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KE2 Bits

Information and updates from KE2 Therm Solutions

Facilities Manager Gets Proof of Energy Savings with KE2 Evap

For Tom Moss, facilities manager of W&M Restaurants, a franchisee of Taco Bell Corporation with multiple locations in Missouri and Illinois, making solid decisions means gathering facts and doing research. So, when Jeff Kavanagh of KE2 Therm Solutions suggested KE2 Therm's new energy saving electronic controller for Moss's refrigeration equipment, naturally Moss wanted proof.

For his study, Moss decided to compare energy consumption and temperature control of a walk-in freezer using two scenarios. In the first, the system was operating with standard mechanical controls, including a thermostat, defrost timer and defrost termination device. In the second, the system was controlled using a KE2 Evaporator Efficiency (KE2 Evap) controller in place of the mechanical controls.The study was conducted during September through November 2013, on a walk-in freezer at the Taco Bell located in Union, Missouri.

The freezer was monitored, and data on the energy consumption of the compressor, evaporator fans and defrost heaters was gathered. After gathering the data from the mechanically controlled system, the system was switched to the KE2 Evap controller, and the same data points were monitored. Then, the pre and post retrofit results were annualized, to develop a comparison of the energy consumption.

Conclusion: In addition to the KE2 Evap's documented energy savings of 51%, which amounts to a saving $652.06, and the improved temperature stability, with a median temperature less than one degree from setpoint, this location also realized the benefits of troubleshooting via the communications capabilities of the KE2 Evap controller.

With Moss's study complete, and the KE2 Evap's energy savings and temperature control exceeding expecations, Moss has several other locations scheduled for retrofit with the KE2 Evap in 2014.

Using the KE2 Evap Provides the Following Savings

	Compressor	Fans	Heaters	Total
Reduction Runtime Hours/Year	1,535	5,470	249	
Reduction kWh/ Year	3536.92	2625.36	358.26	**6,520.54**
Reduction Energy Expense/ Year	$353.69	$262.54	$35.83	**$652.06**

* Based on $0.10/kWh

For the complete case study visit www.ke2therm.com/casestudies.html

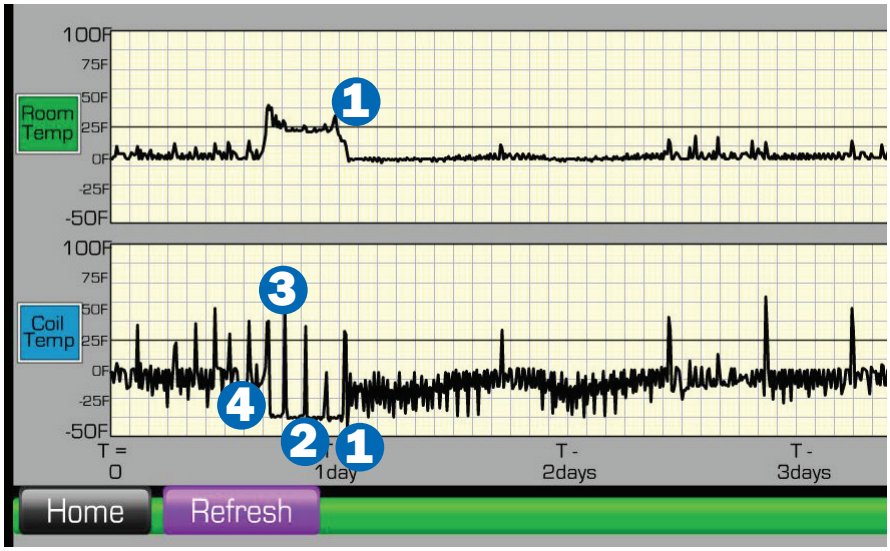
TECH TIP #21: Distinguishing the difference between ice buildup & a malfunctioning fan

When there is no air movement across the evaporator due to a malfunctioning fan look for the following on the KE2 Evap's performance graph:

1. There is the tendency for an abrupt increase in room temp, in tandem with an abrupt decrease in coil temp.
2. The graph shows a consistent low coil temp (no heat transfer from the room to the coil).
3. No improvement in heat transfer after defrost, room temp to the coil temp.

By defrosting, the controller did its best to bring the system back into efficient operation. However, you can see that the controller's response-defrost, did not help the situation, further evidence, that this is an air movement issue, not a freeze up issue.

4. The fan is repaired/replaced and system starts returning to normal.



Actual performance graph showing fan failure

KE2 thermsolutions
209 Lange Drive .
Washington, Missouri . 63090
636.266.0140
www.ke2therm.com