

# Digital Compression Boosts Outdoor Condensing Unit Performance

*Variable-capacity modulation maximizes energy efficiencies, refrigeration reliability, installation flexibility and innovation*



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A simple and reliable solution for multiplexing applications is now available with the Copeland™ Digital Outdoor Refrigeration Unit, X-Line Series. Building on the field-proven Copeland scroll compressor and X-Line outdoor condensing unit (OCU) platforms, the digital X-Line Series delivers superior cooling and energy efficiency in small-format supermarkets, convenience stores and foodservice establishments — helping owners and operators to manage their refrigeration and food safety needs.

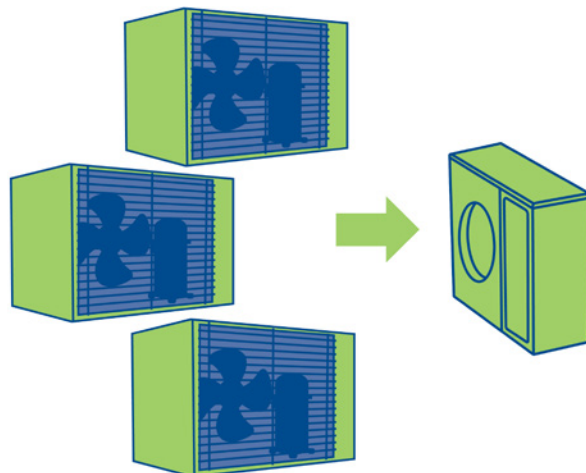
Digital modulation enables contractors to use a pre-programmed system with an alarm as well as error codes for

easy troubleshooting. This helps to reduce costly call-backs and allows for a quick and accurate diagnosis in order to keep food safe and at peak 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, food preparation tables and display cases, the digital X-Line delivers more precise, reliable refrigeration with its proven Copeland digital scroll technology and communication capabilities that can tie into any building management system (BMS).

## Fewer units to install and maintain

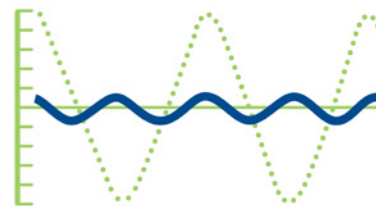
Digital compression technology means fewer condensing units are needed to install and maintain for numerous refrigeration loads, which results in fewer lines run, lower refrigerant charges and faster installation.



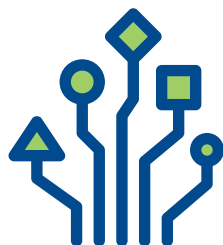
## Maximized energy efficiencies and tight temperature precision

Digital Copeland scroll compression technologies enable continuous capacity modulation from 20 to 100 percent to deliver significant reductions in energy consumption and refrigeration improvements. Variable-capacity modulation allows the digital X-Line Series to deliver:

Energy efficiency advantages	Refrigeration reliability improvements
<ul style="list-style-type: none"><li>• Substantial annual energy-efficiency improvements</li><li>• Decreased electrical load at start-up</li></ul>	<ul style="list-style-type: none"><li>• Precise setting and tight control over case temperatures</li><li>• Load matching from 20 to 100 percent</li><li>• Improved product integrity, which helps operators maximize food quality and safety</li></ul>



Simply put, the digital X-Line is engineered for contractors seeking to install more energy-efficient products to help manage food quality and safety.



### Reduced costly call-backs with advanced diagnostics

Onboard diagnostics and protection allow operators to take action to minimize product loss from equipment downtime. Errors can be quickly communicated to service technicians, and the system can make changes to protect against faults that might otherwise cause a compressor failure. Operators can expect improved reliability, an extended compressor lifespan and greatly reduced lifecycle costs.

## Lightweight and flexible installation options

The digital X-Line Series' slim profile, lightweight design and wall-mount option give operators flexibility when installing the units, even in locations with significant space constraints. In fact, digital X-Line Series units are so unobtrusive they're often mistaken for an AC split unit. This helps lower installation costs and avoid expensive system design workarounds and/or relocation issues.



### Simple and quick commissioning

A single electronic control module provides operation, protection and diagnostic features for the system. By consolidating five different controls into a single module, the unit can be set up and commissioned in a matter of minutes. A quick-start guide is supplied with each unit and is also attached to the door, showing how to quickly set the control.

## Standard features

- Pre-painted enclosures for corrosion protection
- Electronic defrost control with programmable defrost scheduling
- Brass service valves located externally for easy access
- Electronic low-pressure control for quick set-up and higher accuracy
- Receivers with pressure-relief valve, liquid shut-off valve and charging port
- Easy-to-read moisture indicator
- Variable-speed permanent split capacitor (PSC) fan motors
- Over-sized condenser coils with additional fin corrosion protection for coastal zones
- All units are factory tested for braze joint leaks, wiring connections, electrical continuity and start-up performance
- Heated insulated receiver for low ambient operation

## What's inside

### Heated and insulated receiver

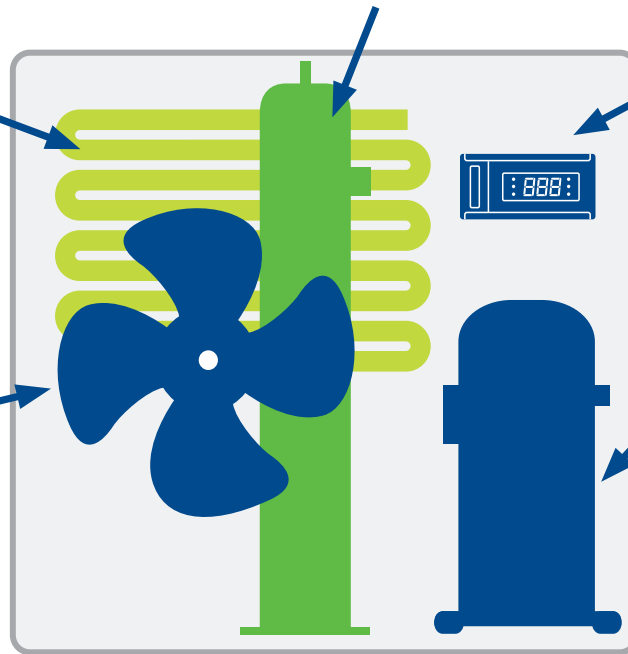
- Allows operation in low ambient temperature situations

### Larger condenser coils

- Increase energy efficiency
- Corrosion-resistant copper tube and coated aluminum fins

### Variable-speed fan motor control

- Contributes to quiet operation
- Provides efficient head pressure control



### Electronic controls

- Offer greater reliability than traditional mechanical controls
- Avoid nuisance service calls
- Allow technicians to diagnose issues quickly and accurately

### Copeland scroll digital compressor technology

- Based upon field-proven Copeland Scroll design
- Provides the most reliable, highest-efficiency compression available
- Available in 3 to 6 horsepower

### Digital technologies

- Variable-capacity modulation for precise temperature control
- Highly flexible load matching
- Linear power reduction relative to modulated capacity

## Diagnostic features

Onboard diagnostics provide connectivity to facility management control systems (including Emerson's Site Supervisor suite of control products) to alert owner/operators of faults and key performance indicators (KPIs).

- Over-current protection
- Incorrect phase detection
- High-pressure lockout
- Flood-back prediction
- Demand Cooling™
- Flooded start protection ("bump-start" logic)
- Discharge temperature protection
- Anti-short cycle time delay
- Digital fault code display/remote alarming
- Over/under voltage protection

