

Refrigeration System Becomes More Efficient and Environmentally-Friendly



Leading Korean chain adopts Emerson's Scroll Compressor Rack and Monitoring Solution for the first time in the Korean supermarket industry.

The logistics industry has been focusing on improving low temperature storage to better manage food quality and to satisfy customer demand for convenience and home-cooked styles of fresh food. High-performance refrigeration and freezing systems in supermarkets can contribute to improved business performance by safely storing food with increased energy and operational efficiency, while being environmentally-friendly. Against this backdrop, Emerson has successfully supplied and installed scroll compressor rack and monitoring solution for refrigeration and freezing systems in one of Korea's major supermarket brands, that has a distribution network in three countries, contributing to maximizing its performance, reliability and energy efficiency.



Project Background

The supermarket chain has a green management goal of increasing energy saving rate to 8% and reducing its carbon footprint by 2025. As part of this strategy, it has implemented a plan to make its refrigeration and monitoring systems greener by increasing energy efficiency of compressor solutions for its refrigeration and freezer cabinets.

Challenges

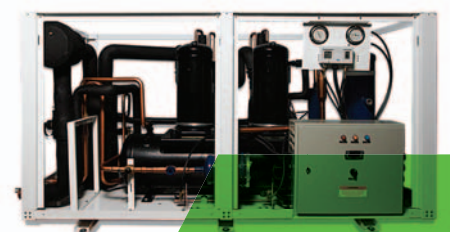
The supermarket chain wanted to replace its existing system, which was plagued by high costs during the entire life cycle, with a refrigeration and monitoring solution with higher performance and management efficiency. Despite the global efforts to preserve energy and environment, such as the Paris Climate Change Accord, the company's existing refrigeration and freezing system produced relatively large amount of greenhouse gases. Therefore, minimizing the impact on global warming by adopting greener refrigeration technology was a challenge that needed to be addressed.

Solution

The company installed a scroll compressor-based rack and monitoring system, improving its refrigeration performance as well as reducing power consumption and global warming potential (GWP).

Project Schedule

Emerson and the supermarket chain prepared the groundwork for the project in early 2017, leading up to implementation of the scroll compressor-based rack and monitoring solution in December, 2017.



Benefits



By adopting a scroll compressor rack and monitoring system with a better performance than the existing one, the refrigeration and freezing performance had been improved by 15% and cost efficiency for entire life cycle increased accordingly.



With vapor injection technology used in scroll compressor rack systems, compressor power consumption is dramatically reduced, increasing reliability and energy efficiency.



By managing rack systems and display shelves with the monitoring system installed at the store-level, system malfunctions can be prevented, and stability improved.



Scroll compressor rack systems do not require overhaul maintenance (disassembling, checking/repairing, and reassembling) every five to seven years, resulting in dramatic reductions in maintenance costs.



Scroll compressor rack systems equipped with electronic sensors and controllers enable refrigeration and freezing system durability and efficiency, allowing more precise control of temperature.



Scroll compressor rack system with the new R448A refrigerant cuts GWP in half compared to existing refrigerants.



Compared with existing systems with a large footprint, the scroll compressor rack system is equipped with small encapsulated compressors maximizing space utilization in the machine room.

Customer feedback

“ Emerson’s scroll compressor rack system is an optimal solution for large-scale food refrigeration. Its high refrigeration and freezing performance and efficiency, as well as durability and stability, enables consistent operation. Moreover, Emerson contributed to setting up an environmentally-friendly refrigeration system by adopting a new refrigerant, which is significantly more environmentally friendly. We look forward to continuing to make our customers happy by better managing food quality based on Emerson’s refrigeration and freezing solutions. ”

Emerson.com

Emerson, Copeland Scroll and CoreSense are trademarks of Emerson Electric Co. or one of its affiliated companies.
©2018 Emerson Climate Technologies, Inc. All rights reserved.



• CONSIDER IT SOLVED.™