Emerson Walk-In Solutions

EMERSON

Walk-in coolers and freezers play an important part in your operation. Emerson is working hard to ensure that your walk-in cooler or freezer is as reliable and energy-efficient as possible. We're pioneering new refrigeration technologies, from compressors and condensing units to electronicsand monitoring. And we have the resources to make sure the job gets done right.

Emerson offers a wide range of innovative products, solutions, support, training and tools – all designed to make life more comfortable and your job easier. Our portfolio of brands offer innovative, industry-leading solutions that combine technology and engineering for the benefit of our customers, our environment, and our future.

Copeland Scroll™ Compressors for Refrigeration

Copeland Scroll compressors have earned a reputation for reliability and lower energy costs. Unlike compressors which use pistons (including hermetic and semi-hermetic compressors), scroll compressors have only two moving scroll members. This difference results in a more reliable, energy efficient walk-in, which translates into less downtime and lower energy bills.

With more than 170 million Copeland Scroll™ compressors installed, you're not just choosing a compressor, you're choosing nearly 30 years of scroll innovation and expertise. And, protecting your reputation by selecting a compressor that is of the highest quality in the commercial refrigeration market. With our complete lineup of compressors for low-, medium- and extended medium-temperature applications for walk-in coolers and freezers, we'll help you select the configurable solution that fits your needs. Since our compressors are distributed in the US, we can help ensure compressor and service availability for our customers.

"The freezers in the newer restaurant stores use mostly scroll compressors and they are extremely reliable. In fact, we've been servicing Copeland Scroll compressors in restaurants for about nine years and had only one go bad."

– Service Manager
Dayton, Ohio

HOW SCROLL COMPRESSORS WORK

1 Gas enters an outer opening as one scroll orbits the other.

2 The open passage is sealed as gas is drawn into the compression chamber.

3 As one scroll continues orbiting, the gas is compressed into an increasingly smaller 'pocket'.

4 Gas is continually compressed to the center of the scrolls, where it is discharged through precisely machined ports and returned to the system.

5 During actual operation, all passages are in various stages of compression at all times, resulting in near-continuous intake and discharge.

To learn more visit **Climate.Emerson.com/Copeland**

Copeland Scroll Outdoor Refrigeration Unit, X-Line Series

The Copeland Scroll Outdoor Refrigeration Unit, X-Line Series sets a new standard for energy efficiency, reliability, and installation flexibility. With capacities now available from ¾ to 6 HP and expanded refrigerant approvals, its industry leading onboard diagnostics and system protection are available for more applications commonly found in today's foodservice establishments.

The Copeland Scroll Outdoor Refrigeration Unit was designed with three factors in mind:

Energy Efficiency

Scroll compressor technology, variable speed fan motors, large capacity condenser coils, and advanced control algorithms, work together to significantly reduce energy consumption.

Reliability and Communications

Equipment reliability is greatly enhanced by combining the proven reliability of Copeland Scroll compressors with advanced CoreSense™ technology. Each unit has built-in CoreSense Diagnostics and protection that can alert and record alarms independently or communicate with building management systems.

Flexibility

The ultra-quiet variable-speed fan motor significantly reduces exterior sound levels and is combined with a lightweight weather-resistant cabinet, slim footprint, and optional wall mounting capability to deliver unmatched installation flexibility.

Copeland Scroll **Digital** Outdoor Refrigeration Unit, X-Line Series

Building on the field-proven Copeland Scroll and X-Line Outdoor Refrigeration Unit platforms, the Digital X-Line Series delivers superior food safety and energy efficiency in small-format supermarkets, convenience stores and foodservice establishments.

Digital modulation enables tighter control of case temperatures, giving operators the security of knowing their food is kept safe and at maximum quality. The Digital X-Line Series combines compression technology with variable-speed fan motor control, large-capacity condenser coils, and smart protection and diagnostics to meet today's challenging refrigeration requirements.

Ideal for walk-in coolers and display cases, digital X-Line units deliver more precise, reliable refrigeration, longer-lasting equipment, and lower energy bills in medium-temperature applications.

Energy Efficiency Advantages

- Substantial annual energy efficiency improvements
- Reduced compressor cycling
- Longer equipment life
- Decreased electrical load at startup

Refrigeration Reliability Improvements

- Precise setting and tight control over case temperatures
- Load matching from 20 to 100 percent
- Improved product integrity, which helps operators maximize food quality and safety

Copeland Scroll Outdoor Refrigeration Unit, X-Line Series

Copeland Scroll Digital Outdoor Refrigeration Unit, X-Line Series

To learn more, visit **Climate.Emerson.com/X-Line**

Copeland Scroll Water-Cooled and Air-Cooled Condensing Units for Refrigeration

Copeland Scroll air cooled refrigeration units (F-Line Series) allow evaporator temperatures as low as -40° while using today's new high heat refrigerants. Available in nominal sizes from ¾ to 5 horsepower, F-Line condensing units are ideal for cooler and freezer applications including display cases, merchandisers, and walk-ins. Our low-temperature offering has built-in liquid injection controls discharge temperatures and expands the operating range of the compressor.

Complying with the DOE's Mandate on Walk-In Coolers and Freezers

The DOE's energy efficiency mandate will take aim at walk-in coolers and freezers (WICFs) — requiring 20–40 percent energy reductions in WICFs smaller than 3,000 square feet that are manufactured after the following enforcement dates:

- January 1, 2020, for dedicated condensing systems applied in walk-in coolers
- July 10, 2020, for dedicated condensing systems applied in walk-in freezers

As a manufacturer of condensing units for a wide range of commercial refrigeration applications, we have released our condensing units for walk-in applications according to the DOE's minimum AWEF requirements with respect to the above compliance dates. For OEMs, these certified condensing units will help you achieve compliance in one of your primary refrigeration system components. Simply combine a Copeland AWEF-rated condensing unit with an AWEF-rated unit cooler in order to achieve compliance in a dedicated system.

To review our AWEF compliant lineup, visit Emerson Online Product Information (OPI) or **Climate.Emerson.com/AWEFCatalog**

Dixell™ XW60K Walk-In System Controller

The Dixell XW60K Walk-In System Controller from Emerson replaces the following devices on a walk-in cooler or freezer:

- Mechanical thermostat
- Defrost time clock (with On-Demand Defrost)
- Fan control
- Klixon defrost termination
- Temperature and door open alarm
- Thermometer
- Light Timer

Remote Power Board

Walk-In Box Keypad

Standard Features

- On-Demand® Defrost Algorithm
- Remote Keypad (100 ft) w/ buzzer- J-Box
- Display Update Delay
- Configurable Inputs and Outputs
- Pump Down feature (fan on)
- Evaporator Fan Cycling
- Auto-On/ Off Light timer / Manual light switch
- Blast Chill Mode (with optional product probe)
- Energy Saver mode SetPoint shift (up or down) with auto time out

Supervisory Controls

Complete facility control made simple

Control | Controlled facility | Facility insight

For retailers, providing fresh, quality food while maintaining a convenient shopping experience for their customers is a constant challenge. It means keeping close watch over every store system and piece of equipment impacting that experience — from refrigeration and lighting to heating and cooling. Emerson's family of Supervisory controls delivers the right control system and power for every operation and enterprise.

Supervisory controls, a flexible facility control platform, manages refrigeration, HVAC, lighting and other critical equipment and systems. It also collects data on important performance indicators, including refrigerated case temperatures, energy usage and HVAC discharge and space temperatures, so store managers can quickly respond to issues that may impact the customer experience and food safety.

While powerful and feature-rich, Supervisory Controls are still easy enough to use at the local levels, giving store managers and service technicians enterprise-level visibility to systems and equipment through a simple, intuitive interface.

Supervisory Controls are optimized for use with our Connect+ Enterprise Management System and can also seamlessly connect to Emerson's ProAct™ Services to diagnose alarms, resolve problems, and maintain systems .

White-Rodgers™ Electrical Control Valves

EX valves from White-Rodgers are stepper motor designed to ensure stable operation at low condensing pressures. The valve seat and slider are made of solid ceramic for long life, low operating force and low internal leak rates. The positive shut off function and fast response time eliminate the need for an additional solenoid valve. The tear drop shape of the ceramic slide enables linear capacity characteristics between 10% and 100% maximum capacity.

EXD-SH1, EX4-EX8 Stepper Motor Driven Valves

Control valves EX4 ... EX8 for capacities from .5 to 290 tons. (R-410A @ to=+4/tc = -36F)

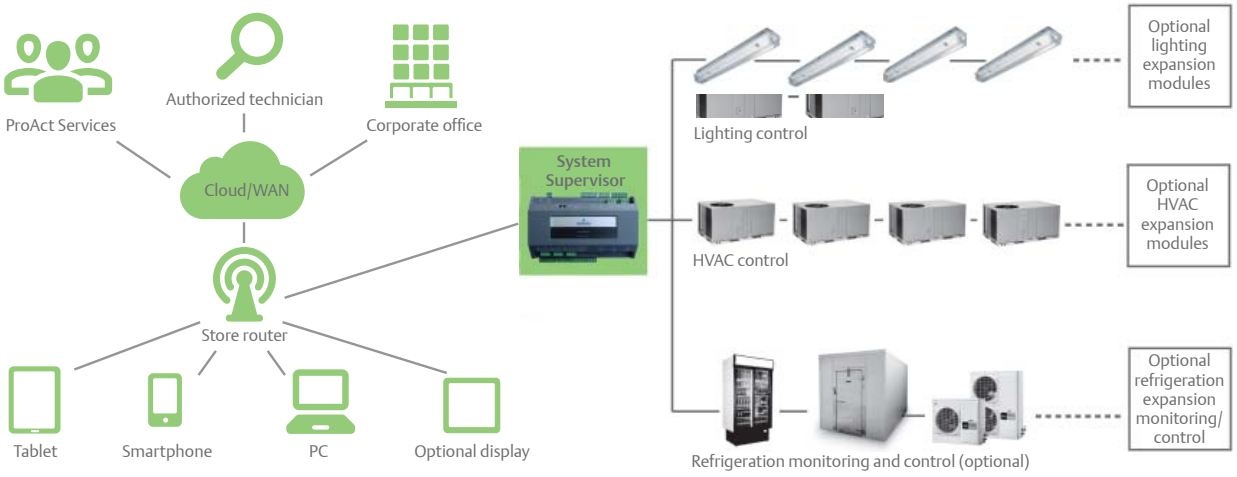
Stepper Motor Controller EXD-U

Superheat Controller EC3-X33 with built-in backup battery and display unit ECD-002

White-Rodgers Electronic Temperature Control

The 16E09-201 from White-Rodgers is a single stage control that utilizes a SPDT relay to achieve output and provides superior temperature control for refrigeration or heating applications.

- Multiple input voltages - 120/208/240 Volts AC
- Adjustable differential settings - 1° to 30°F
- Broad set-point range - 40° to 220°F



Site Supervisor connects with a number of 3rd party devices. For a complete list of these devices please visit Emerson.com/RetailSolutions

Emerson System Protectors

When it comes to the refrigeration systems you install and maintain, what matters the most? It's keeping them running at peak efficiency. Keeping your reputation intact and your customers satisfied. It's the kind of protection you can only get from Emerson. Our EK filter driers, HMI hermetic moisture indicators, along with many other high-performance products, provide you with a total package that delivers more reliable and longer lasting protection from moisture and contaminants.

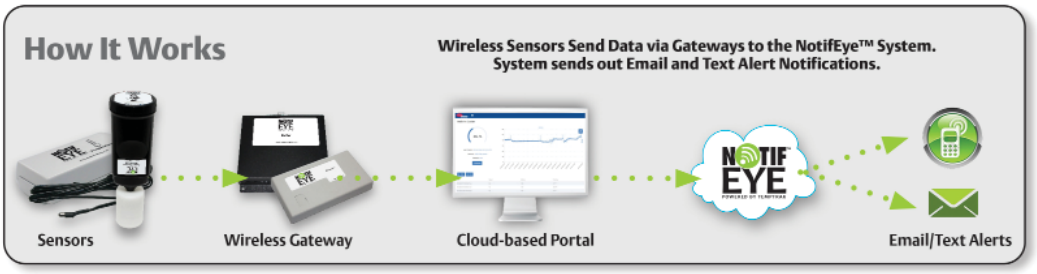
Product	Application	Features
 **Liquid line filter drier (EK)**	• Compacted bead filter drier that provides long-lasting protection from moisture and contaminants • Premium universal replacement for CFC, HCFC and HFC	• High moisture and acid removal capacity • Optimized to use with HFC refrigerants and POE lubricants • 680 psig maximum working pressure • 20 micron outlet pad for maximum filtration
 **Steel liquid and suction filter drier (STAS)**	• Replaceable core filter drier for CFC, HCFC and HFC refrigerants • Ideal for use in large commercial air conditioning and refrigeration systems	• Slotted cover/unique internal hardware for ease of installation • Full flow fittings for low pressure drop • R-410A rated models available
 **Brass take-apart suction line filter drier (BTAS)**	• Replaceable core filter drier for suction line service • Ideal for commercial refrigeration applications	• Corrosion resistant brass body with stainless steel bolts • Full flow fittings for low pressure drop • Filter and filter drier cartridges available
 **Filter drier cores and filters**	• Universal replacement cores and filter cores to remove moisture, acid, and debris from the system • For use in Emerson shells and other take-a-part type filter drier shells	• Water capacities to suit specific system conditions • Exceptional acid capacities for normal system protection, or to clean up after a compressor burnout • Activated carbon blend for soluble contaminant and wax removal (W-HH Series)
 **Hermetic moisture indicators (HMI)**	• A unique high accuracy moisture indicator for CFC, HCFC, and HFC refrigerants • Designed to accurately determine the moisture content of a system's refrigerant	• Highest sensitivity moisture indicator available provides best protection • Hermetic, leak-free construction eliminates leaks and refrigerant loss • Single indicator for all common refrigerants • Wide angle viewing/high visibility window for easy monitoring

Cooper-Atkins™ NotifEye™ Wireless Monitoring System

The NotifEye monitoring system eliminates the time and expense of manual monitoring. NotifEye sensors can be easily mounted in any location, wirelessly monitoring temperatures against preset conditions that are defined by the user and foodservice industry today – especially when relating to food safety. No longer will you need to visit and record temperatures of equipment manually.

NotifEye™ is a low-cost wireless solution that is self-installable and ready to use out-of-the-box. The online portal can also be used to display data from certain wireless products using Bluetooth® technology to allow digital integration within the Cold Chain.

- Refrigerator/Freezers
- Walk-ins/Reach-ins
- Prep Areas
- Dry Storage
- Salad/Deli Bars
- Steam Tables
- Open Air Cases
- Hot-holding Cabinents

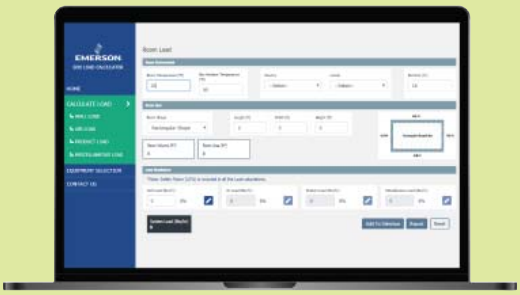


Box Load Calculator

This new tool allows you to calculate a room load and select equipment based on the calculated load or known load value. The Box Load Calculator is web-based – which means no downloads are necessary.

This new tool allows you to select appropriate Copeland™ condensing units to match your load – which also means there's no longer a need for a separate calculation and manual selection of equipment from our catalogs. You are also able to choose evaporators from multiple manufacturers, which makes it easy to select a complete equipment solution.

Access the Box Load Calculator at **Climate.Emerson.com/BLC**



Comprehensive Aftermarket Support Network

Emerson's aftermarket services offer vast support programs to support wholesalers by providing them with the products and information they need to service the installed base. These resources give contractors and service technologies the tools and inventories to support food retail operations:

- 32,000/year same-day shipments
- 850+ Authorized Wholesaler locations
- 160,000 Compressors and $6M Parts
- 540+ Copeland Technical Specialists

About Emerson

Emerson (NYSE: EMR), headquartered in St. Louis, Missouri (USA), is a global technology and engineering company providing innovative solutions for customers in industrial, commercial, and residential markets. Our Emerson Automation Solutions business helps process, hybrid, and discrete manufacturers maximize production, protect personnel and the environment while optimizing their energy and operating costs. Our Emerson Commercial and Residential Solutions business helps ensure human comfort and health, protect food quality and safety, advance energy efficiency, and create sustainable infrastructure. For more information visit **Emerson.com**.

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