

When the prestigious luxury yacht Sanssouci Star was refurbished to retain its classic feel but operate with super-modern high-tech equipment, no compromise was made on component quality. As a result Mitsubishi Electric FR-F800 inverter drives were selected to provide an intelligent, reliable and energy efficient solution for the engine room HVAC system.

The Sanssouci Star is one of very few remaining large ocean going luxury yachts that retain an air of period charm, but have benefitted from a full state-of-the art refit. Measuring 53.5m in length with extensive teak decks and an English saloon that wouldn’t look out of place in a stately home, it is outfitted to the highest levels of luxury.

Powered by two 1267 horsepower diesel engines, and able to travel continuously for 20 days before refuelling, the Sanssouci Star can potentially take its passengers anywhere in the world. Since the yacht is a commercial vessel offering charters for special events such as weddings and receptions, as well as exclusive private outings and mini cruises - reliability is of the utmost importance to the owners, crew and passengers.

Built in Germany in 1982, the Sanssouci Star has just undergone major refurbishment adding modern control equipment and upgraded systems. One of the key practical upgrades was to the heating, ventilation and air conditioning (HVAC) system for the engine room. For the optimum comfort of crew working in the engine room, the HVAC system now combines pressure and temperature control. A digital pressure sensor and an analogue temperature sensor both provide direct inputs to a Mitsubishi Electric FR-F840 HVAC drive.

The first level of control for the engine room fan is provided by the differential pressure transmitter which measures the difference in pressure between the engine room and the external environment. As standard the overpressure in the engine room is set to between 1mbar and 2mbar. When the overpressure in the engine room reaches this level, the system switches to temperature control.

As the temperature rises, the speed of the fan is increased according to a curve set in the FR-F840. Full fan speed is achieved at 35°C. Different temperature modes can be selected on the drive’s front panel as required.

The Mitsubishi Electric FR-F800 series drives are specifically designed and optimised for HVAC applications, offering increased motor efficiency and maximum energy savings. Embedded motor control algorithms optimise the motor voltage and current based on the desired load. The drive also includes energy monitoring capabilities to capture and display actual energy usage.

Further features include on-board preventative maintenance functions to reduce unplanned downtime, and an optional LCD display that provides accurate, time-stamped logging and real-time clock scheduling functions.

With the new HVAC system installed in the engine room, the crew are now enjoying comfortable working conditions wherever in the world the Sanssouci Star finds itself travelling.

About Mitsubishi Electric

With over 90 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, Mitsubishi Electric Corporation is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, as well as in products for the energy sector, water and waste water, transportation and building equipment.

With around 124,000 employees the company recorded consolidated group sales of 39.3 billion US Dollar* in the fiscal year ended March 31, 2014. Our sales offices, research & development centres and manufacturing
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The role of Industrial Automation – UK Branch is to manage sales, service and support across its network of local branches and distributors throughout United Kingdom.

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