

Supervisory Control systems for large facilities



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

Supervisory Controls from Emerson™ 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.



Emerson 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.



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.



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 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

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



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.



Emerson 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 Emerson Supervisory Controls platform offers building and refrigeration control with more storage, additional processing power, and new advanced 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 support 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 a 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 Emerson'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.

Emerson™ Supervisory Controls New Features

Application	Site Supervisor Small Format SF	Refrigeration Supervisor RXS	Refrigeration Supervisor Expanded* RXSe	Building Supervisor BXS	Building Supervisor Expanded* BXSe	Combination Supervisor CXS	Combination Supervisor Expanded* CXSe	Service Replacement SR	Site Aggregator SA
New Intuitive Web UI	✓	✓	✓	✓	✓	✓	✓	✓	✓
Responsive Design	✓	✓	✓	✓	✓	✓	✓	✓	✓
Email and Text Alarms	✓	✓	✓	✓	✓	✓	✓	✓	✓
Graphical Defrost Summary	✓	✓	✓	✓	✓	✓	✓	✓	✓
File Management	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site Inventory	✓	✓	✓	✓	✓	✓	✓	✓	✓
Duplicate Application	✓	✓	✓	✓	✓	✓	✓	✓	✓
Custom User Roles and Permissions	✓	✓	✓	✓	✓	✓	✓	✓	✓
Custom Summary Screens	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ethernet, USB, SD Ports	✓	✓	✓	✓	✓	✓	✓	✓	✓
Site Aggregator	*	*	*	*	*	*	*	*	✓
Smart Alarms	*	*	*	*	*	*	*	*	✓
Performance Meter	*	*	*	*	*	*	*	*	✓
Floor Plans	✓	✓	✓	✓	✓	✓	✓	✓	✓
Floor Plans with E2 peer network									✓

* Feature licenses available in other models
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Smart Alarms



With new challenges like the skilled labor shortage, the Supervisor leverages Emerson'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 Emerson's many years of experience, Smart Alarms reduces the number of alarms and help 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



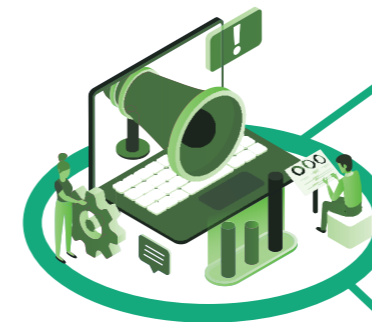
User friendly, easy-to-understand high-level explanation

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



Possible causes

- With Emerson'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 can find the problem and get back up and running quickly



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



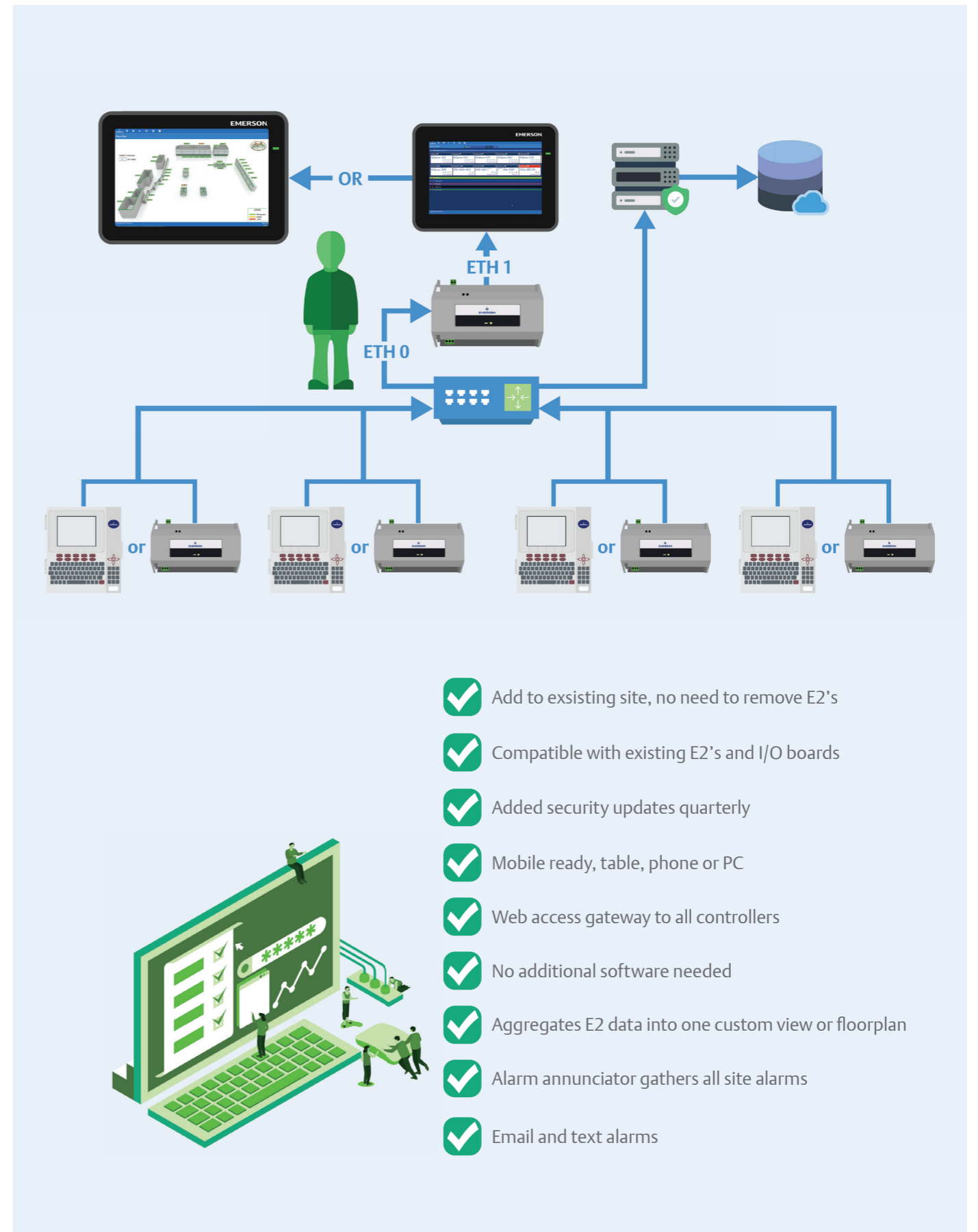
Compatible with existing E2 and MultiFlex boards

- 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

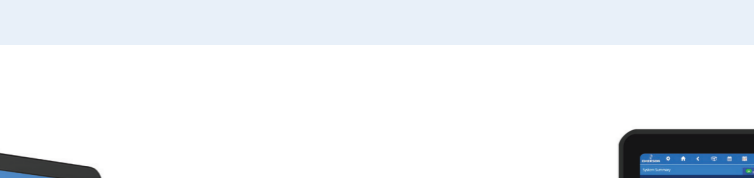
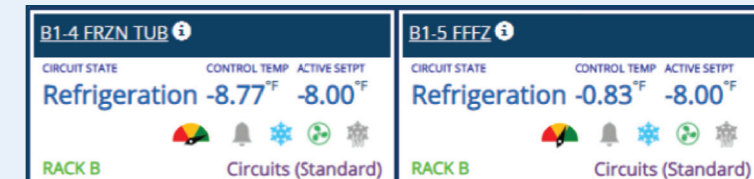
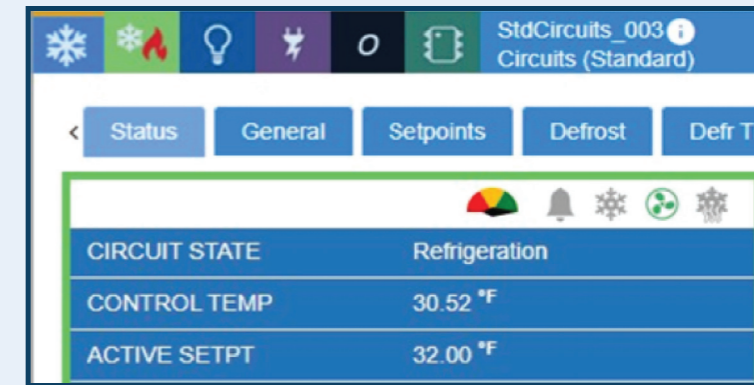
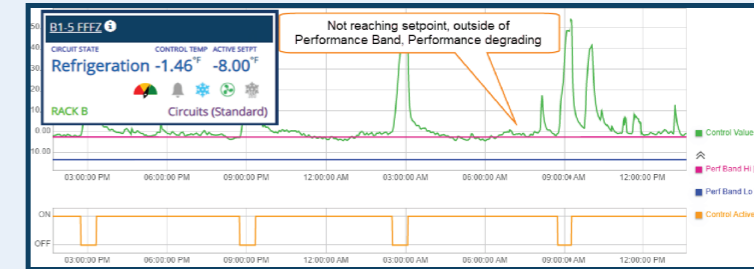
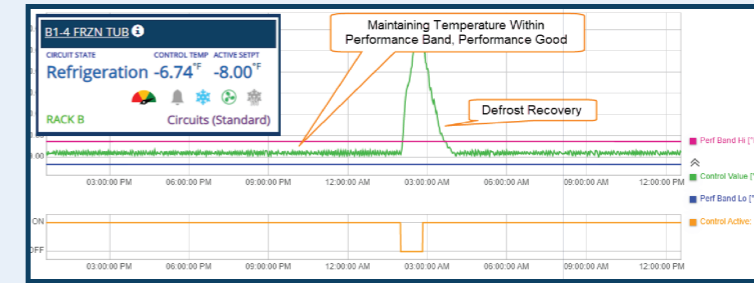
- Individual fixture performance rolls up into higher performance levels
- For example, case performance rolls up into circuit performance, so it is simple to recognize the worst performing case in the circuit

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

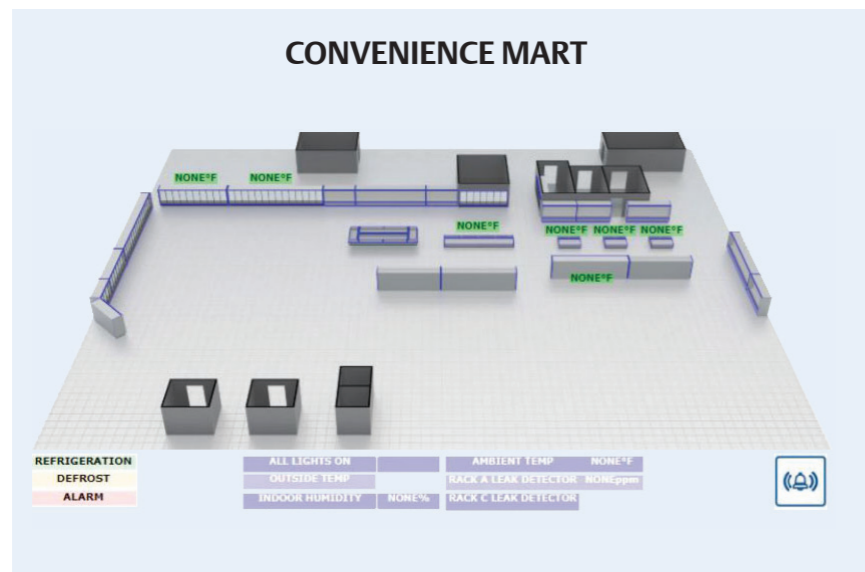


Floor Plans

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
- Lightning
- Energy usage control



Applications and Capacities

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 Emerson'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 Emerson'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

Emerson'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.

Emerson™ Supervisory Controls Model Selection Guide									
Application Guide	Site Supervisor Small Format SF	Refrigeration Supervisor RXS	Refrigeration Supervisor Expanded* RXSe	Building Supervisor BXS	Building Supervisor Expanded* BXSe	Combination Supervisor CXS	Combination Supervisor Expanded* CXSe	Service Replacement SR	Site Aggregator SA
Supermarkets									
Rack Control		✓	✓	✓	✓	✓	✓	✓	✓
Condenser Control		✓	✓	✓	✓	✓	✓	✓	✓
Refrigeration Case	✓	✓	✓	✓	✓	✓	✓	✓	✓
Convenience Store									
Lighting Management	✓					✓	✓	✓	✓
HVAC Systems	✓					✓	✓	✓	✓
Refrigeration Cases	✓					✓	✓	✓	✓
Energy Management	✓					✓	✓	✓	✓
Building Controls									
Lighting Management	✓			✓	✓	✓	✓	✓	✓
HVAC Systems	✓			✓	✓	✓	✓	✓	✓
Energy Management	✓			✓	✓	✓	✓	✓	✓
Add to Existing E2 Site									
Overlay Existing E2 Network									✓
E2 Terminal Navigation									✓
Alarm Annunciator									✓
Email and Text Alarms									✓
Custom Graphic Screens									✓
Smart Alarms									✓
Performance Meter									✓

* Expansion Pack upgrade license available (i.e. upgrade RXS to RXSe equal to E2RX400). See E2 cross-reference guide for complete details

If you are already familiar with our E2 Controllers, below is a convenient cross reference guide:

Emerson™ Supervisory Controls to E2 Cross-reference Guide								
Cross-Reference	Site Supervisor Small Format SF	Refrigeration Supervisor RXS	Refrigeration Supervisor Expanded* RXSe	Building Supervisor BXS	Building Supervisor Expanded* BXSe	Combination Supervisor CXS	Combination Supervisor Expanded* CXSe	Service Replacement SR
E2 RX300		✓						✓
E2 RX400			✓					✓
E2 BX300				✓				✓
E2 BX400					✓			✓
E2 CX100	✓							✓
E2 CX300						✓		✓
E2 CX400							✓	✓

* Expansion Pack upgrade license available (i.e. upgrade RXS to RXSe equal to E2RX400)



Touch-screen displays for Supervisory Controls

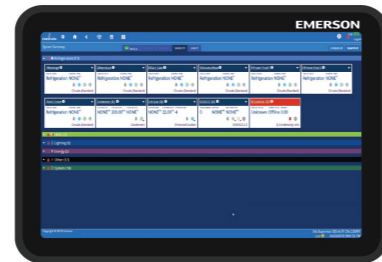
Ideal for wall and panel mounting, touch-screen displays for Emerson Supervisory Controls offer easy touch-screen access to program, control, override and run diagnostics on Emerson building and system controllers. These 21, 15 and 10-inch capacitive panels operate with a light touch and familiar features, 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

Emerson 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. Emerson 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. Emerson regulatory specialists can work to confirm that the panel will meet UL certification specifications, helping avoid potential construction delays and reduce insurance risks.

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](https://www.emerson.com)

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