

Environmental monitoring the food supply

Edward Dougherty, General Manager, Highwood Cold Storage

Managing 2,700,000 cubic feet of frozen food and 300,000 cubic feet of refrigerator warehouse requires no compromise in environmental monitoring.



When we built Highwood Cold Storage in 2003, (our second cold storage warehouse in Londonderry, New Hampshire) we knew we wanted more than traditional temperature measurement and monitoring. Our goals were broad; we requested and gained quotations from Honeywell, Siemens and Johnson Controls, responses were comprehensive but, left our evaluation team wanting. We could not put our finger on the issue but were sufficiently experienced to know we had not seen a solution meeting our business objective.

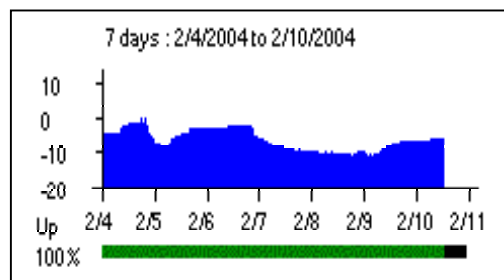
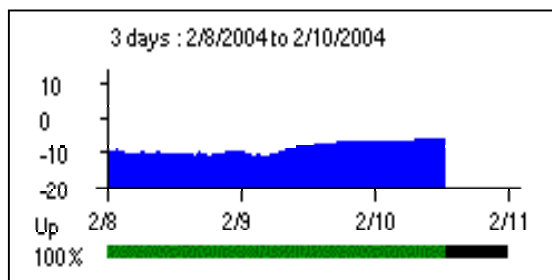
Good fortune arrived in a phone call from, a fellow supporter of the local YMCA. He asked about the new facility and I commented, about our search for an environmental monitoring tool, providing customer reporting, as well as measurement, monitoring and alerting for our new cold storage warehouse. He suggested a solution from Sensatronics. We were skeptical, as industry giants failed to offer functionality and price that aligned with our objectives. After a telephone conversation and visit, my staff was a proponent of the Sensatronics solution. It became clear to us that Sensatronics, with low prices and exceptional functionality, is clearly positioned to dominate environmental measurement, monitoring and alerting for cold storage warehousing.

We did our installation in two phases. An electrical contractor installed the temperature probes, assuring that we maintained our strict standards for FDA, USDA, US Customs and Homeland Security. We have to be absolutely sure that we maintain vigilance over the food supply. My staff and Sensatronics did the monitor installation and software integration. Total installation time took just over one day.

Before we got the Sensatronics solution installed we did not know what we did not know about our cold storage warehouse. Our operating plan, required that the engines during off peak hours to save energy costs; we ran the engines every other day to maintain the warehouse at minus three degrees Fahrenheit. We knew our operating procedure worked but we had no idea if running the engines less often or for a longer period could reduce cost without compromising quality.



The Sensatronics EMS software and its easy to read graphs gave us the answers. The Sensatronics EMS software reports temperatures in the cold storage warehouse, cooler and on the shipping/receiving dock every five minutes, 24 hours a day, 7 days a week. More or less frequent measurements are a decision of the person administering the EMS software application. The EMS application offers levels of alerting. We selected alerting at two levels above the desired temperature range and two levels below the desired temperature range. A question is why below the desired temperature and the answer is twofold. Damage to the customer's product if the food is exposed to exceptionally cold storage and the second in monetary. We are wasting money and energy if we are providing too much cooling. Using EMS we have a tool that shows us one day, three-day, seven-day and 30-day views of our cold storage environment.



Graphs and detailed metrics are provided. Long-term logging is done with the push of a button, and extracting the data in Excel format is just as easy.

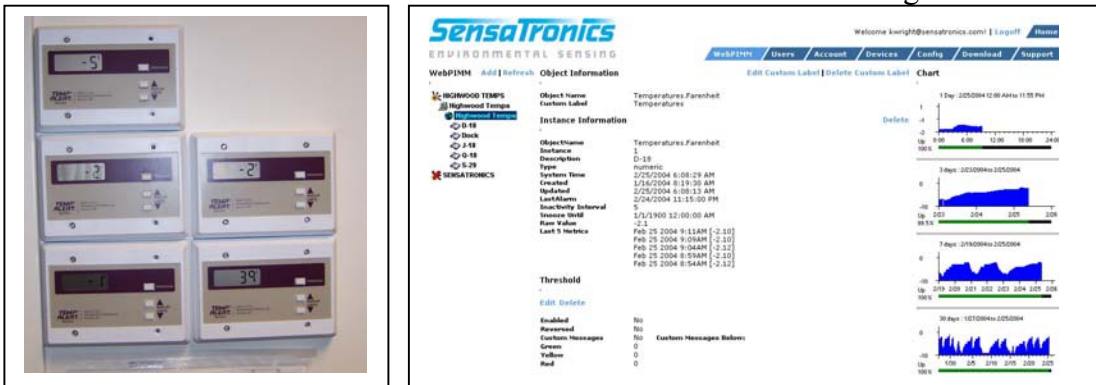
Alarms and alerts occur in the form of cellular phone calls and text based pages, email or any other form of alert desired. A list of contact persons and contact methods is provided in the EMS application. There is also a frequency of contact selection that tells the application how often to repeat alerts until intervention occurs. Should the issue self rectify, alerting ceases. The event is logged as an out of range event and displayed in the graphical user interface. Software security assures that no parties can delete or alter recorded data, thus an audit trail is preserved in the application.

A benefit offered to our customers and compliance inspectors is a web view of Highwood Cold Storage. Charts and graphs are on the web. There is no need for a visit when it is inconvenient. Anyone with a secure login and password can view the environment in our cold storage warehouse on the web. Environmental data updates every five minutes, and is completely audited and maintained on a secure server at a Sensatronics location in California. The EMS application has broad capabilities, allowing us to monitor an extensive set of environmental and system metrics.

The payback on the installation is immediate (less than one month) in managed energy costs. The temperature unit, a Sensatronics Model 708-1208 retailed for \$709, plus approximately \$200 for extended length probes and \$215 annual license fee for hosting the EMS software application. We have not yet even begun to assess the benefits that are accruing to our customers. Customers have the ability to monitor their products, in our storage facilities without calling us for reports. We now provide our customers with proof that their product is stored and ships from our facility at agreed temperatures any claims that arise are transportation and not cold storage. This distinguishes Highwood Cold Storage Warehouse from other cold storage warehouses.

We recently learned that Southeastern Foods in Pelham, Alabama has implemented a similar Sensatronics solution. We assume that they are achieving energy savings and will be using the EMS application as a competitive advantage in their business.

At Highwood Cold Storage we're often asked that if we knew of the Sensatronics solution would we have still invested in the classical wall mounted digital thermometers.



The answer is likely “yes”. Being a traditionalist, I like seeing wall mounted digital thermometers, but I can truly say that our next expansion will completely rely upon the Sensatronics solution. Our staff has already converted to the web based EMS solution. We are considering a projection system to display the Sensatronics EMS data on the wall so that prospects that visit, can see the tools available to Highwood Cold Storage customers.

Our estimated savings are 4% of our monthly energy costs by being able to manage how and when we run the engines to maintain temperatures in the freezer and refrigerator warehouses. Our energy cost is typically \$1000 per day. It wont be long before this solution becomes the standard for the cold storage warehouse industry and we already

understand that the technology is moving into super markets, restaurants, convenience stores and other food storage facilities that serve the public.

We promote the Sensatronics solution as a reason for our customers to select Highwood Cold Storage to be the vendor of choice. Our customers love having the ability monitor the environment in our cold storage warehouse from their web browser.