Benefiting from BACnet as an Integrated Part of HVAC Drives

Stringent energy directives and standards for buildings, as well as national energy efficiency programs, are becoming more and more common globally, and the Middle East is no exception. However, relatively low energy prices in the region have discouraged widespread investments in energy saving measures in the private sector. As a result, energy efficiency is not always a priority when selecting equipment for projects. HVAC equipment is among the biggest energy consumers in buildings, but securing the comfort and safety of the building occupants and reducing investment costs often have higher priority than energy savings.

It’s well known that, to save energy, variable speed drives are used to adjust energy consumption in HVAC processes to the building’s specific needs. But this is not their main function. The drive’s primary role is in creating comfort by maintaining the required temperature, humidity and low CO₂ levels, depending on the occupants’ needs. In addition, in fire emergency situations, drives can effectively control building ventilation to provide safe evacuation routes for the occupants and suppress smoke propagation.

To enable a proper building’s reaction to ever-changing conditions, it’s required to secure connectivity between all the building’s systems and components to make them interoperable. This can be ensured through the support of common building automation protocols, including the most widespread BACnet.

BACnet comes as standard on ABB’s HVAC-dedicated drives, since it offers multiple important benefits. These include great scalability, allowing building of large networks with thousands of components and no limitation in the number of points, and openness meaning BACnet doesn’t have any proprietary rights requiring dedicated tools or mandatory licenses for network deployment.

A good example of a project where BACnet as an integrated feature in ABB equipment helped to realize a smart building concept comes from Vietnam. Viettel group headquarters is located at the golden land area of Hanoi and accommodates the group’s functions with around a thousand employees. ABB has supported Viettel group’s ambitions to make the building a cutting edge standard for other Viettel buildings around the world.

For the Viettel headquarters project, besides other power, automation and control solutions, ABB supplied ACH580 HVAC drives with BACnet for controlling key HVAC equipment. This includes supply and return fans in the air handling units, chilled water pumps, booster pumps, condensed water pumps, cooling tower fans, stairway pressurization fans and basement ventilation fans. The BACnet enabled drives provide seamless integration into the building management system, ensuring better comfort and safety for the occupants while optimizing energy use in HVAC. Coming as a built-in feature, BACnet allows to save on projects costs thanks to reduced wiring, fewer external gateways needed and effortless commissioning.

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Viettel headquarters gained clear benefits from smart building technologies by ABB.

Drive integration into a BMS is easier with the built-in BACnet support.