

Self-Contained, Ceiling-Mounted Air Conditioner Cools Health-Clinic Data Room

Allina Medical Clinics and Communities, a division of Allina Hospitals and Clinics, based in Cottage Grove, Minn., has more than 45 health-care facilities located throughout Minnesota and western Wisconsin. Recently, Matt Steding, the division's maintenance manager, was faced with an overheating data room in a clinic in Forest Lake, Minn., 35 miles north of the company's headquarters.



The 10- by-12-foot room houses network switches and other computer and telecom equipment that the clinic depends on for its day-to-day operations. The equipment generates heat and is also heat sensitive, so keeping it cool is crucial to preventing hardware malfunctions, costly damage or—even more costly—system downtime. “Now with our electronic medical records and phone systems, our risk level has greatly increased,” said Steding. “When our computers go down we have a serious situation.”

Especially at night, when the building's central air conditioning was off, temperatures in the room had always been high, but still acceptable. The recent installation of additional switchgear and computer equipment, however, along with a larger uninterruptible power supply

(UPS), significantly increased the room's heat load. Also, as part of an increased emphasis on energy savings, the company upgraded the building's direct digital control (DDC) energy management system.

Now, with tighter control of the air conditioning during the building's occupied hours, temperatures in the data room soared. “The heat load in that space had been marginal before, but now it was out of control,” said Steding. “It became clear that the room needed its own dedicated cooling system.” In weighing his alternatives, Steding ruled out a split-system design as too labor-intensive to install and maintain. “Ambient temperatures in our region range from minus 10 to plus 95 degrees Fahrenheit,” Steding said. Such extremes put an extra load on an external compressor and condenser, resulting in increased maintenance costs.

Of the standalone solutions he considered, Steding decided on a MovinCool CM25 self-contained, ceiling-mounted air conditioner, which he purchased from Spot Coolers, a major nationwide supplier of air conditioners. “We had rented MovinCool portable units in the past and I had been

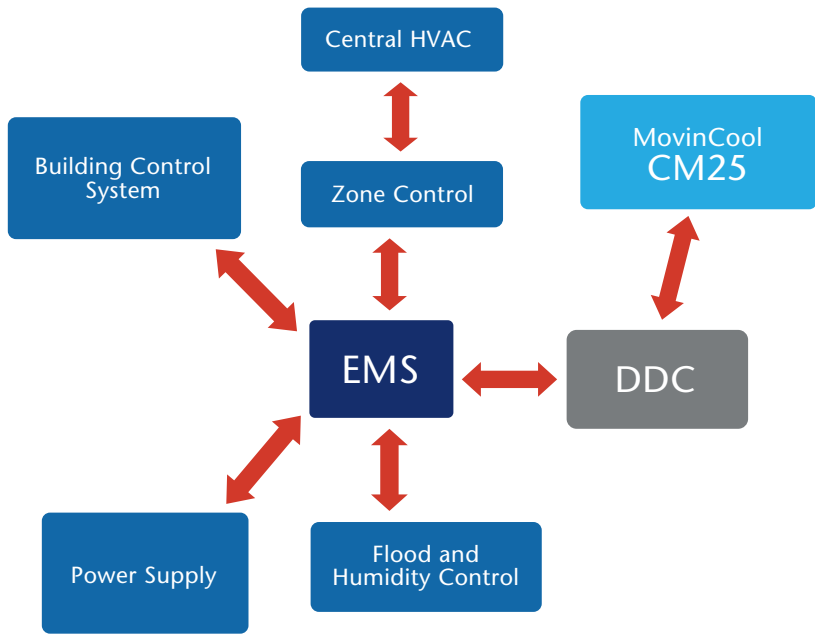
impressed with their quality and performance. I had also been impressed with Spot Coolers' product knowledge and responsiveness. They have always been very easy to deal with.”

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The CM25 is an air-cooled unit with a cooling capacity of 25,000 Btu/h, a high sensible cooling capacity of 18,900 Btu/h and a seasonal energy efficiency ratio (SEER) of 14, made possible by its energy-saving, variable-speed inverter compressor and inverter fan motors. The unit measures only 20 in. high, allowing it to fit easily in the ceiling space typically found above data rooms. Its built-in mounting bracket, vibration isolators and flanges allow installation using standard, off-the-shelf hardware.

“The MovinCool CM25 was a great fit for our needs,” said Steding. “It was economical from the standpoint of both purchase price and ease of installation. Also, it's a complete,





- Connection / Bi-directional Communication
- DDC Direct Digital Control / Relay Contact Switch Capability
- Existing System and Control in the Building
- EMS Energy Management System
- CM25 MovinCool Ceiling-Mounted Air Conditioning Unit

MovinCool's CM25 ceiling-mount air conditioner features direct analog and digital I/O, which are conveniently integrated with an energy management system (EMS).

self-contained unit, so, unlike a split system, there were no refrigerant lines to run and no outside compressor and condenser coil to install and maintain. All of that contributes to lower cost.” Installation consisted of attaching

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the CM25 to the ceiling; connecting the intake and exhaust ducts; running a drain line from the unit’s built-in condensate pump to the P-trap of a sink in an adjacent maintenance closet; and wiring the unit to a 230-volt electrical circuit.

The final installation step would normally have been to attach the

CM25’s wall-mounted controller thermostat, which provides comprehensive communications, monitoring and self-diagnosis capabilities. Instead, Steding wanted to control the CM25 from the company’s Alerton environmental management system (EMS) in the company’s headquarters. To accomplish this, he had Allina’s in-house HVAC technicians install an Alerton visual logic controller (VLC), which they wired to the CM25’s control board. Simply switching a DIP switch on the board allowed them to interface their EMS with the CM25 and take over control of the unit.

“The flexibility of the CM25’s control options made it very easy for us to integrate the unit into our automation system, which gives us remote monitoring and enhanced control capabilities,” Steding said. “The EMS lets us build the control logic that fits our needs. It allows us to monitor,

schedule, trend and alarm the points we want, so we have greater control over the unit.”



Steding plans to install additional CM25s in other Allina clinics as the need arises, whether for new installations or retrofits. “The CM25 has all the features we need, at an affordable price. Also, being able to connect it to our control system so easily is a significant benefit,” Steding said.