Lumity™ E3 Supervisory Control

Product Spotlight Webinar
April 15, 2021

EMERSON

Product Spotlight Webinar
Introducing the E3:
The Next Generation in Supervisory Controls

Lumity™ E3 Supervisory Control

Thursday, April 15th
2 p.m. EDT / 11 a.m. PDT

Attendees will learn:

- New features and functionalities of our Lumity supervisory control platform
- How our Lumity supervisory control software brings all of Emerson's supervisory control devices under one software interface
- Why the E3 controller was designed as a true drop-in replacement of the E2
- How to gain instant visibility to all key systems, faults, statuses and alarms
- How our Lumity supervisory control platform enables control of critical systems with advanced refrigeration algorithms, building control strategies and network connectivity

Presenters:

Katrina Krites
Marketing and Business Development Manager, Food Retail
Emerson

Sam Smith
Director of Product Management, Digital Solutions
Emerson

Agenda

Katrina Krites	Solution Overview
Katrina Krites	Value Drivers and Case Studies
Sam Smith	Product Features
Sam Smith / Katrina Krites	Site Aggregator and Peer Networks
Katrina Krites	Support Services

Key Messages

- The Lumity supervisory control software platform is the foundation of the E3 and site supervisor controllers.
  - Any software enhancements are available in both platforms.

- The Lumity E3 controller can be part of a centralized or distributed control network.

- The E3 controller is the same form factor as E2.
  - **Identical** wiring holes, mounting points and vents
  - Enclosure fits into existing panel cut-out

- MultiFlex boards and IONet devices are backward compatible to E3 and site supervisor.

- The benefits of change:
  - Faster speed and higher levels of processing capabilities
  - More connectivity to upstream devices and off-site connectivity
  - User-friendly and intuitive (from navigation, setup and troubleshooting) with customizable views

Solution Overview

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LUMITY™

Providing innovative products and software solutions for each step of the temperature-sensitive supply chain that empower our customers to protect the quality and safety of medicines, vaccines and food.

EMERSON™

Lumity Digital Building Solution Portfolio

Food Retail

Foodservice

ProAct™ Services

Connect+

Data Management

Food Monitoring

Transformative Wave

Cargo Oversight

Emerson

APIs

INSIGHTS THROUGH DATA

Integrated and Optimized Solutions

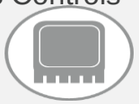
Controls and Electronics

System Controls

Rack Controls

Case Controls

Electronic Controls



PLUG-AND-PLAY INTEGRATED SOLUTIONS

Devices

Scroll Compressors

Reciprocating Compressors

Condensing Units

Industrial Compressor Units

Temperature Monitoring Devices

Pressing

Cold Chain

Lumity Supervisory Control Platform is Comprised of Common Software With Multiple Hardware Embodiments

Software

Lumity supervisory control software
is the same for E3 and site supervisor controllers.

Hardware

Lumity Site Supervisor

Lumity E3 Supervisory Control

Lumity Supervisory
Control Accessories

Lumity Supervisory Control Platform Provides Flexibility to Meet Diverse Application Needs

Site Supervisor

E3 Supervisory Control

New Store

- Cost flexibility
- Ideal for space-constrained areas
- Flexible display
- Flexible mounting

Remodel

- Built-in display
- Flexible to add additional display
- Form factor replacement for E2
  - Same:
    - Grounding
    - Mounting
    - Communication
    - Power connection
    - Software features

E2 Service Replacement

Not Ideal

E2 Typically Installed Within Panels

E3 Controller is a Drop-in Replacement for the E2 Product

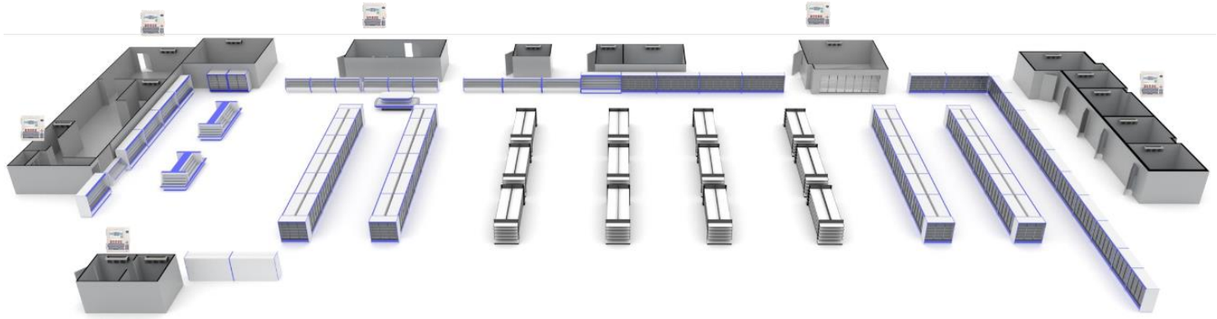
- **True E2 Drop-in Replacement**
  - **Identical** wiring holes, mounting points and vents
  - Enclosure fits into existing panel cut-out
- **Updated Integrated Display**
  - **Larger** 10” capacitive color touch-screen
  - User-friendly interface with on-screen keyboard
- **Equivalent COM Port Configuration and Power Connections**
  - **Total of four COM ports** for connected devices with two isolated COM ports
  - Easily swap out an E2 with no need for rewiring
- **Fully Backward Compatible With MultiFlex and IONet Boards**

Supervisory Control Capabilities

Building Controller (BX)

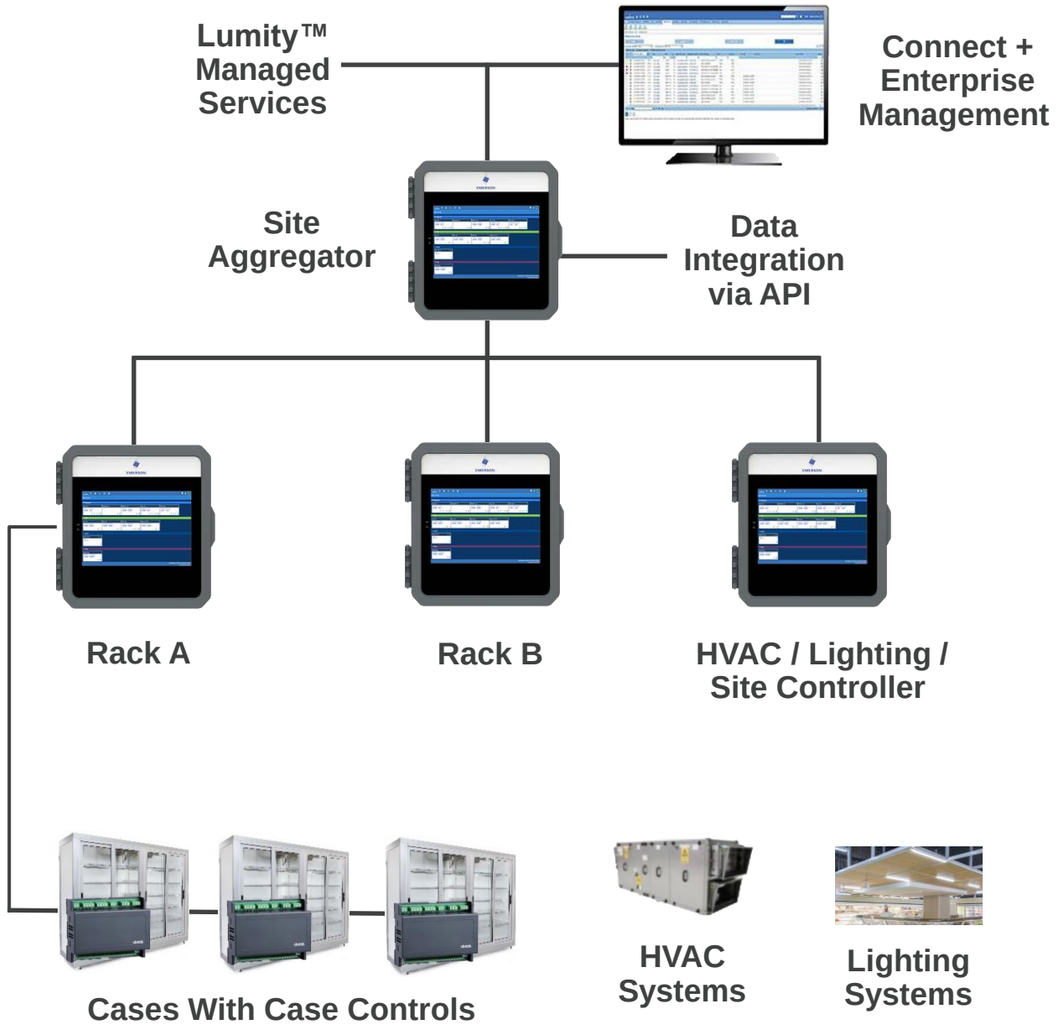
Refrigeration Control (RX)

Combined Building and Refrigeration Control (CX)

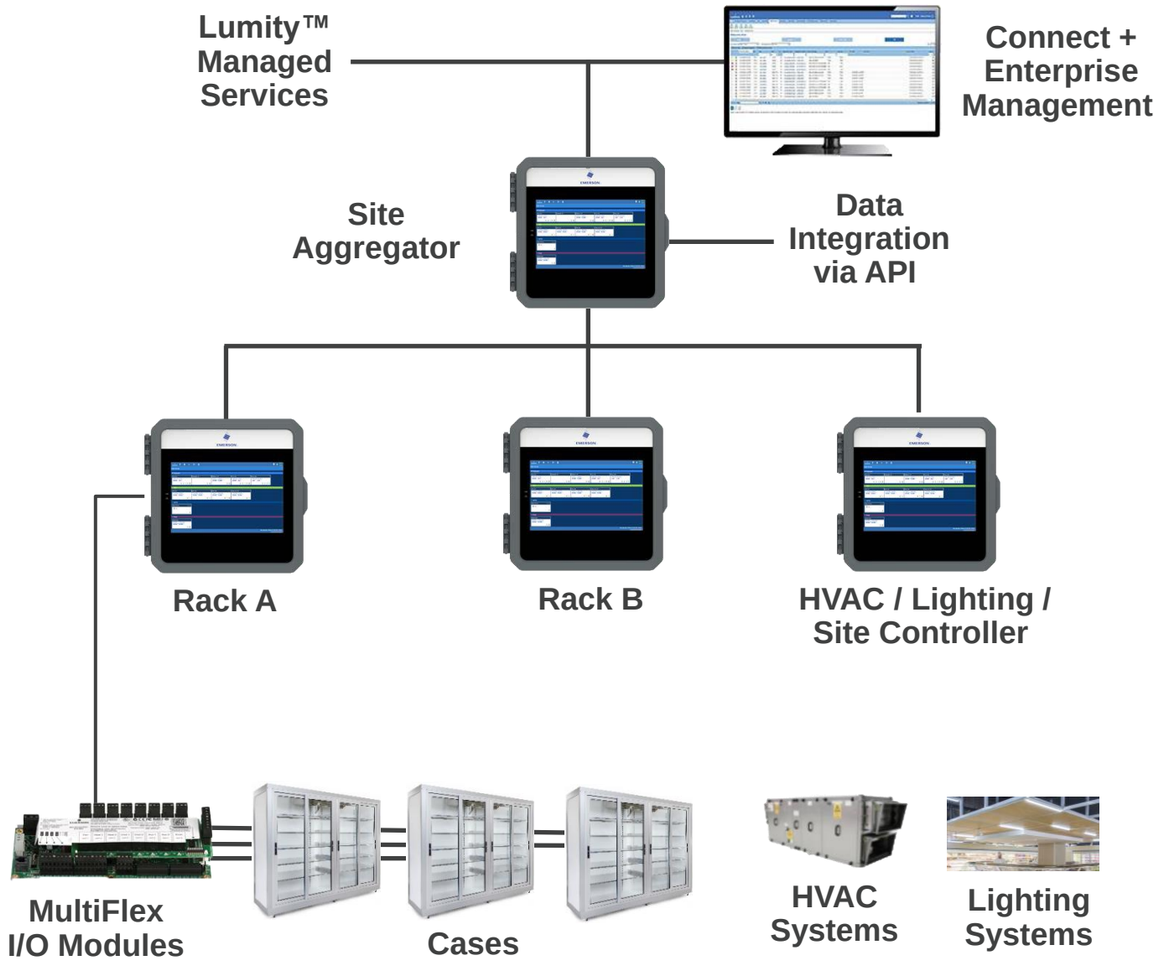


Site Aggregator

Distributed Control Architecture



Centralized Control Architecture



Customer Values and Case Studies

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Benefits of E3 Controller per Customer Values

OEMs

value applied cost,
minimal inventory
and fast troubleshooting

Contractors

value ease of use and quick troubleshooting

End Users

value efficiency, visibility and actionability

	OEM	Contractor	End User
Backward Compatibility	✓	✓	✓
Remote Access	✓	✓	✓
Customizable Graphs	✓	✓	✓
Smart Alarms		✓	✓
Intuitive Navigation	✓	✓	✓
Scalable	✓		✓
Data Accessibility and Integration	✓	✓	✓
Control		Wizards/prompts combiners + advanced control	Power Monitor for optimal control
Other Benefits	Ease of use and integration	Minimal training required, same form factor as E2, Site Aggregator	Floor plans for store layout, graphic scheduling, data integration into larger ecosystem

North Eastern Refrigeration Contractor

Problem:

Supermarket chain wants to upgrade aging out controllers and software with new modern controls with web-based access.

Solution:

Replace aging RMCCs with Lumity Supervisory Control Platform.

“I am very pleased with how much easier it is to train my people and customers on this new system. I will buy it just based on the new user interface and how well it works on mobile phones and tablets. This is what I have been waiting for. ***We will be using this platform going forward on all of our installations.”***

St. Cloud Refrigeration

Problem:

Calumet Colosseum needs significant upgrades and new control system for an NHL preseason game.

Solution:

Provide easy-to-use interface with remote capabilities from a mobile device.

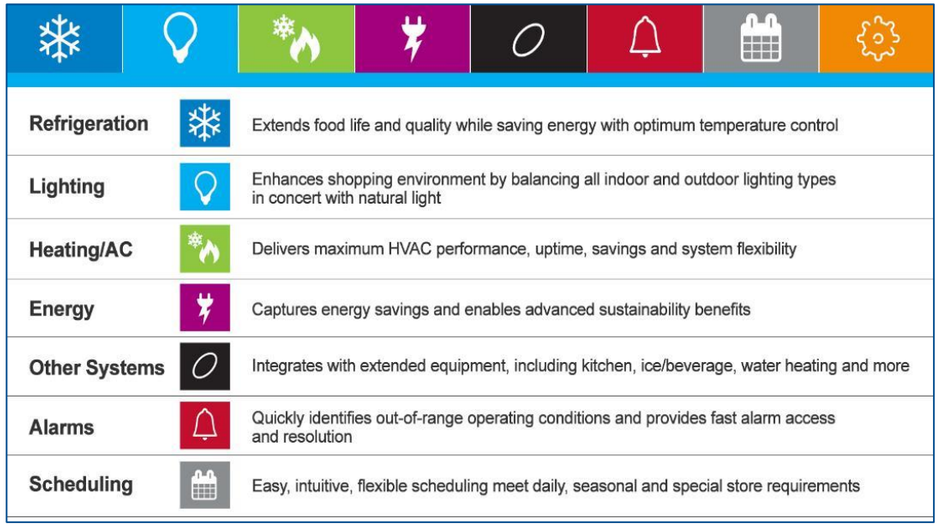
"The NHL rep responsible for the ice was very impressed with the easy access to the software and the ability to change the system setpoints from his phone and receive a text if there was an issue. Many times, I saw him check the temps and pressures on the chiller with his phone. Needless to say, I am really happy that we were able to make such a positive impression with the NHL."

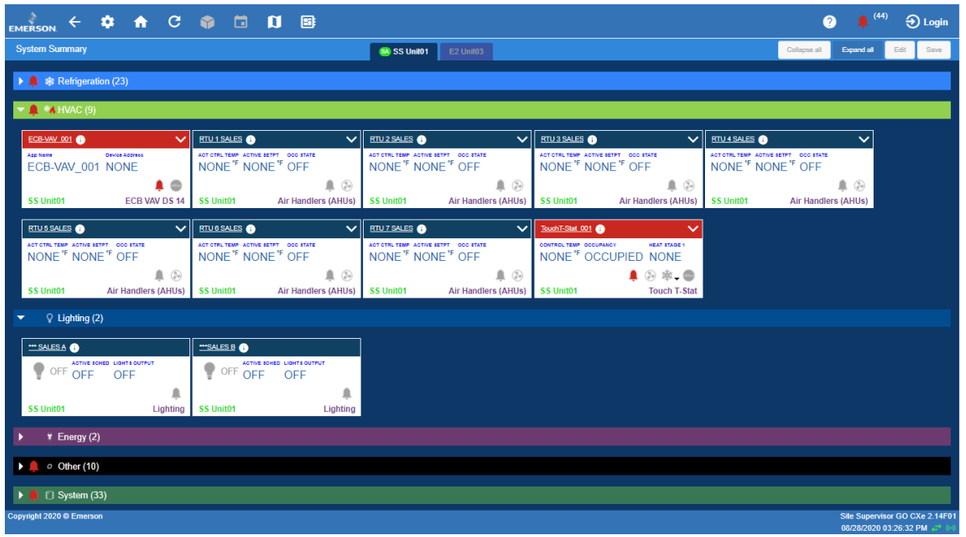
Product Features

Lumity Supervisory Control Software Overview

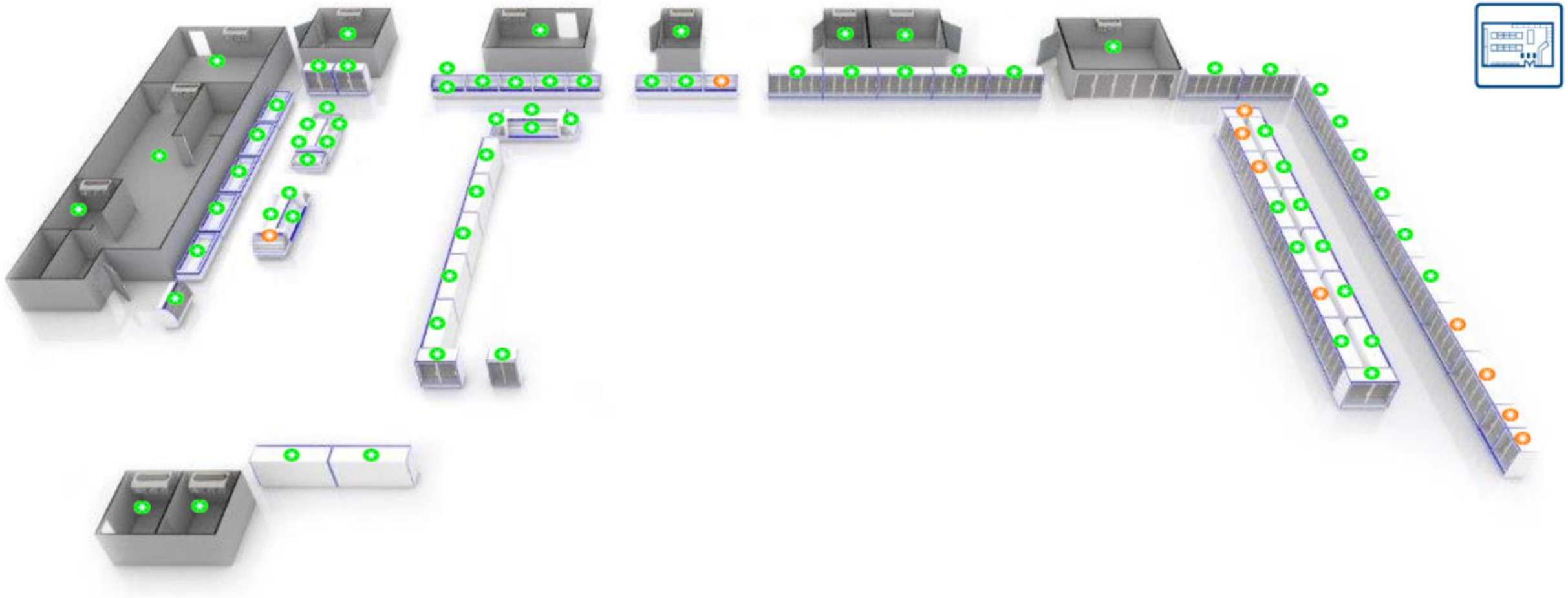
A Simplified and Intuitive User Interface

- ***Intuitive Navigation:*** Easy to use with no special training for day-to-day operation. Familiar processes, icon-based navigation and common toolbar.
- ***Priority Actions:*** Highlights the information needed for action and resolution. Priority alerts are visible in red for easy recognition, visibility and action.
- ***Fast Response:*** Store managers and technicians can act quickly, with detailed information available instantly in convenient drill-down screens.
- ***Mobile-Optimized:*** Access and operate from anywhere. In addition to the integrated touch-screen display, authorized users can access the system on all types of mobile devices.
- ***Secure Data:*** Options to manage locally, on your network or through ProAct Services.





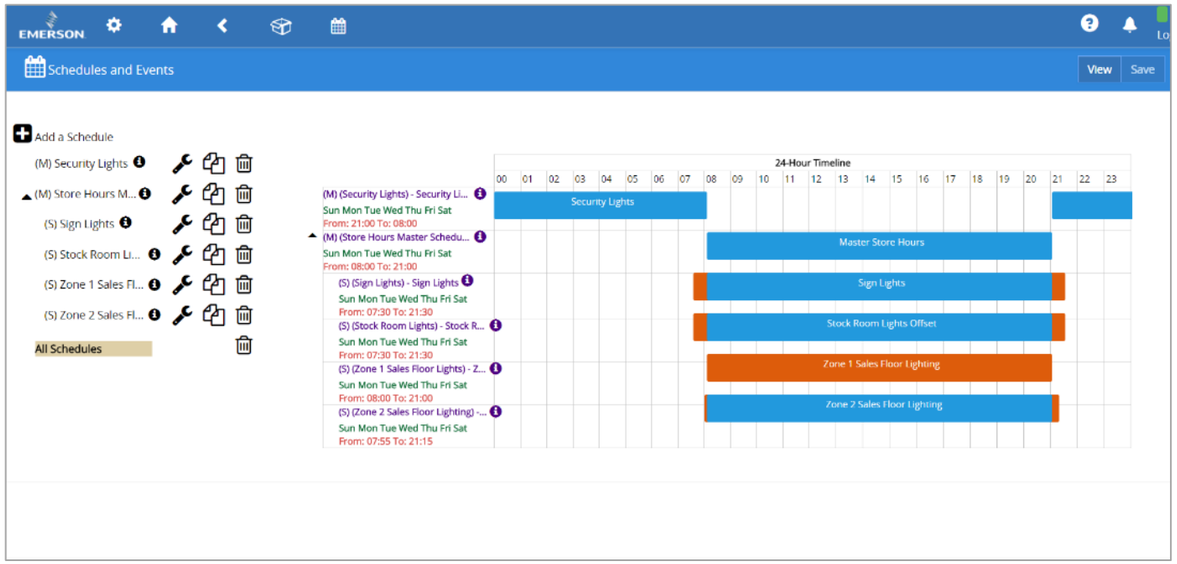
Floor Plans



Graphic Scheduling and Inventory Setup

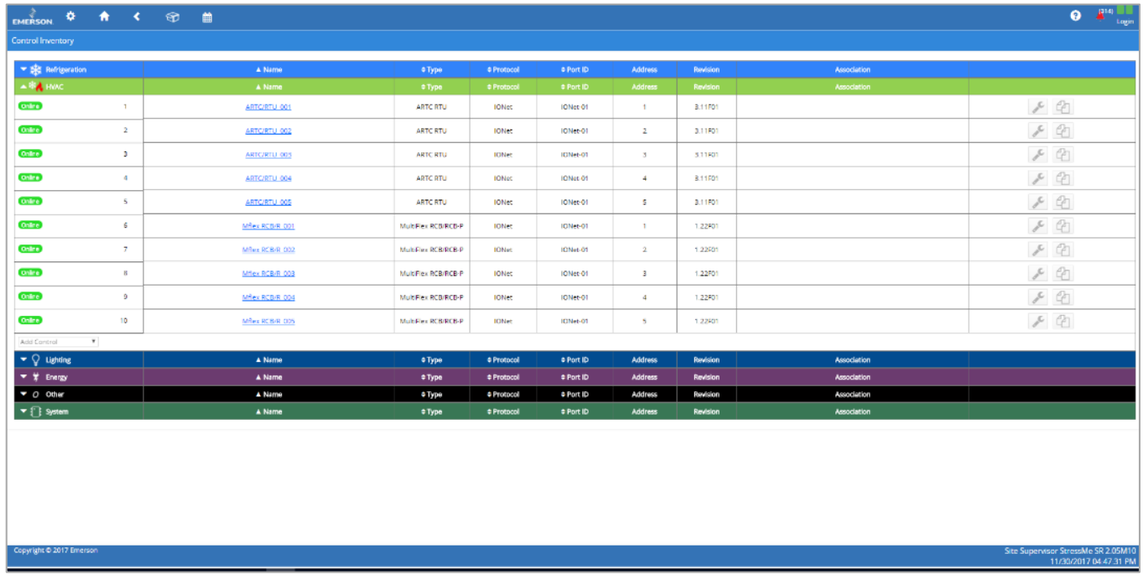
Graphical Schedule

Quickly see and understand schedules and events with the graphical scheduler. Create, edit, duplicate and delete schedules in one convenient place. Scheduled events appear as visual bars.



Control Inventory Setup

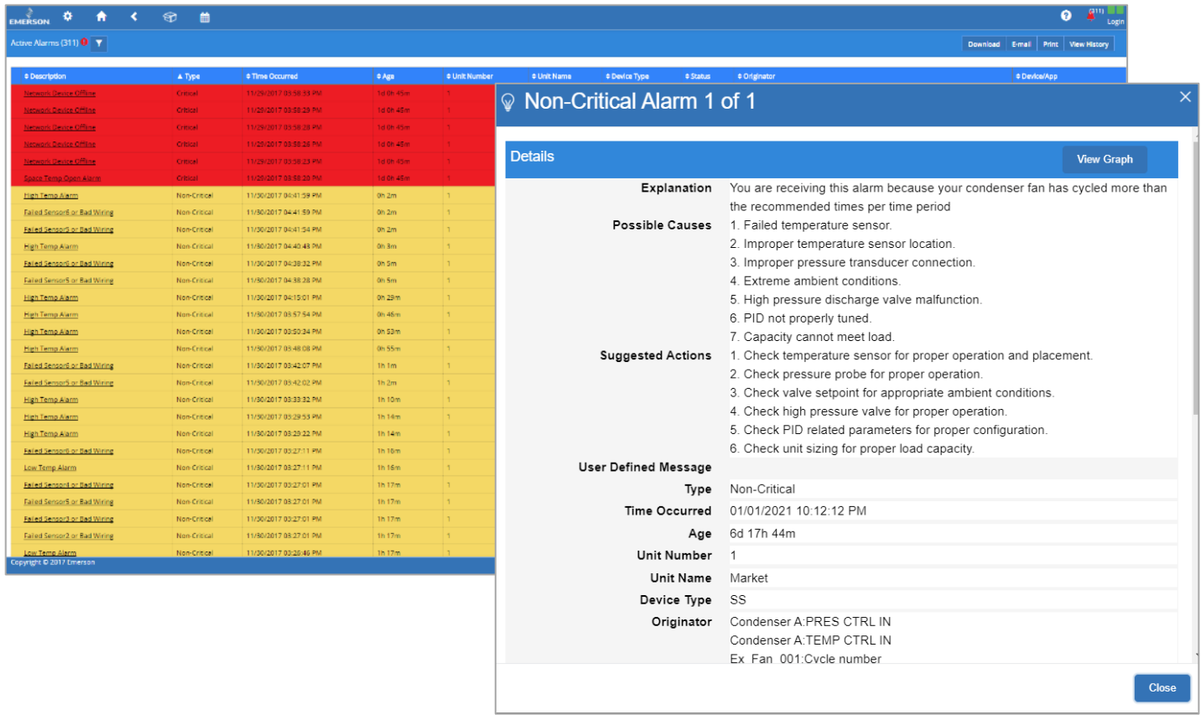
Add, remove, duplicate and rename applications, configure com ports, set device addresses, view network status, and make associations in one convenient place.



Faster Troubleshooting via Smart Alarms and Custom Graphing

Smart Alarms

Provides high-level explanation, possible causes and suggested actions to take. Can enter custom user-defined messages.



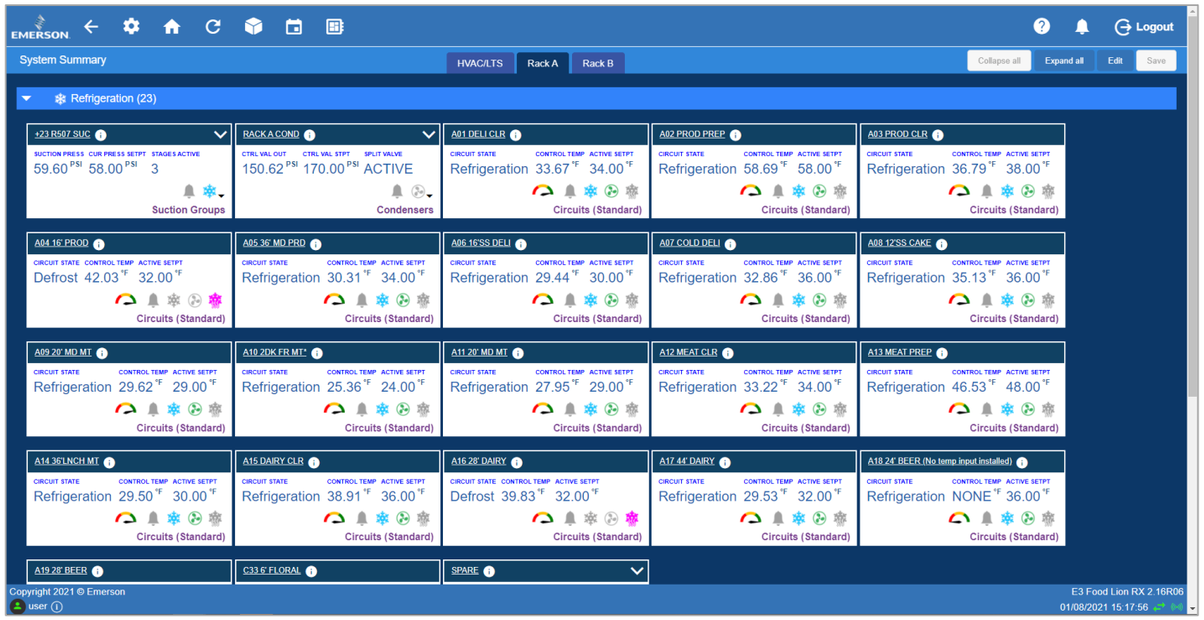
Graphical System Status

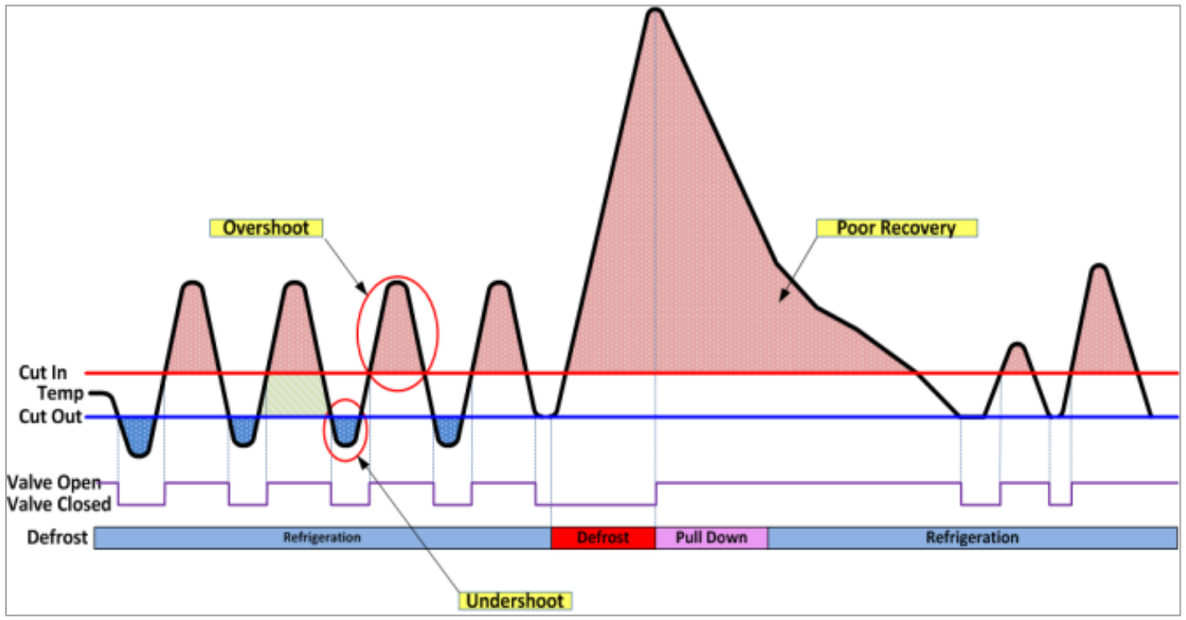
Monitor system status and performance visually with graph-based reports that identify historical patterns, trends and issues.

Benefit: Faster Troubleshooting, Saving Time

Performance Meter: A Simple Way to Recognize Site Performance

Case performance rolls up into circuit performance. Graph or download performance data for detailed analysis.
Up to 13 months of performance history for seasonal performance comparison is available.





Peer Network and Site Aggregator

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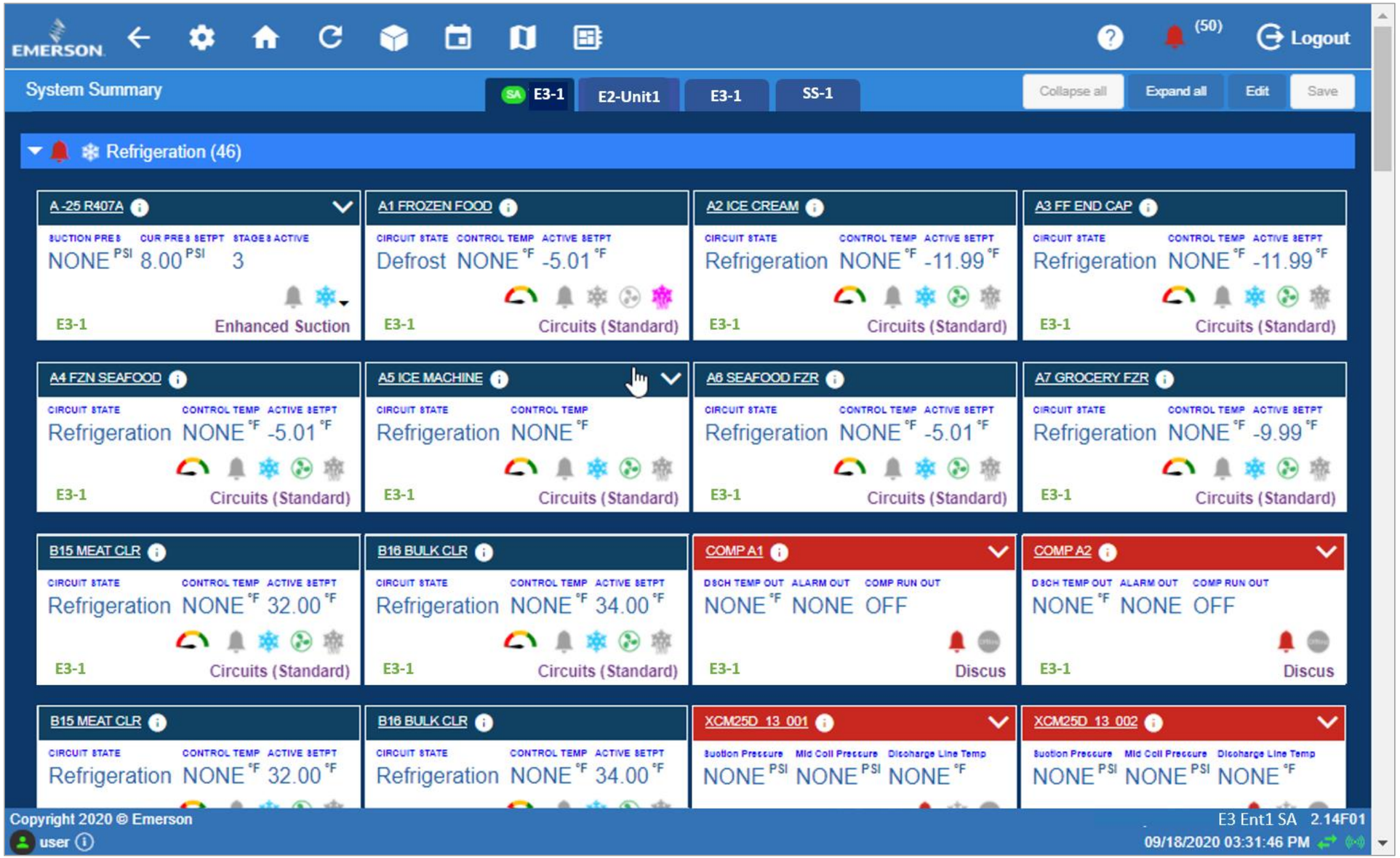
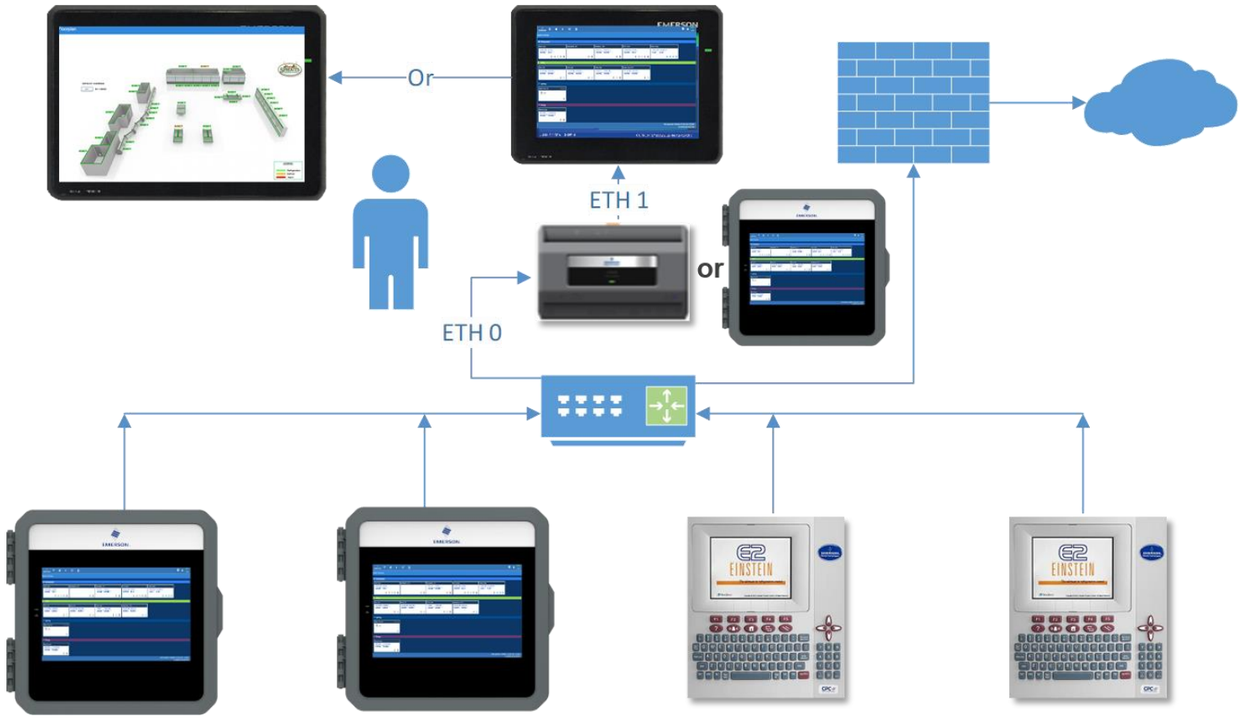
Visibility to Peer Controllers on the Network



Visibility to Peer Controllers on the Network

New Site Aggregator Model Aggregates Store Assets Into a Single Floor Plan

Site Aggregator Typical Network

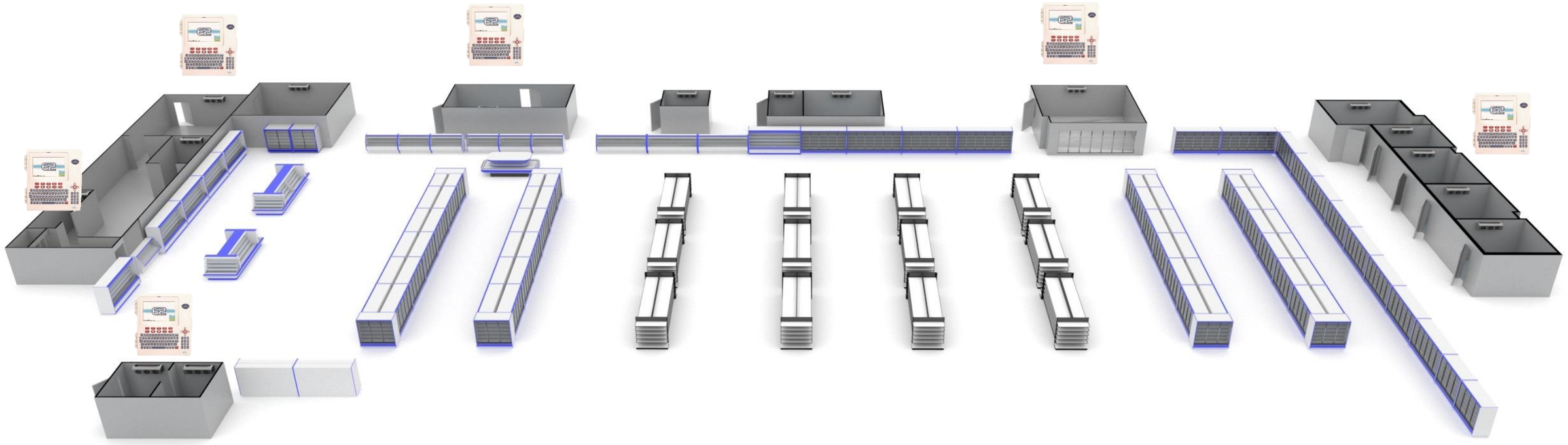


Benefits

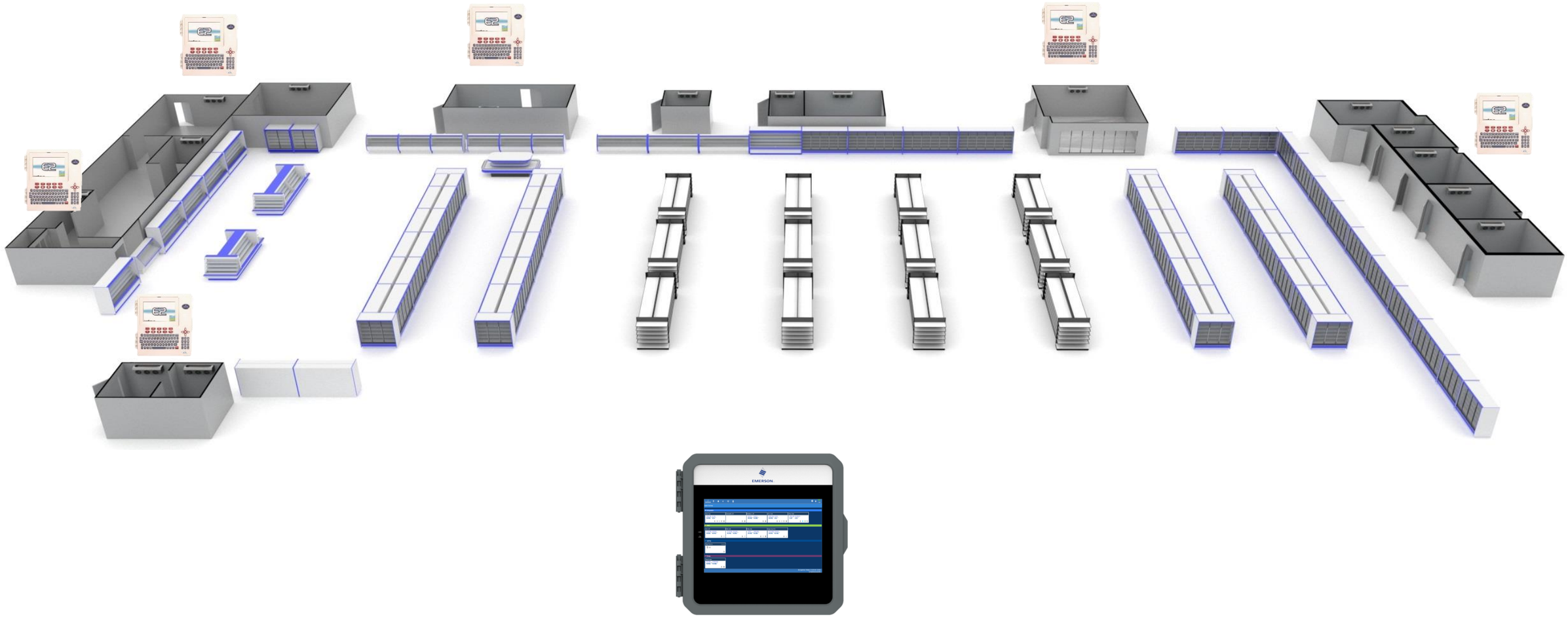
- Add to existing sites to coordinate across controllers (no need to remove E2s)
- Compatible with existing E2 and I/O boards
- Added security updates quarterly
- Mobile-ready, tablet, phone or PC
- Web access gateway to all controllers
- No additional software needed
- Aggregates E2 data into one custom view or floorplan
- Alarm Annunciator gathers all site alarms
- Email and text alarms
- E2 terminal navigation

Making Contractor Life Easier. Access All Control Devices From One Convenient Location.

Traditional Supermarket With 4-6 Supervisory Controls

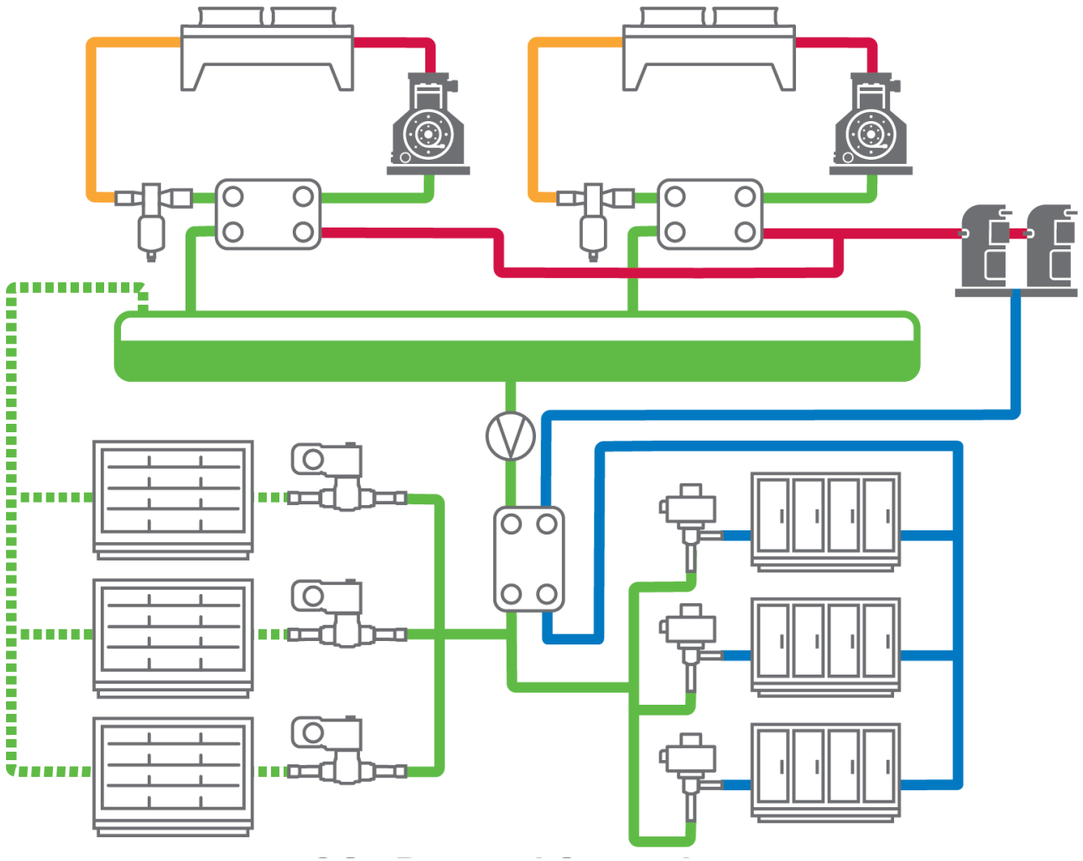


Site Aggregation Allows Visibility and Control From a Central Point



Site Aggregator Supporting Texas Retailer During Ice Storm

Store Technology Profile

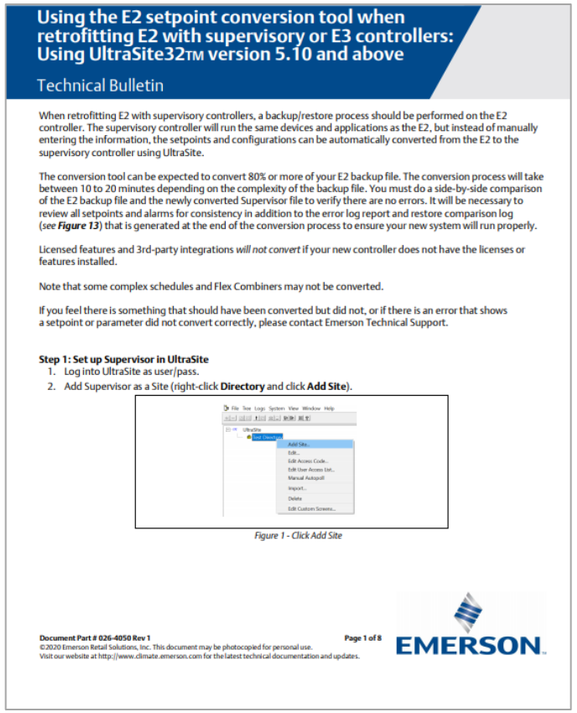


“We were able to coordinate our efforts from one location across our site, saving time and labor on-site.”

Support Services

Technical Support Materials

Conversion Tool



Using the E2 setpoint conversion tool when retrofitting E2 with supervisory or E3 controllers: Using UltraSite32TM version 5.10 and above

Technical Bulletin

When retrofitting E2 with supervisory controllers, a backup/restore process should be performed on the E2 controller. The supervisory controller will run the same devices and applications as the E2, but instead of manually entering the information, the setpoints and configurations can be automatically converted from the E2 to the supervisory controller using UltraSite.

The conversion tool can be expected to convert 80% or more of your E2 backup file. The conversion process will take between 10 to 20 minutes depending on the complexity of the backup file. You must do a side-by-side comparison of the E2 backup file and the newly converted Supervisor file to verify there are no errors. It will be necessary to review all setpoints and alarms for consistency in addition to the error log report and restore comparison log (*see **Figure 13***) that is generated at the end of the conversion process to ensure your new system will run properly.

Licensed features and 3rd-party integrations *will not convert* if your new controller does not have the licenses or features installed.

Note that some complex schedules and Flex Combiners may not be converted.

If you feel there is something that should have been converted but did not, or if there is an error that shows a setpoint or parameter did not convert correctly, please contact Emerson Technical Support.

Step 1: Set up Supervisor in UltraSite

1. Log into UltraSite as user/pass.
2. Add Supervisor as a Site (right-click **Directory** and click **Add Site**).

Figure 1 - Click Add Site

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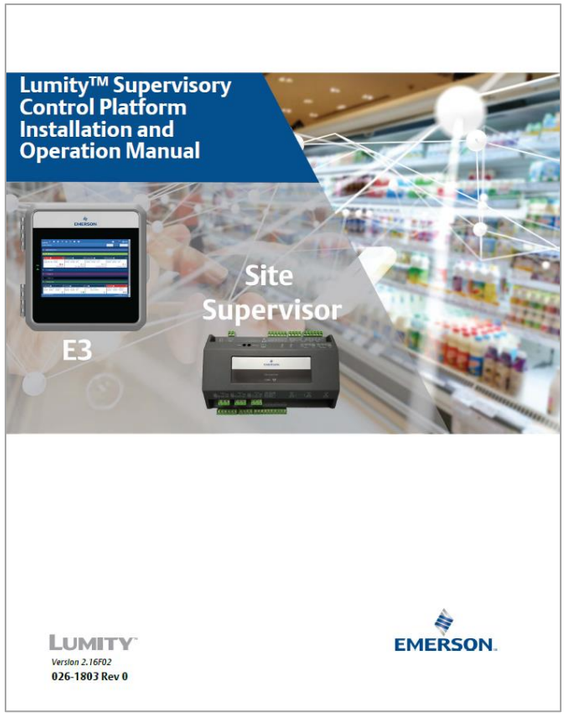
Supervisor Controller Manual



Lumity™ Supervisory Control Platform Installation and Operation Manual

Site Supervisor

E3

LUMITY

Version 2.16F02

026-1803 Rev 0

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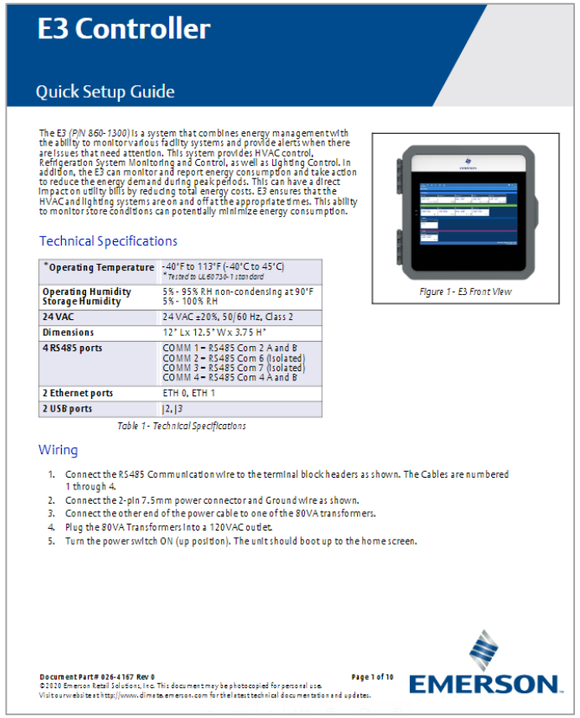
E3 Controller Quick Setup Guide



E3 Controller

Quick Setup Guide

The E3 (*P/N 860-1300*) is a system that combines energy management with the ability to monitor various facility systems and provide alerts when there are issues that need attention. This system provides HVAC control, Refrigeration System Monitoring and Control, as well as Lighting Control. In addition, the E3 can monitor and report energy consumption and take action to reduce the energy demand during peak periods. This can have a direct impact on utility bills by reducing total energy costs. E3 ensures that the HVAC and lighting systems are on and off at the appropriate times. This ability to monitor store conditions can potentially minimize energy consumption.

Figure 1 - E3 Front View

Technical Specifications

***Operating Temperature**	-40°F to 113°F (-40°C to 45°C) **Tested to UL60730-1 standard*
Operating Humidity Storage Humidity	5% - 95% RH non-condensing at 90°F 5% - 100% RH
24 VAC	24 VAC ±20%, 50/60 Hz, Class 2
Dimensions	12" Lx 12.5" W x 3.75 H"
4 RS485 ports	COMM 1 – RS485 Com 2 A and B COMM 2 – RS485 Com 6 (Isolated) COMM 3 – RS485 Com 7 (Isolated) COMM 4 – RS485 Com 4 A and B
2 Ethernet ports	ETH 0, ETH 1
2 USB ports	2, 3

Table 1 - Technical Specifications

Wiring

1. Connect the RS485 Communication wire to the terminal block headers as shown. The Cables are numbered 1 through 4.
2. Connect the 2-pin 7.5mm power connector and Ground wire as shown.
3. Connect the other end of the power cable to one of the 80VA transformers.
4. Plug the 80VA Transformers into a 120VAC outlet.
5. Turn the power switch ON (up position). The unit should boot up to the home screen.

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Site Supervisor Quick Setup Guide

Site Supervisor Controller

Quick Setup Guide

The Site Supervisor is a system that combines energy management with the ability to monitor various facility systems and provide alerts when there are issues that need attention. This system provides HVAC control, Refrigeration System Monitoring and Control, as well as Lighting Control. In addition, the Site Supervisor can monitor and report energy consumption and take action to reduce the energy demand during peak periods. This can have a direct impact on utility bills by reducing total energy costs. Site Supervisor ensures that the HVAC and lighting systems are on and off at the appropriate times. This ability to monitor store conditions can potentially minimize energy consumption.

For a copy of the full Site Supervisor Guide (*P/N 026-1800*), visit the Site Supervisor page on the Emerson website: **http://climate.emerson.com/en-us/products/controls-monitoring-systems/facility-controls-electronics/facility-and-system-controls/site-supervisor-facility-control** to download or contact Emerson Electronics and Solutions Customer Service at *770-425-2724*.

Figure 1 - Site Supervisor

Ethernet Connection

1. **ETH1** is designed to be used for directly connecting to laptop, PC, or optional touchscreen with a CAT5 network cable.
2. The default IP for **ETH1** is 192.168.1.250.
3. The optional Site Supervisor Display touchscreen default IP is 192.168.1.200 and will connect automatically to the Site Supervisor when plugged into **ETH1**. *It is recommended that you do not change these defaults.*

Figure 2 - Site Supervisor ETH 1 Ports

4. ETH0 should be reserved for the secure network connections: store or corporate networks. Ask your network administrator for the correct network IP address for **ETH0**.
5. **ETH0** and **ETH1** are physically separated for added security. Directly connecting to **ETH1** will not access the secure network connection on **ETH0**.

Figure 3 - Site Supervisor ETH 0 Port

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