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Climate Control Goes Wireless

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When Jeff Somers' cell phone jingled in his darkened bedroom at 5 o'clock one morning this past winter, he crawled out of bed, grabbing for the phone on his dresser.

He was surprised at what he heard.

A computerized voice crackled on the line, telling him the temperature in the building where he works as service operations manager had dropped dangerously low.

"The building got real cold and it called me," Somers joked.

Actually, the call was initiated by a device made by Fairfield-based Noti*fact* Inc. that Somers had connected to a temperature sensor inside the building just two days before.

Noti*fact* has figured out a way to blend several technologies, including internet and wireless communications, into a device that monitors heating, ventilation, and air conditioning equipment – HVAC systems.

Noti*fact*, short for notification, was formed in January, the brainchild of a team of engineers at Heat-Timer, a 65-year-old company that sells boiler controls systems and shares offices with Noti*fact*.

Most of us are probably familiar with common uses of wireless technology, such as the cell phone or pager. But engineers are finding more and more ways to connect without wires, from onboard emergency assistance buttons in cars to wireless scanning devices used to keep track of warehouse merchandise.

The number of wireless devices is doubling every nine months, says Michael Kintner-Meyer, a senior research scientist at the Pacific Northwest National Laboratory, a federal research lab.

The HVAC industry, however, has not rushed to adopt the latest technology -- until now.

Noti*fact* and at least one other competitor are developing similar wireless monitoring devices. And experts such as Kintner-Meyer say the HVAC industry is poised to cut the cord and go wireless.

Noti*fact*'s system is essentially a remote monitoring device that gives a contractor or building owner a chance to catch mechanical problems quickly.

For example, Peter Jowaisas, Noti*fact*'s marketing director, said the system is being used by a contractor whose job it is to make sure the lobster tanks owned by a Maine shellfish company stay at the cool temperatures favored by crustaceans.

Others interested include a company that operates the pumping equipment that makes snow for ski resorts and another that operates pumps on golf courses. Pharmaceutical companies that need precise refrigeration for medicines and companies that must store food at cool temperatures are also considering the system.

The Noti*fact* device attaches to sensors on equipment such as air conditioning units, pumping systems, boilers, heaters, and chillers.

The box itself is about the size of shoe box, with a small antenna on the top that periodically sends a burst of data across the airwaves to the nearest cellular tower.

If an air conditioning unit's compressor malfunctions, for example, the box's monitors will send a message to the tower. From there, the signal travels to Noti*fact*'s data center, where a computer called a server receives the signal. If the signal indicates an air conditioner malfunction -- or in Somers' case that his building's boiler was on the fritz -- the server sends out an alarm via regular phone, cell phone, pager, or e-mail.

Using Noti*fact*'s Web site, a contractor can customize the notification process. Somers said he wanted the device to call his cell phone and send him an e-mail. After Noti*fact* rousted him out of bed, he checked his e-mail and the same message was there.

Kevin Duffy, Noti*fact*'s vice president of sales and marketing, said monitoring devices used in large commercial buildings are nothing new, but they typically cost about $10,000.

Each Noti*fact*, which attaches to a single device such as an air conditioner, sells for about $1,000 plus a $17 monthly subscription fee, giving a smaller business a chance to have a sophisticated monitoring system.

Another company that hopes to tap into the wireless HVAC market is Pentech Energy Solutions Inc., based in San Diego. Pentech introduced a product called E-MAC in November that is used primarily for HVAC systems. It also uses wireless technology and the Internet in ways that are similar to Noti*fact*'s device.

Michael Ivanovich, editor of the industry trade magazine Heating/Piping/Air Conditioning Engineering, thinks wireless applications in the world of heaters and air conditioners will only expand.

Products such as the Noti*fact* "can provide a competitive advantage for companies that are willing to invest in a new technology and come up with very strategic applications," he said.