

Industry: Building Management
Products Used: Modular PLCs

Drives with LON chosen for Finnish HVAC contract

When the Finnish city of Tampere undertook a major renovation of one of its key buildings, only one model of drive was considered for fan control in the heating and ventilating system – the highly efficient FR-F700 inverter drive from Mitsubishi Electric – one of the few drives in the world with LON communications.



The NEKALA 2 building, built originally in 1968, comprises some 15,000 m² over two floors, with an internal volume of 25,000 m³. Housing some 80 people, responsible for various local authority functions, the building incorporates a depot, with garages as well as offices, a kitchen and lunchroom and, of course a sauna. The project involved the conversion of workshops to provide additional office space, involving a revamp of the HVAC system as well as building and fitting out of the new space.

Using the LonWorks network, the drives, running in speed control, receive run and speed command from the TAC PLC controller, and feed back comprehensive data – speed, current, alarms and other data.

The FR-F700 features both optimum excitation control, for improved motor efficiency during constant speed operation and acceleration periods, and optimum torque patterns which accurately match the power delivered to that required at any instant. The speed of optimisation is effectively instant, so the drive is always giving maximum performance and efficiency to the load; previous generations of technology could only effectively optimise for energy efficiency under steady load or speed conditions.

LonWorks allows the integration of key building sub-systems from multiple manufacturers, simplifying total building control and monitoring. As new areas of a building are upgraded, or entire new buildings are added to a complex, users are free to pick products and services from any vendor they choose without fear of being locked into one supplier.

“The city of Tampere uses a lot of Mitsubishi drives,” concludes Jyrki Viitakoski, and they were delighted that these latest drives could be integrated into the LON network – it was a key reason for their selection. It means that data from the drives can be used directly to determine maintenance needs and intervals, making it much more efficient for the client.”

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Jyrki Viitakoski
 UTU Power Electronics

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Application story first released in August 2005