



HVAC installation with MAGNA and E-pumps

Proving energy and cost benefits with CIU 300 BACnet communication modules

As a commitment to reducing greenhouse gas emissions, the British Columbia (BC) provincial government in Canada has provided funding for energy-optimising boiler energy retrofits in their buildings.

The situation

The customer has numerous buildings all over the province that had archaic HVAC equipment. Upgrading to incorporate energy efficient equipment would substantially reduce the greenhouse gas emissions, and with several buildings on board, this would amount to a substantial reduction, as well as savings.

Part of the brief was to guarantee savings over a period of 10-15 years. To be able to provide such a guarantee, a requirement was the installation of BACnet MS/TP remote monitoring of the new, efficient equipment, to ensure that the savings target is met over this period of time.

Grundfos supplied

- Product sizing and selection expertise
- Pump installation and commissioning
- BACnet interfaces and communication expertise
- Personal service and professional support

The Grundfos solution

In association with the design engineers, Grundfos identified pumps that would best serve the purpose. The Grundfos solution included Grundfos-PACO Vertical Inline Pumps operated on Grundfos CUE Variable Frequency Drives for Building Heating, Grundfos CRE & CRNE pumps on Domestic Water Heating application, and Grundfos MAGNA pumps for Heating Water Circulation.

To meet the challenge of continuous monitoring, Grundfos provided CIU 300 BACnet communication units for each of the E-Products supplied, allowing access to critical operational information such as Energy Consumption, Operating Hours, Flow and Head, and to control the pumps remotely from a central building management system via BACnet MS/TP data communication. For example, this makes possible setting the setpoint, start/stop routines and minimum/maximum performance curve.

This was done without any customisation to the standard product offering, which was a crucial point for the customer. In terms of replacement of products, the customer expressed the wish that all installed products are available off-the-shelf or as a standard product with manageable lead times.

The outcome

These projects are all at the final stages of commissioning and all the pumps have been performing as desired. The consulting engineers, installers, system integrators and the end user are all quite happy with the performance of this solution. The commissioning process is identifying certain tuning issues for pump adjustment and optimisation, which is only possible because of the critical information received from the CIU 300 units.

All in all, the customer is satisfied and have specifically standardised on Grundfos as the equipment supplier of choice on all their projects.

"The Grundfos technology looked very complicated when we received it, but once installed and commissioned, we found the products to be the easiest to install and operate."

Site Foreman for the Mechanical Contractor/Installer

"Grundfos has done a good job with the BACnet MS/TP interface. I had my doubts regarding the functionality but once the initial confusions were cleared, the CIUs worked like a charm!"

System Integrator for the BMS system Architects and Installers



The CIM/CIU 300 communication interface for BACnet MS/TP network offers data exchange with a building management system

Grundfos products:

- > CIU 300 BACnet communication interfaces
- > Grundfos-PACO Vertical Inline Pumps
- > CUE Frequency Drives
- > CRE & CRNE pumps
- > MAGNA pumps