

Supervisory Control systems for large facilities



Facility connectivity and control for grocery, supercenter, retail and distribution centers

Supervisory Controls from Copeland provide building and system management, control, power and simplified operation for refrigeration, HVAC, lighting, energy, and more in large facilities. Effective deployment of supervisory controls delivers operational efficiency, cost savings, and the best conditions for customers and staff. Supervisory Controls also collect, analyze, report and communicate performance history and metrics. These include temperatures, energy usage, HVAC discharge and space temperatures and more. That means facility and enterprise managers can quickly respond to issues that may impact the customer experience, food safety, and operating costs.

Copeland Supervisory Controls benefits

Powerful control

Manage alerts, alarms, energy use, scheduling, maintenance information, advanced reporting and more.



Intuitive navigation

Easy to use with no special training required for day-to-day operation. Familiar processes and icon-based navigation make operations a breeze.



Priority actions

Priority alerts are visible for immediate attention. Be informed anywhere with e-mail and text alarms for faster resolution and control.



Simplified setup

Manage control inventory set-up in one location, simplifying and accelerating the installation and start-up process.



Graphic scheduling

Click-and-drag on the time chart to set schedules. Easy to set-up, fast to duplicate, and simple to change schedules – with a quick glance and a few clicks.



Fast response

Act quickly, with detailed information available instantly in simplified screens.



Mobile optimized

Access and operate from almost anywhere. In addition to wall and panel-mounted touch-screen displays or standard desktop screens, authorized users can fully access the Supervisor's control details and alarms from IOS and Android phones and tablets.



Data management and security

Copeland supervisory controls help you manage information, user access and other security locally, on your network or through the Copeland cloud.





Improved file management

Backup, restore, update firmware, install or remove files, and access the list of applications, all from one convenient screen. SD and USB ports make local back-up and restore fast.



User-friendly user interface

Enhanced graphics, simple icons and commonly-used functions make scheduling, report viewing and screen organization easier. Customize summary views or create custom graphics using the Connect + graphical tool.



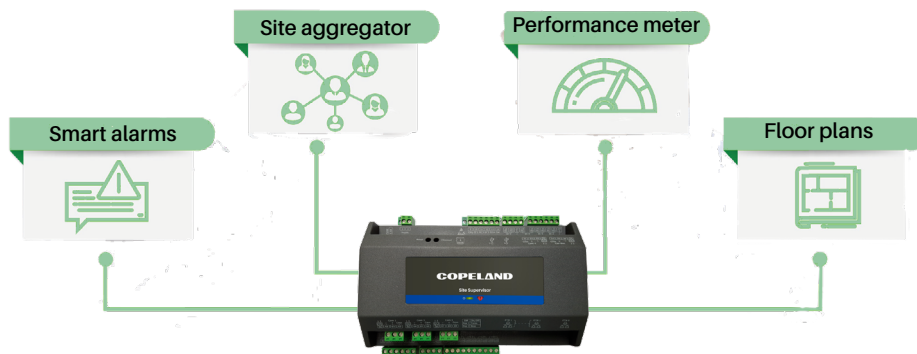
Multiple display options

Ad 10, 15, or 21 inch touchscreen displays offer different price points and user experience. Larger display screen provides better local view of Site Aggregator, floorplans, and custom graphics. Remote mount anywhere for convenience and local access where needed most.



Copeland is the No. 1 choice in supervisory controls for many of the world's leading grocery retailers, delivering a broad range of control capability.

Optimize control of your site for the future with Supervisory Controls.



Prepare building and energy management for the future in site control and power. The new Copeland Supervisory Controls platform offers building and refrigeration control with more storage additional processing power, and new advance features that simplify and enhance site operations for the future.

The Federal Bureau of Labor Statistics show that the skilled labor shortage in qualified HVAC/R technicians is only going to increase over the next 20 years. To help our customers meet this challenge, the Supervisor

has valuable new features such as Smart Alarms, Performance Meter, Floor Plans and Site Aggregator. These new features help customers easily understand alarms and what actions to take, see at glance if their system operations are performing as expected or need attention, while bringing all data and summary information into a single convenient customizable view. By utilizing Copeland's many years of expertise in building and refrigeration control, the new Supervisory Controls platform brings the future of simplified power and site control to our customers.

Copeland Supervisory Control new features

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Smart alarms

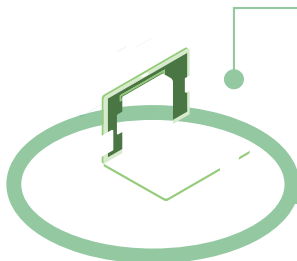
With new challenges like the skilled labor shortage, the Supervisor leverages Copeland's technology and expertise to deliver valuable new features like Smart Alarms to help meet this challenge. Prioritized and actionable alarms that are easily understood add significant value and understanding to help keep your system operations up and running and minimize down time. Utilizing Copeland's many years of experience, Smart Alarms reduces the number of alarms and helps you get to the real cause faster. Alarms occur for a good reason and being able to understand alarms and their relationship across equipment will help the user identify problem areas. With Smart Alarms the Supervisor can provide the user with a high-level explanation in plain,

easy-to-understand language, not cryptic, confusing code. In addition, Smart Alarms gives the user a prioritized list of possible causes and actions to take. Users can also take advantage of the custom message field to enter their own message. So whether you are an experienced professional or just need a little guidance, Smart Alarms can help you get to the real cause faster, saving time and truckrolls.



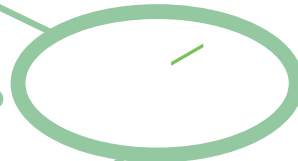
User defined messages

- Help save time and money troubleshooting alarms by adding critical information or special instructions into the alarm
- Add any pertinent information related to the alarm that you would like to convey to the user, up to 140 characters



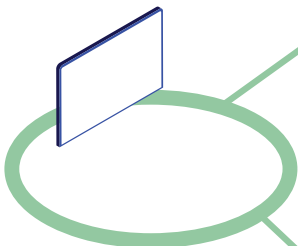
User friendly, easy-to-understand high-level explanation

- No more wondering why you are receiving an alarm and what it means
- With Smart Alarms, you will receive a high-level explanation in plain, easy-to-understand language, not cryptic secret code



Possible causes

- With Copeland's many years of expertise, Smart Alarms can make correlations between separate alarms, reducing the number of alarms and helping you get to the real cause faster



Suggested actions

- Don't know where to start? Each Smart Alarm has a prioritized list of possible actions to take, so you find the problem and get back up and running qu



Site Aggregator

In most large supermarkets and supercenters, multiple Supervisory Controllers will be used. With the Site Aggregator, users can see the status and data from multiple controllers at a site in one convenient view.

This enables quick navigation from controller to controller, so the user can watch over multiple controllers easily and with fewer clicks, from a single convenient location. Simply select the tab for the controller you want to view.

Multiple controllers in one view



Complete system in one view

- Dedicated processing power to aggregate status and data from all site controllers into one convenient view
- Site summaries, custom layouts of all controllers simplifying system view
- Navigate to any controller on the site network from a single interface
- Customize your view, drag and drop, reorganize your summary or make a new one
- Create custom categories and organize your view to best fit your needs

Add new features to existing site

- Site Aggregator comes with Smart Alarms and Performance Meter
- Simplified navigation and easier to understand
- Customizable Summaries and floorplans for meaningful system view
- Multiple site controllers, Supervisors, and E2s in one convenient view
- Web access and mobile ready for phones and tablets, no additional software needed
- Email or text alarms from both Supervisors and E2's
- Updated Security and testing to keep security in the forefront
- Fully compatible with E2E's and MultiFlex boards
- Navigate to E2 terminal mode through the Site Aggregator peer network
- Email and text alarms, alarm annunciator gathers all site alarms
- See status, program, backup, restore and upgrade firmware to any E2 on the peer network
- No additional software or UltraSite needed



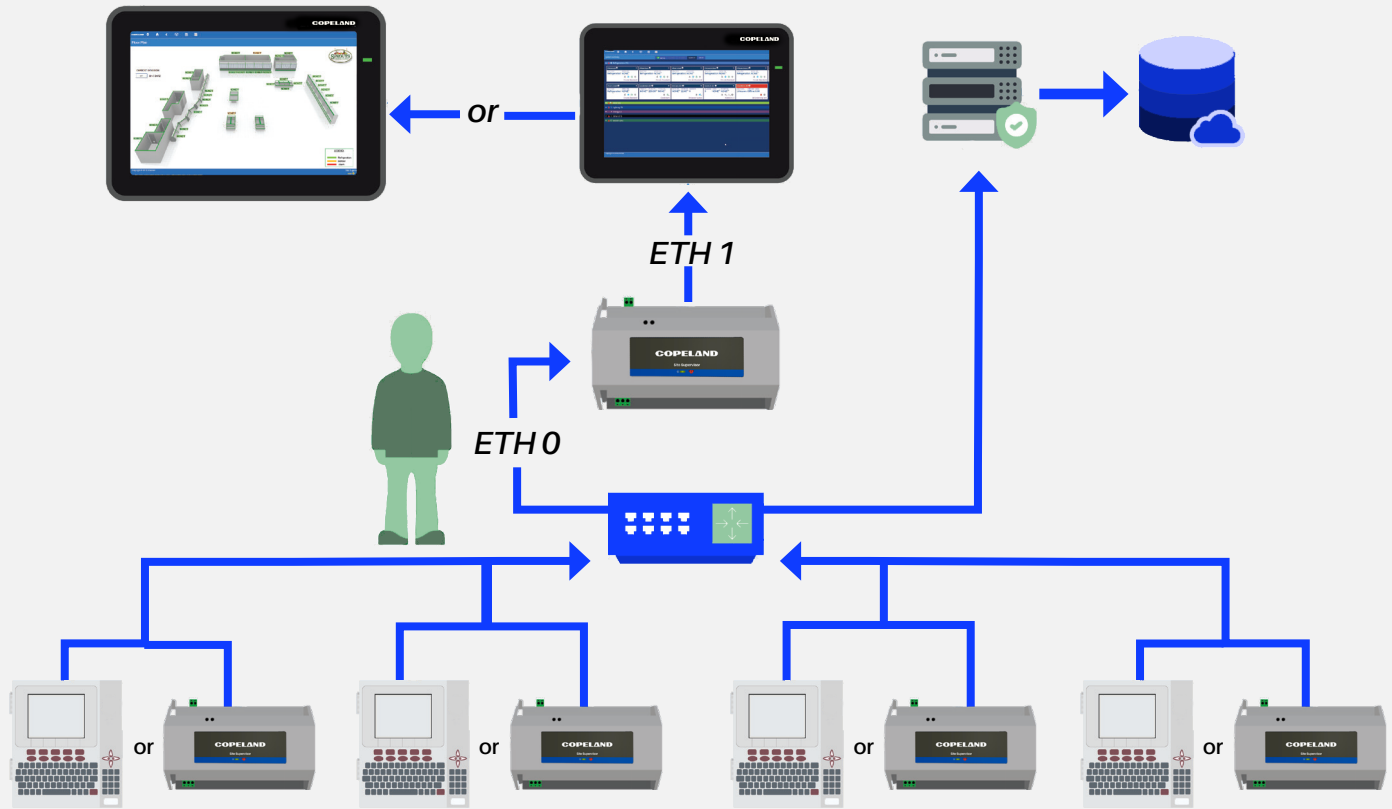
Compatible with existing E2 and MultiFlex boards

- Fully Compatible with E2's and MultiFlex boards
- View both Supervisory controls and E2 controllers
- Navigate to E2 terminal mode through the Site Aggregator peer network
- Email and text alarms, alarm annunciator gathers all site alarms
- No additional browser-based software or UltraSite needed

Add Site Aggregator to Existing E2 Site

- Compatible with existing E2 and MultiFlex boards
- No need to remove existing E2's or I/O boards
- Aggregate E2 data into custom summaries or floorplans
- Navigate to E2 terminal through the Aggregator
- Add new Supervisor features to existing site





- Add to existing site, no need to remove E2's
- Compatible with existing E2's and I/O boards
- Added security updates quarterly
- Mobile ready, table, phone or PC
- Web access gateway to all controllers
- No additional software needed
- Aggregates E2 data into one custom view or floorplan
- Alarm annunciator gathers all site alarms
- Email and text alarms

Performance meter

Access to real time performance data can help reduce maintenance costs and alert store managers to potential food safety issues. Performance meter for refrigeration cases and circuits highlights the information needed

for action and resolution so store managers can quickly respond to issues that may impact the customer experience and food safety.



Simple performance indicator

- Quickly recognize whether your entire site is performing as expected
- Compares operational performance in relation to a desired setpoint
- Provides a red, yellow or green indicator which takes into account deviations above and below setpoints, excluding defrost cycles

Easily identify fixture performance

- Individual fixture performance rolls up into higher performance levels
- For example, case performance rolls up into circuit performance, so it is simple to recognize the worst performing case in the circuit



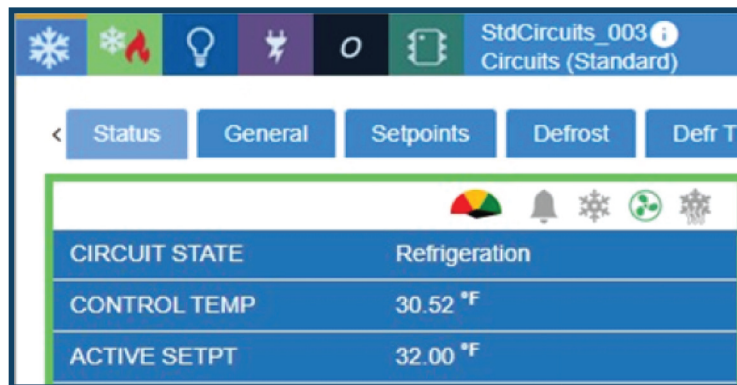
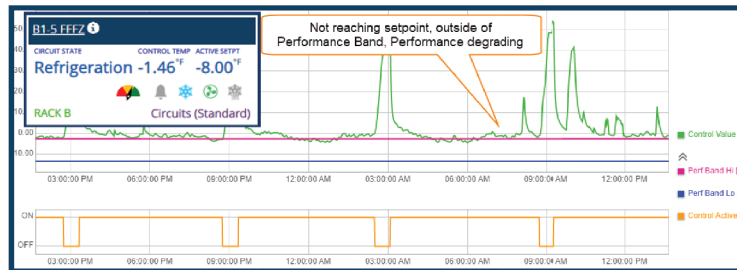
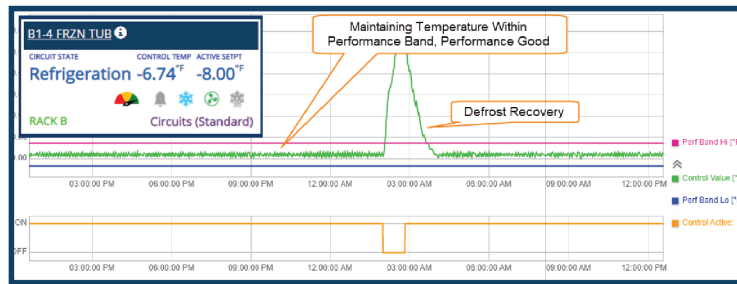
Multiple data options

- View the performance data in a graph
- Download the data for detailed analysis

Performance history

- Up to 13 months of performance data is available for download for seasonal performance comparison
- Download the performance data in a .CSV file to create reports, filter and modify the data as needed





Floor Plans

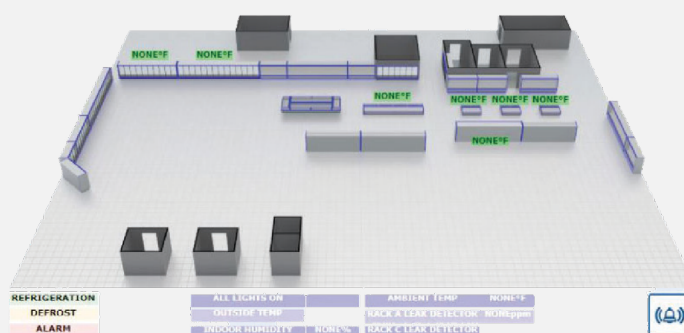
Floor Plans is a new feature to help you easily view alarms in each device you are monitoring, see specifically where the alarm is located and monitor the entire store in one view. Using 2D and 3D visualization, users can see the detailed store layout and arrangement of equipment. Floor Plans is designed for Connect+

or for any non-technical user, so they can see and respond immediately to the alarm and warnings shown in the floorplan. It saves time by enabling users to monitor multiple devices in one view. Floor Plans can be accessed through a web browser, mobile, and wall and panel-mounted touch-screen displays.

Floor Plans can view and monitor:

- Refrigeration system monitoring
- HVAC control
- Lighting
- Energy usage control

Convenience mart



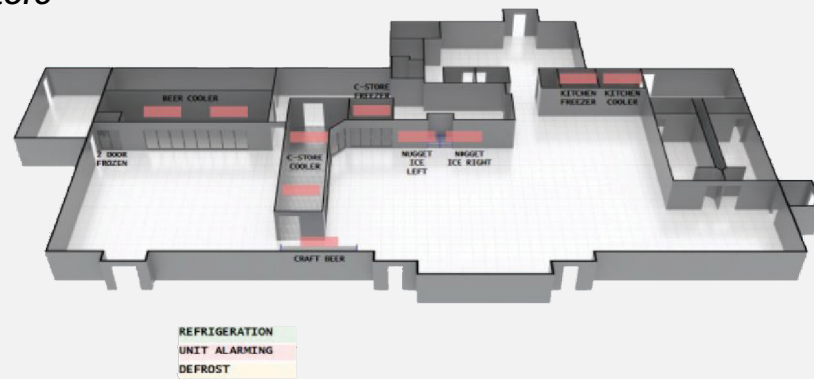
RTU01 HVAC



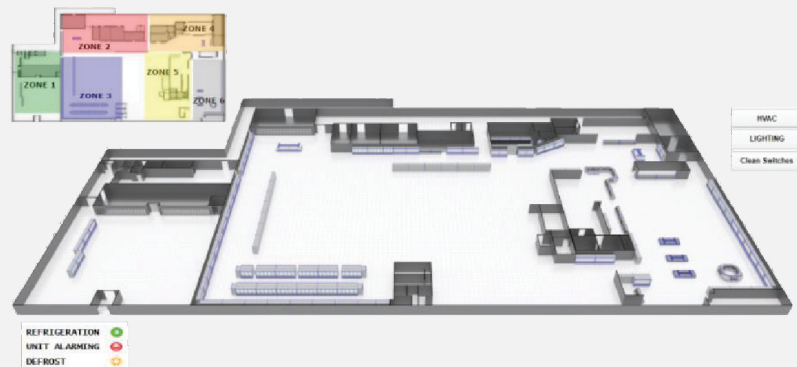
South rink chiller



Store



Store 101



Applications and capabilities

Building controls



HVAC

Retailers can group air handler and rooftop units in zones for simplified control. The system provides networked control for heating and cooling setpoints, occupancy schedules, emergency override, indoor air quality, alarms and remote unit reset, and supports management of variable speed drives.



Lighting

The system combines advanced scheduling features, light level sensors and override buttons to help optimize lighting system control for floor and parking lot lighting and exterior signage.



Power monitoring

The system comes equipped with extensive demand shedding features, as well as detailed power usage logs to help retailers spot trends and optimize facility operations. In addition to kWh, retailers can use Copeland's energy meter to access a variety of attributes including power quality, maximum demand, power factor, phase loss, over current, over voltage and accumulated usage.

Advanced controls



Multiflex boards

Multiflex boards provide a flexible I/O system with analog and digital inputs supported, as well as relay and analog outputs.



Graphs

The system displays status graphs for a variety of log groups to indicate historical patterns and issues.



Advanced scheduling

The system allows retailers to create advanced schedules based on occupancy and other factors to enhance energy savings. Retailers can create up to 64 schedules with 15 custom events per schedule. Additionally, holiday scheduling allows retailers to override standard time schedules with up to four different holiday schedules, each with up to 24 days for special events.

Refrigeration controls



Condensers

The system enhances the performance of both air-cooled and evaporative condensers using split condenser control and fast recovery strategies.



Suction groups

The system manages up to four compressor racks with up to 16 compressors via advanced algorithms, with a variety of refrigerants and control strategies. Sophisticated algorithms allow retailers to fine tune control strategies to achieve improved compressor life and energy savings.



Circuits/display cases

Flexible control options allow retailers to choose between standard refrigeration control and distributed case control. Both options provide temperature control, monitoring, defrost management and alarming for out-of-tolerance conditions.



Refrigerant leak detectors

The system receives immediate notification from Copeland's single and multi-zone refrigerant leak detection devices when a leak is detected in a refrigeration system. It also enables programming of multiple setpoints for each device to customize leak detection levels.



Anti-condensate heater controller

The ACC's closed-loop algorithm ensures doorframe heaters are run only when necessary to provide maximum energy savings using data from the relative humidity sensor to maximize anti-condensate control. The system contains an application that shows the percentage of heater run time to help retailers understand how much energy was conserved.

Connectivity



Third party connectivity

In addition to built-in applications, the Building Supervisor supports connection to third party equipment using Modbus.

Selecting a Supervisory Controls model

Copeland’s family of Supervisory Controls delivers the right control system and power for every operation and enterprise. Flexible software licensing options make it easy to upgrade power and performance when new

functions are needed. For new facilities, major remodels or individual device replacement, it’s easy to find the right control and model to fit your needs.

Copeland supervisory controls model selection guide

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Copeland supervisory controls to E2 cross-reference guide

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Touch-screen displays for Supervisory Controls

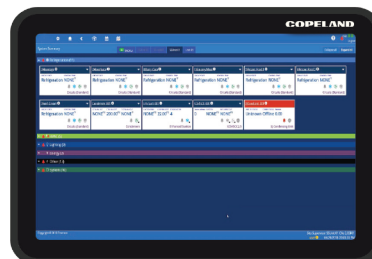
Ideal for wall and panel mounting, touch-screen displays for Copeland Supervisory Controls offer easy touch-screen access to program, control, override and run diagnostics on Copeland building and system controllers. These 21, 15 and 10-inch capacitive panels operate with a light touch and familiar features, similar to a smart phone and tablet. Yet, they are built robustly for long-life in hot, humid and high-traffic areas, making them perfect in the backroom or in public areas.

Your choice - 21-inch, 15-inch or 10-inch display

Copeland offers three models with high performance for almost any application. The large 21-inch screen optimizes image size, touch-screen functions, and on-screen keyboard size. The 15-inch or 10-inch screen delivers similar functionality in a smaller footprint, ideal for use inside panels and offering a more cost-effective option.



21-inch
touch screen display



15-inch
touch screen display



10-inch
touch screen display

Add engineered panels for efficiency, savings and safety

Engineered control panels and enclosures simplify the adoption of facility controls. Copeland panels are designed for optimized HVAC, refrigeration and lighting control. Factory built to include pre-wired and fully-tested Supervisory Controls, installation personnel simply mount

the panel on the wall then make connections to clearly marked and labeled terminals. Copeland regulatory specialists can work to confirm that the panel will meet UL certification specifications, helping avoid potential construction delays and reduce insurance risks.





About Copeland

Copeland is a global leader in sustainable heating, cooling, refrigeration and industrial solutions. We help commercial, industrial, refrigeration and residential customers reduce their carbon emissions and improve energy efficiency. We address issues like climate change, growing populations, electricity demands and complex global supply chains with innovations that advance the energy transition, accelerate the adoption of climate friendly low GWP (Global Warming Potential) and natural refrigerants, and safeguard the world's most critical goods through an efficient and sustainable cold chain. We have over 18,000 employees, with feet on the ground in 50 countries - a global presence that makes it possible to serve customers wherever they are in the world and meet challenges with scale and speed. Our industry-leading brands and diversified portfolio deliver innovation and technology proven in over 200 million installations worldwide. Together, we create sustainable solutions that improve lives and protect the planet today and for future generations.

To learn more, visit copeland.com

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