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ABB variable speed drives cut air supply unit assembly costs and size

ABB variable speed drives bring more reliability and energy savings to Air Handlers air supply units while cutting assembly costs and shrinking the amount of space needed to house them.

Air Handlers (Northern) has reduced the cost of assembling a fresh air supply unit and halved the overall footprint size of their units by installing ABB HVAC drives, ACH580. The variable speed drives' (VSDs) integrated control functions remove the need for external components, which saves space and reduces installation time.

The drives also improve the reliability and energy efficiency of Air Handlers' equipment by providing the correct air flow via regulated fan motor speed. VSDs adapt their speed to the actual requirements of a motor at any given time. In this way, up to 50 percent energy is expected to be saved.

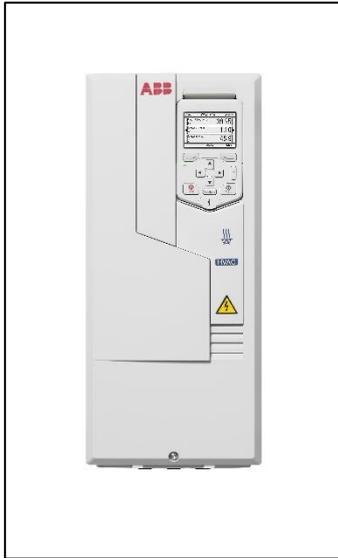
"ABB explained that many of the control functions performed by our hardware, such as timers and lamps, could be performed by the drive. We needed to fully utilize what we already had," said Mark Higgitt, Commercial Director at Air Handlers (Northern). The UK-based company makes heating, ventilating and air conditioning equipment for the building services industry. "Our customers benefit through faster installation times and fewer components mean fewer potential points of failure," says Higgitt.

ABB optimized the engineering of the units removing a warning lamp, used to signal dirty or blocked filters or air duct blockages. This was achieved by transferring the wiring directly into the VSD's I/O, ensuring that any warnings are now shown directly on the keypad. The VSD also features adaptive programming software.

This software increases the intelligence of the unit by replacing basic information such as "filter blocked" or "filters dirty" with proactive prompts such as "check bag filter" or "check panel filter". "The warning is now in terminology suitable for the application and provides practical guidance on what to do," says Scott Birchall, ABB's Key Account Manager for HVAC drives. "This makes it easier for operators not familiar with the fresh air supply units to react safely."

An existing timer was also replaced with the VSD's real-time clock, which now switches the unit on and off according to a pre-programmed schedule. ABB also rewired a frost thermostat into the VSD. If the external temperature falls below a predetermined level, the VSD's PID function sends signals to slow down the fan motor, close the damper and open the heating valve. The VSD will only speed up the motor once a safe temperature is reached, thereby protecting the motor from frost damage.

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Caption: The ABB ACH580's integrated control functions removed the need for external components, halving the overall unit footprint size

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