



ENERGY-SAVING CHILL—WITH SUPER-HOT MONITORING

How some of the country's smartest companies are using KE2 Therm Solutions to improve operations

By Ashwin Jagannathan

Photography by Cathy Rennick

Not too long ago, sophisticated refrigeration controls, with some limited benefits, were only accessible to mammoth supermarket chains—and at a cost. For the overwhelming majority of organizations with refrigerated storage spaces, refrigeration controls remained frozen in time with inefficient mechanical controls that hadn't changed much since the 1970s.

It was in this stagnant landscape that **KE2 Therm Solutions** stepped in to modernize the refrigeration control field. KE2 Therm may not have been the first company to make the leap, but its efforts soon had a significant impact on how some big-name organizations control their refrigerated spaces, from **Walmart** to the **University of Wisconsin** to **Braum's Dairy Store** and others.

Inspiration for advanced controls came from studying the refrigeration controls found in Europe, according to **Jeff Kavanagh**, KE2 Therm's vice president of marketing and sales. But rather than imitate the controllers, KE2 Therm improved upon them, says **Ryan Kliethermes**, KE2 Therm's product manager. "Electronic control was the way Europe had gone. We took things several steps forward. It was a combination of targeting and improving efficiency in North America and taking advantage of the latest communications technology," Kliethermes says.

With the adoption of KE2 Therm controls, large chains have seen significant improvements in energy

+ KE2 Therm Solutions provides refrigeration controls so you can rest easy.



KE2 THERM CONTROLS ARE FOUND IN HOSPITALS, SCHOOLS, ZOOS, AND RESTAURANTS—FROM MOM-AND-POPS TO MAJOR FRANCHISES AND OTHER CUSTOM CONTROLLED ENVIRONMENTS IN MANUFACTURING OPERATIONS ACROSS THE U.S., CANADA, AND JAPAN.

efficiency, but even smaller footprint locations have been able to modernize their refrigerated spaces thanks to KE2 Therm's efforts to lower the barriers to better controls. Unlike previous refrigeration controllers, the cost is manageable—and the controllers often pay for themselves quickly—and there's no proprietary software or cost required for remote access and alarms. "Any place that has a refrigerated space could benefit," Kliethermes says. "And most would not have the opportunity to monitor and control remotely without KE2 Therm technology. We are found in hospitals, schools, zoos, and restaurants—from mom-and-pops to major franchises and other custom controlled environments in manufacturing operations across the U.S., Canada, and Japan."

BIG BENEFITS ARE A BREEZE

KE2 Therm has installations all across North America, from the **Dallas Cowboys Stadium** to **Universal Studios** to meatpacking warehouses and everywhere in between. Adding KE2 Therm adaptive refrigeration controls reduces energy costs, lowers service costs, and eliminates product loss, providing many businesses with some serious peace of mind. After all, if you're a business with \$20,000 worth of food in your freezers, you certainly don't want to throw that out.

Kavanagh says KE2 Therm stepped in to fill a void in the industry, advancing refrigeration controls beyond supermarkets to include the restaurants, schools, prisons, and hospitals that also have refrigeration needs. "When you start looking at it, you've got probably 2 million locations that basically had no technology available to allow them to become more energy efficient," he says of the years before controls like KE2 Therm's.

Accurate, real-time data and helpful alarms go a long way to save time, money, and energy. **Champion Air**, which services regional **Dairy Queen** stores among other clients, had been experiencing repeat issues with thermostat and time clock failure and was unsatisfied with the alarm notifications. After installing the innovative KE2 Therm refrigeration controllers and monitoring technology, the problems were resolved almost instantly.

"They were a blessing," says **Steve Messer**, owner of Champion Air. He says the KE2 Therm controllers allowed Champion Air to eliminate fan failures due to

iced evaporators. Moreover, the monitoring abilities that KE2 Therm provided helped the business keep better tabs on its refrigerated spaces, with improved alarm notifications so they could respond more quickly and effectively when problems arose. "With our patented communication technology, every controller we make can be accessed remotely, and users can receive alarm notifications via text or email. This



KE2 Therm offers accurate, real-time data and helpful alarms.

PHOTO: COURTESY OF GSS



allows for a proactive response to system problems and helps avoid catastrophic failures and loss of refrigerated product,” Kavanagh says.

Having the controllers also helps to reduce costly nuisance service calls. **E-Z Mart Stores**, a convenience store chain, was able to eliminate these calls after adopting KE2 Therm controllers, according to **Darren Washington**, HVAC-R supervisor for E-Z Mart Stores. “I was able to identify a faulty compressor start component by the ability to remotely monitor the system. I was able to dispatch the service technician quickly with a diagnosis and proper parts to fix the situation,” he says. “Also, I have been able to call stores to quickly address potential issues and product loss by noting when freezer and cooler doors are open too long. EZ Mart has reduced expensive product loss by monitoring sites and identifying issues before they become a problem.”

Excessive defrost cycles are a common problem that besets refrigeration spaces, and it’s exacerbated by organizations being unaware of how often it happens. With KE2 Therm’s adaptive, demand defrost, the defrost cycles are automatically matched to the system’s needs. This typically reduces the time spent in energy-guzzling defrost cycles by more than 70%. At E-Z Mart Stores, Washington found that using KE2 Therm’s demand defrost reduced the defrost cycles from 28 to less than 8 times per week.

Retail behemoth **Walmart** has extensive facilities with significant refrigerated needs to say the least, and KE2 Therm’s controllers have also made a huge difference there. Walmart noted that average room temperature at defrost termination with KE2 Therm controllers was almost 10 degrees lower based on a more efficient management and termination of defrost cycles, according to **Monte Crofutt**, technical standards director for **Walmart Realty Standards Group**.

“The higher average temperature at defrost termination is a good indicator that the rack



controller runs the defrost heaters for longer periods of time, putting more heat into the freezer during each defrost. The hotter coils contribute to the fogging effect in freezers, which results in more “snow and icing” buildup on fan guards, ceilings, product, and racking. The most obvious side effect is that the additional heat load must be removed by the compressors on the rack, which can be avoided, and result in a significant amount of energy savings.

Large or small, many organizations hear about KE2 Therm’s services through positive word of mouth. In several cases, businesses are simply looking for improved energy efficiency overall, without necessarily realizing they can save energy in their refrigerated spaces, too. When they finally try KE2 Therm, they’re struck by how easy and effective the controllers are.

As KE2 Therm’s products continue to benefit a wide range of organizations, Kavanagh says he sees the company occupying a role in refrigeration similar to **Nest’s** role in the smart thermostat industry. “Forty years ago, people had mechanical thermostats. Now you have technologies like ours that are more adaptive to provide better equipment operation and peace of mind for all types of refrigerated spaces.” **gb&d**

✚ KE2 Therm Solutions’ controls reduce energy costs, lower service costs, and eliminate product loss.