

Provides precise temperature and humidity control for baking industry

Summary

The Copeland Scroll Digital™ compressor for commercial air conditioning and refrigeration offers improved temperature and humidity control, while enhancing system reliability.

Result

- This self-contained package designed by Cox Air Systems provides a quick and easy installation for service technicians
- The end user has achieved better operational performance with consistent temperature and humidity levels
- The equipment has reduced maintenance costs and improved overall reliability
- Cox Air Systems has installed 20 digital compressors in other pre cooler applications around the world, all of which have operated as designed, providing a reliable solution for difficult applications



Application

Single-circuit air conditioning system for food processing.

Customer

An international bakery supplier headquartered in southwest Michigan, with more than 40 locations around the globe. The supplier produces a complete line of sweet bakery products from ingredients to comprehensive frozen finished products.

Challenge

Clean, dry air is vital in the manufacturing process of baking products, and sugar is extremely reliant on constant temperatures. High heat and humidity will cause the product to degrade and clump together, resulting in inconsistent flow of the sugar during production.

Product degradation due to poor temperature and humidity control is a significant financial concern. The bakery supplier's two dehumidifiers were equipped with Carrier 38AU A/C split pre coolers, which remove moisture from two, large sugar silos, and are designed to operate continually until ambient temperatures reach 55 degrees Fahrenheit.

The supplier was experiencing problems with the units' ambient temperatures, which were falling close to the pre coolers set point, causing the unit to lockout due to short cycling. This resulted in erratic swings in temperature, and required a manual reset. When the unit short cycles, there is poor temperature control and it shuts down the manufacturing process until dehumidification is restored.

Solution

The bakery supplier turned to contractor Delbert Wirth of Cox Air Systems, who worked closely with Steve Faler of Key Refrigeration and Tim Uderman of Emerson Climate Technologies, to assemble, test, and install a dehumidification package that would eliminate short cycling and system tripping. Cox Air Systems designed and tested a Copeland Scroll Digital compressor using a Dixell™ XC643 controller in its facility, and Emerson helped with the installation. Once the fixed compressor was replaced with the new digital technology, the erratic swings in temperature and RH were eliminated, and the unit precisely maintained a 55 degrees Fahrenheit temperature.



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