DSM's research facility saves 25,000 Euros a year with ABB standard drives for HVAC

Case notes

ABB standard drives for HVAC helped to reduce energy consumption by at least 10%.

DSM is an international organization that creates innovative products and services in life sciences and material sciences. One of its main research facilities is on the Chemelot Campus in Geleen, the Netherlands.

Excessive energy

The original HVAC air handling system at Geleen used inlet guide vanes, which mechanically restricted air flow to between 80 to 85% while the electric motors ran continuously, at full speed. With 24 motors, totalling over 400 kW, this amounted to a high energy wastage.

Four-way partnership

DSM asked mechanical contractor, Burgers Ergon, to look at ways of saving energy. Burgers Ergon recommended replacing the inlet guide vanes with variable speed control of the supply and return fan motors, using ABB standard drives for HVAC. Each motor was replaced and the new motors were fitted with their own IP54 rated ABB drive, either wall-mounted or on a mounting rack close to the motors. The drives were delivered and commissioned by Electro Drive, the HVAC drives partner for ABB in the Netherlands. Regel Partners, a Dutch BMS system integrator, took care of the controls and the building management system (BMS).

The major benefit of the ABB drives is the reduced energy consumption, which decreased by at least 10%, saving DSM some 25,000 Euros a year.

Native BACnet as standard

ABB standard drives for HVAC have a native BACnet capability as standard, meaning they did not need to be adapted using add-on software gateways. The drives are also approved to BTL (BACnet Testing Laboratories). BACnet provides the serial link between the drives and the BMS, allowing remote access to the drives over the Internet and making it possible to change set points instantly from a PC.

All 24 drives can be named uniquely to ensure better integration to the BMS and each drive is identified in clear text, in accordance with electrical schematics or depending on the drive's task. This allows

FACT FILE

Case notes

maintenance engineers to immediately identify the drive, its function and its location.

Reduced commissioning

The BACnet interface also gives easy drive commissioning and/or tuning from a central location, cutting the required commissioning time. Drive parameter sets can be easily copied to other drives using the drive's control panel. BACnet also gives more information about how each drive is performing and helps to monitor the performance of the overall building installation.

Solved problem

- Air handling system had poor control, with motors running continually, wasting energy

Solution

- New motors driven by ABB standard drives for HVAC, featuring BACnet interfaces to the BMS

Benefits

- 25,000 Euros a year energy saving
- Easy monitoring of drives over the Internet

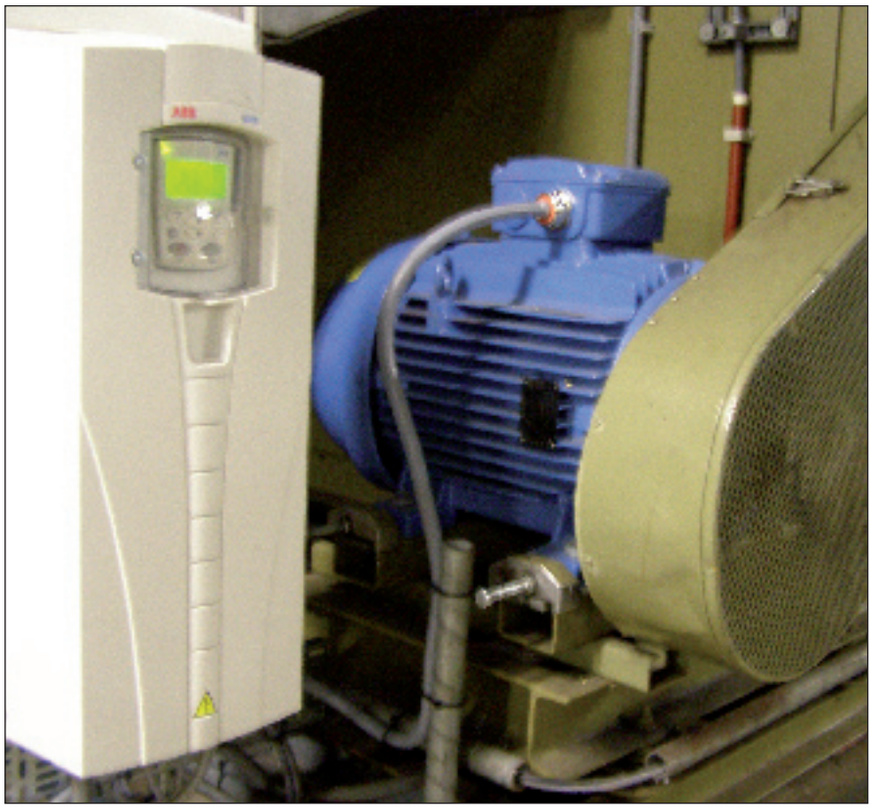

ABB Oy
Drives

P. O. Box 184
FI - 00381 Helsinki
Finland
Telefoon +358 10 22 11
Telefax +358 10 222 2681
E-mail hvac@fi.abb.com
Internet www.abb.com/drives

ABB b.v.
George Hintzenweg 81
3068 AX Rotterdam
Postbus 301
3000 AH Rotterdam
Nederland
Telefoon +31 10 407 88 86
Telefax +31 10 407 83 45
E-mail freqconv@nl.abb.com
Internet www.abb.com/drives

Electro Drive B.V.
Dwarstocht 14
1507 CH Zaandam
Postbus 90
1500 EB Zaandam
Nederland
Telefoon 075 6166656
Telefax 075 6179500
E-mail info@electrodrive.nl