

COPELAND DISCUS DIGITAL COMPRESSORS

System performance optimized with Intelligent Store architecture

Customer

Sobeys, a national Canadian supermarket chain, with more than 1,300 stores.

Food Retail

Result

- Compressor starts were reduced by 56%, reducing inrush current, thereby reducing stress and wear on compressors and contactors.
- Operating suction pressure range is narrowed by 85% allowing average suction pressure to rise by up to 4 psig.
- Case temperature fluctuations were reduced by up to 90%, as shown by reducing operating range of a dairy case from 15°F to 11¼°F, improving product integrity and reducing perishable shrink.

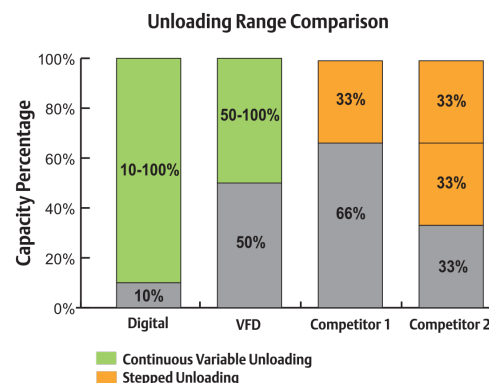
Application

A digital capacity modulation technology upgrade was added to existing Intelligent Store compatible Copeland Discus Digital with CoreSense Diagnostics compressors being installed in a new supermarket during startup phase, 100% two weeks prior to opening.

Challenge

Retailers spend on average 1.5% of sales on energy and the cost to operate the refrigeration equipment is 65% of total store electricity used. It is the #1 concern of supermarket executives ranking above healthcare costs and competition. 78% of retailers have identified refrigeration management programs as the #1 way to save on energy costs.

Reducing energy costs while preserving the perishable product integrity is a priority.



Solution

Digital capacity modulation technology adds variable capacity unloading up to 90% of the compressor capacity. The extended range of unloading assumes the role of a 'swing' compressor and reduces the cycling on all compressors that share the same suction group.

The digital capacity modulation technology, which is designed to review and adapt within seconds, delivered an unloading strategy to precisely match the capacity with the product load over the variable operating conditions typical of supermarket applications.

Compressor starts were reduced by an average of 56% and operating suction pressure increased, both contributing to reduced energy consumption. Case temperature fluctuations were reduced to as small as 1 1/4°F resulting in extended shelf life of perishable products.

After reviewing the results, a decision was made during startup to standardize on the digital capacity modulation technology for Sobeys' new store building program, and a retrofit program was launched to identify existing Sobeys stores for upgrade.

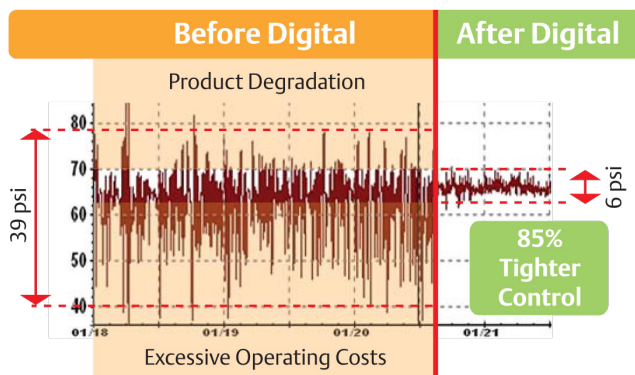


“Sobeys is recognized for the freshest produce, meat and fish for our customers. Copeland Discus Digital compressors augmented that commitment by significantly reducing case temperature fluctuations to as low as 1 1/4 °F.”

- Ken Flavin, Manager Refrigeration & Maintenance Sobeys, Inc., Stellarton, NS, CAN

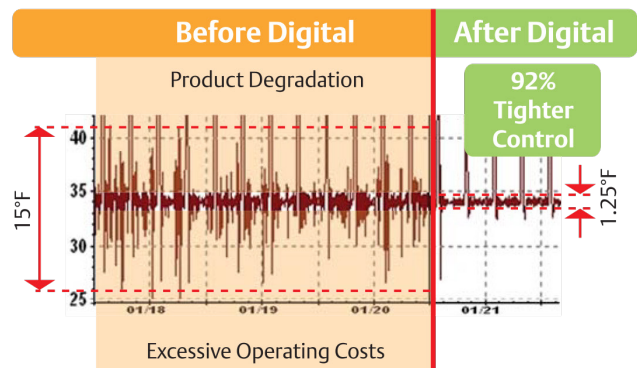
Suction pressure – Medium temp rack

Rack suction pressure range narrows significantly with Copeland Discus Digital compressor with CoreSense Diagnostics.



Dairy case temperature

Case temperature range narrows significantly with Copeland Discus Digital compressor with CoreSense Diagnostics.



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