

Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring



EMERSON



Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring

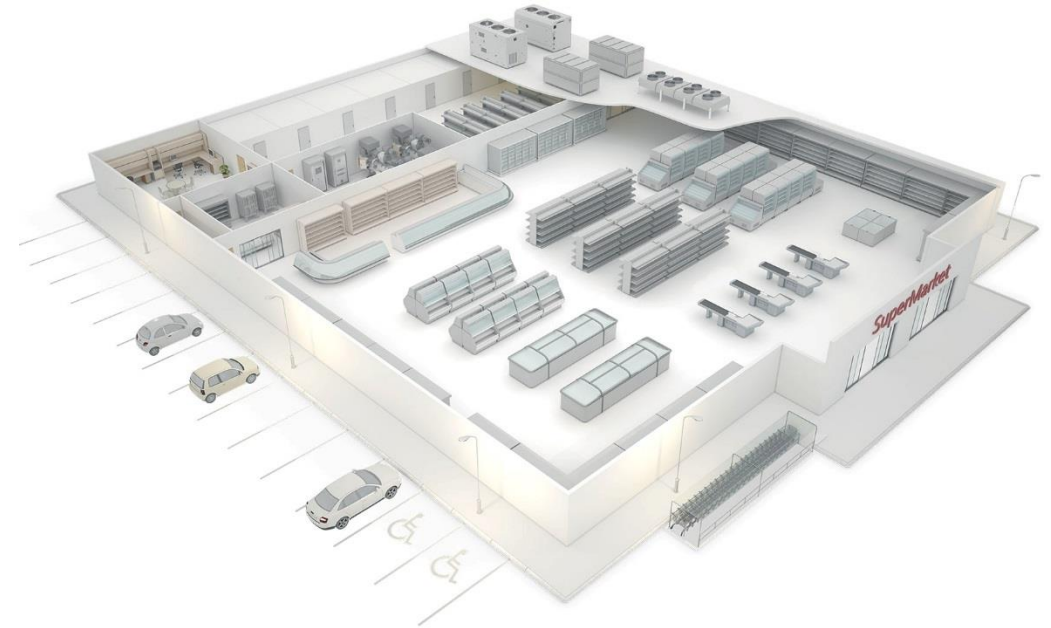
System Benefits



The Benefits Of The Emerson Solution For HVAC, Lighting And Energy Monitoring



Emerson Solution Center's Technical Capabilities Contributing To Your Success



Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring

System Benefits



Building Energy Management Systems provide an integrated control solution for the energy intensive equipment installed inside shop buildings.

HVAC units are coordinated by a supervisory and control system that harmonizes and optimizes their operation based on the operation patterns of any specific building.

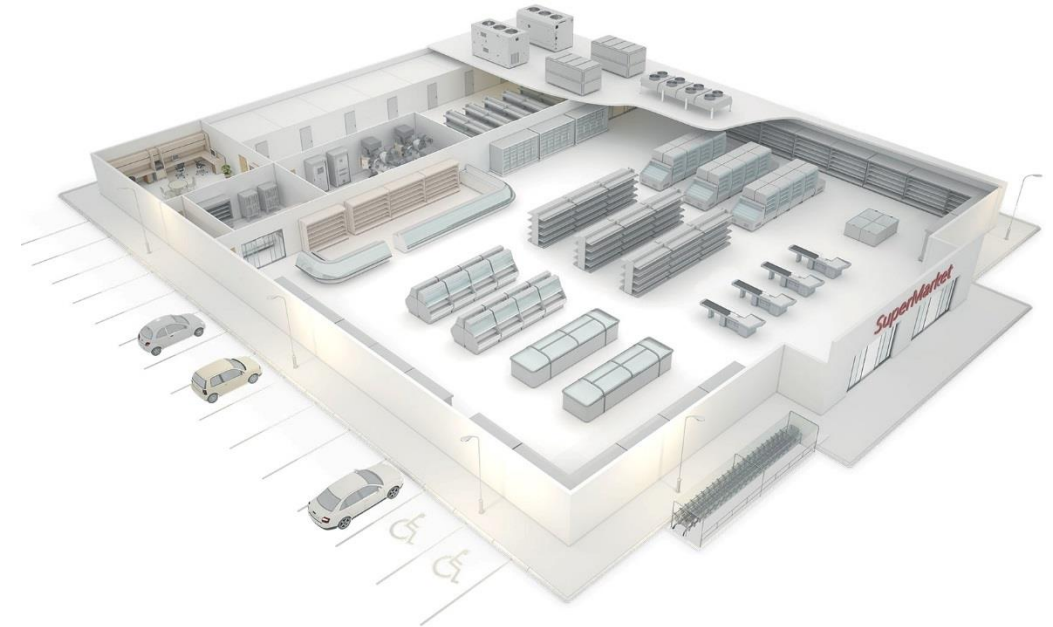
The Emerson solution extends to the complete control of chillers, heat pumps, rooftops, AHUs, cross flow heat recovery units that can be fitted with Emerson programmable controllers.

For chillers and rooftops, units that include one or multiple compressors, a Control Module dedicated to the protection and optimization of the most important components of the refrigeration circuit is available.

Light controls are part of the integrated solution and are managed in a variety of increasingly complex and performing approaches. From standard control approaches, based on digital and analog signals, to advanced approaches based on the use of serial protocols.

Eventually advanced energy monitoring capabilities allow to measure all sorts of energy use for reporting and optimization purposes.

HVAC, Lighting And Energy Monitoring



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System Benefits



The Benefits Of The Emerson Solution For HVAC, Lighting And Energy Monitoring



- Reduced start up and commissioning time
- Enhanced performance and operation
- Powerful remote control
- Open and flexible
- Integrated Emerson solution for optimal monitoring and diagnostic
- Everything is under control

HVAC, Lighting and energy monitoring overview



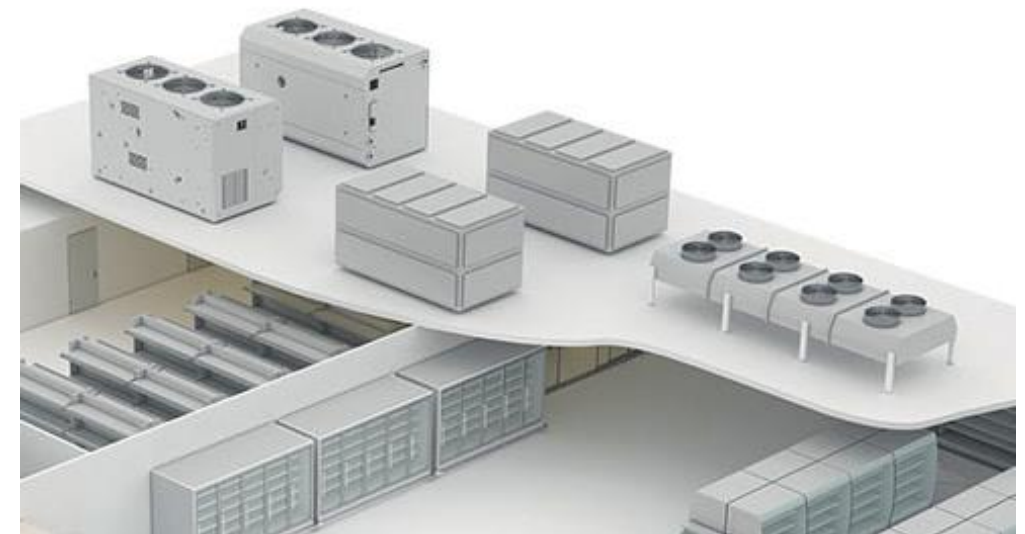
An Architecture Able To Deliver Maximum Benefits To End-users



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HVAC, Lighting And Energy Monitoring



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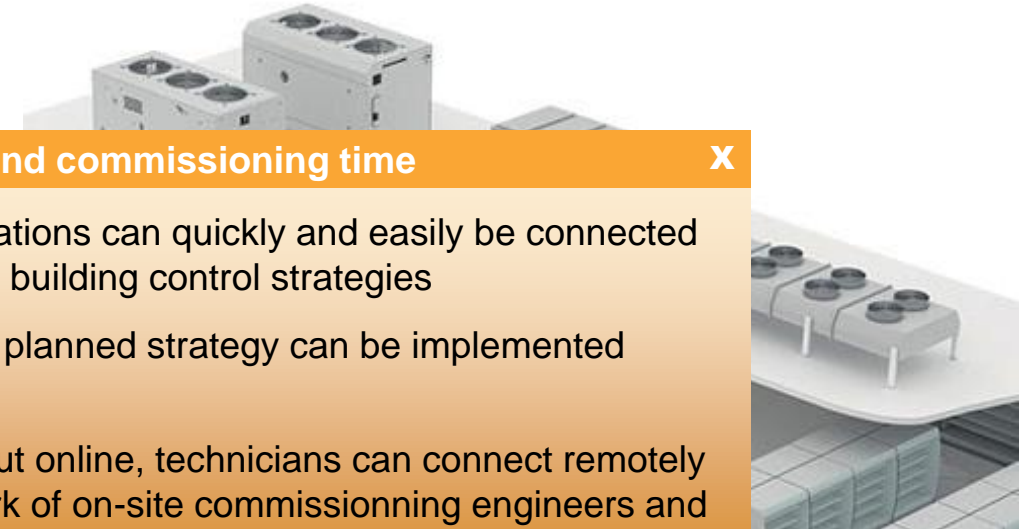
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HVAC, Lighting And Energy Monitoring



Reduced start up and commissioning time



- Embedded applications can quickly and easily be connected to create powerful building control strategies
- Modifications to a planned strategy can be implemented on site
- Once the unit is put online, technicians can connect remotely to support the work of on-site commissioning engineers and work in combination with them



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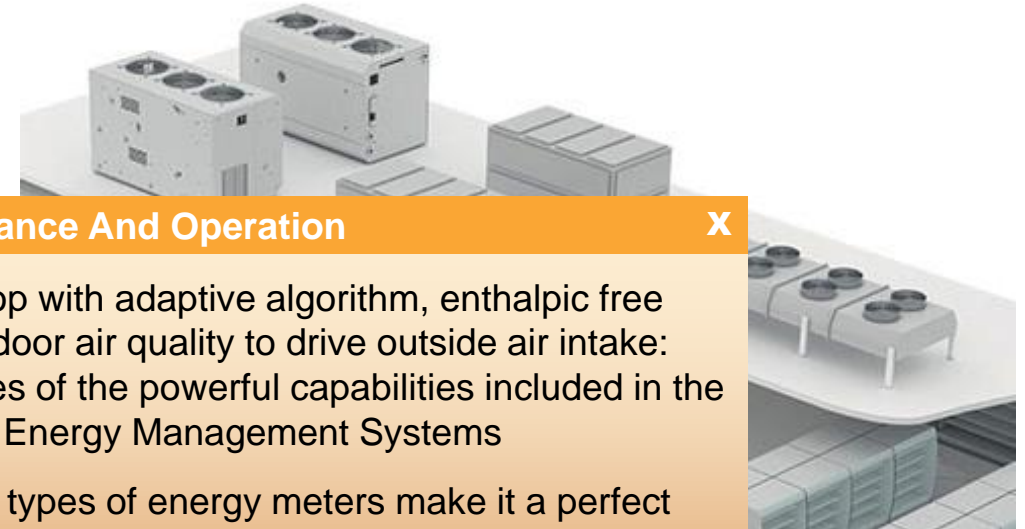
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HVAC, Lighting And Energy Monitoring



Enhanced Performance And Operation



- Optimum Start Stop with adaptive algorithm, enthalpic free cooling control, indoor air quality to drive outside air intake: these are examples of the powerful capabilities included in the Emerson Building Energy Management Systems
- Interfaces to most types of energy meters make it a perfect cornerstone for EN50001 implementation programs and energy performance initiatives
- Thanks to the full integration with all the Emerson parts, the customer can benefit from the highest efficiency and real-time performance monitoring.



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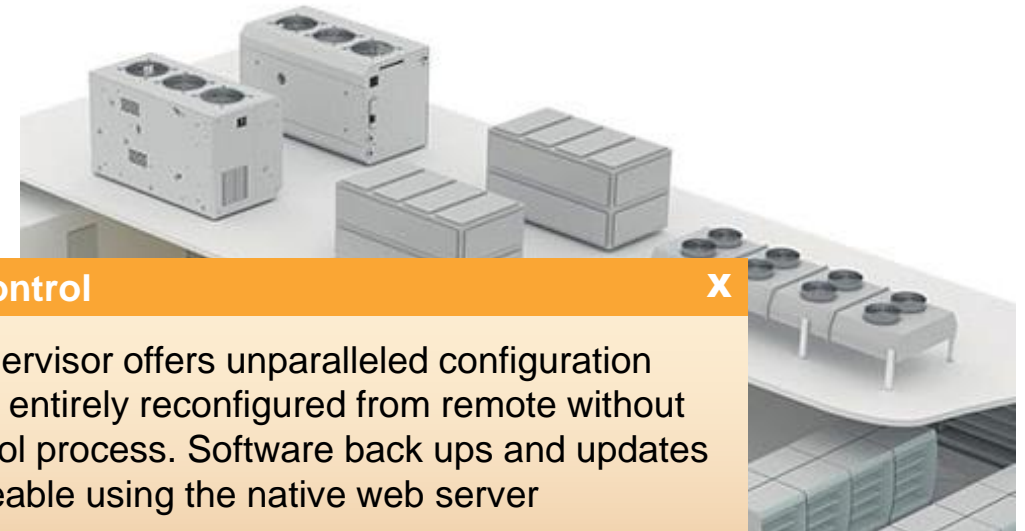
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HVAC, Lighting And Energy Monitoring



Powerful remote control



- Emerson Site Supervisor offers unparalleled configuration features. It can be entirely reconfigured from remote without stopping the control process. Software back ups and updates are easily manageable using the native web server capabilities
- In combination with Emerson cloud services, it is possible to automate back ups, data logs collection, firmware updates, set points broadcasts and many other productivity actions
- Through the remote control, the customer can have full access to the refrigerant circuit controller for optimal parameter settings and data collection



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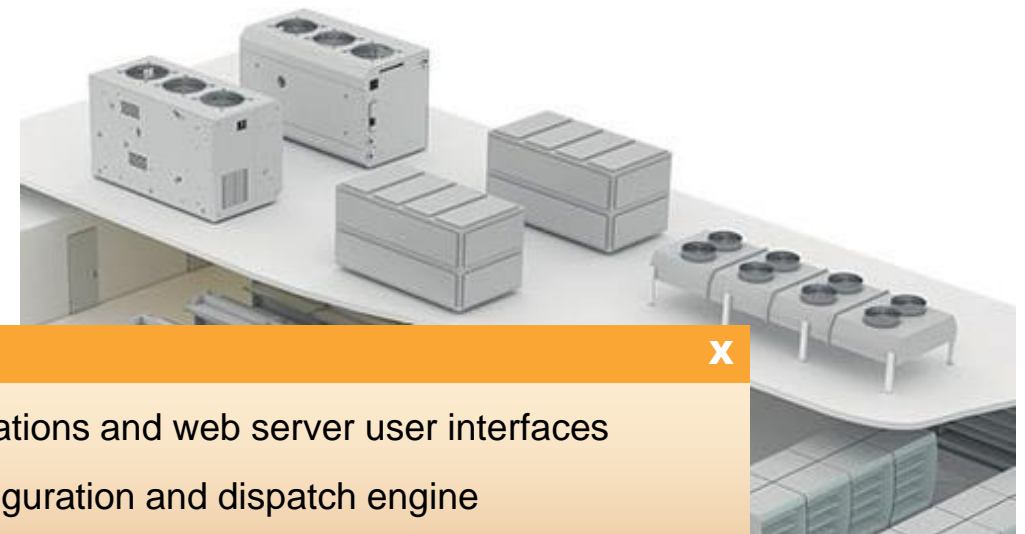
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HVAC, Lighting And Energy Monitoring



Open and flexible



- Embedded applications and web server user interfaces
- Native alarm configuration and dispatch engine
- Possibility to add interface to third party controllers using serial standard protocols
- All these features make the Emerson Building Energy Management Systems a scalable solution adaptable to the needs and standards of modern buildings



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HVAC, Lighting And Energy Monitoring



Seamless integration into Emerson cloud monitoring and management platforms X

- Emerson Building Energy Management Systems can monitor all the Emerson refrigerant circuit parts (compressor, drives, expansion valves) for a more accurate diagnostic, enabling predictive maintenance
- Emerson's ProAct cloud solutions consolidates the capillary distributed controls installed locally and connected to the Building Management System. Data are aggregated, analysed and converted into reports and information to those in charge to maintain and optimize a multitude of shops



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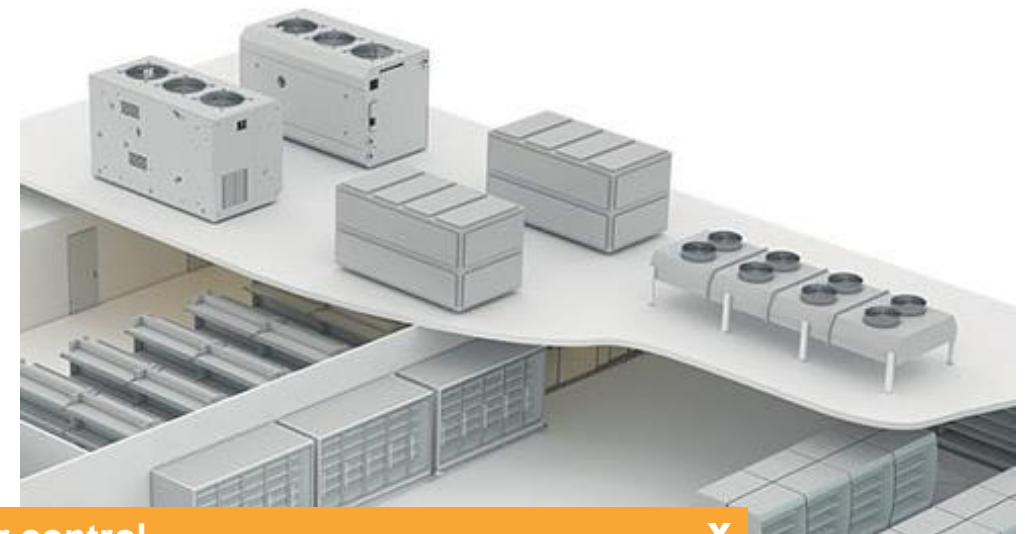
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Everything is under control

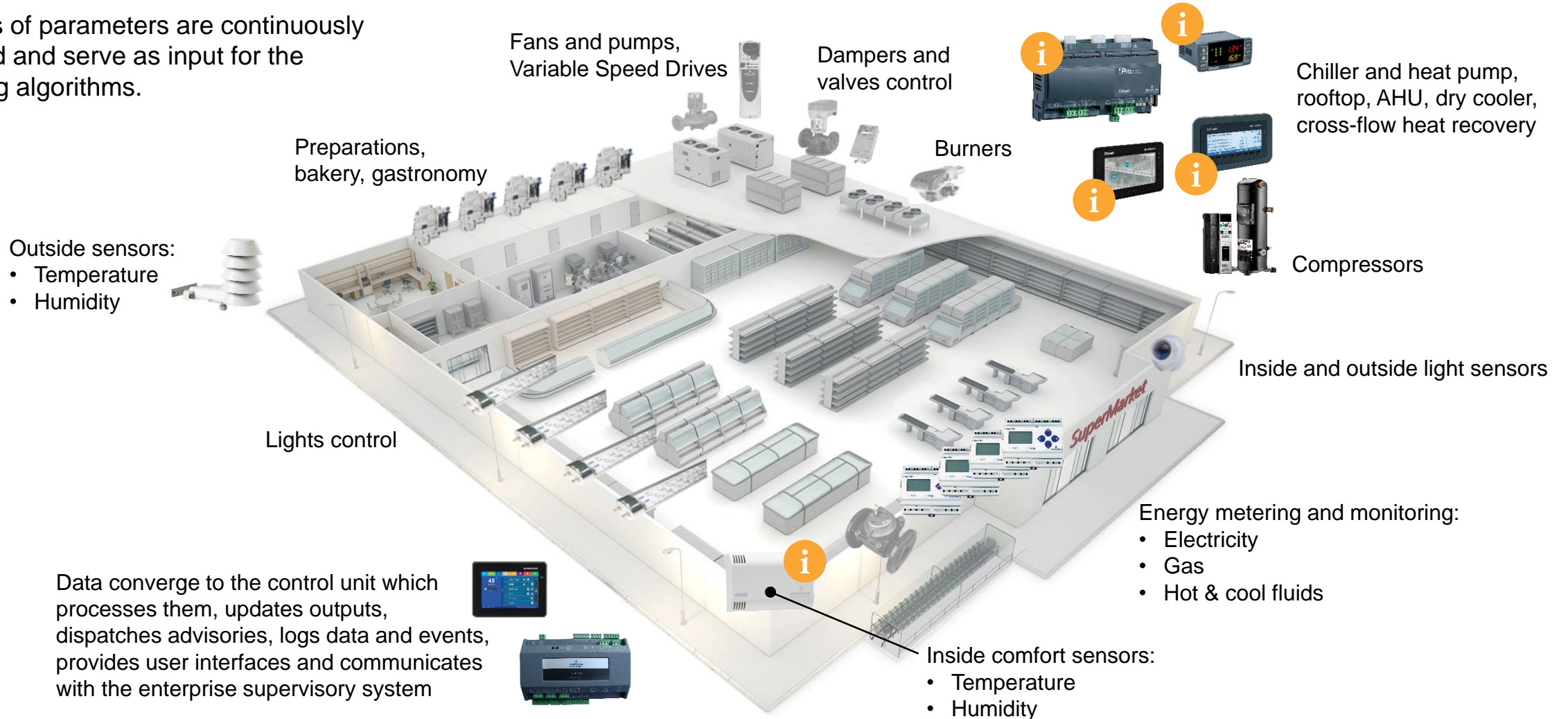


- Maintaining a convenient shopping experience for customers is a constant challenge for retailers. It means keeping a close watch over every store system and piece of equipment impacting that experience – from refrigeration and lighting to heating and cooling
- Emerson Building Energy Management Systems provide easy, yet powerful, unified access and better control over key store systems

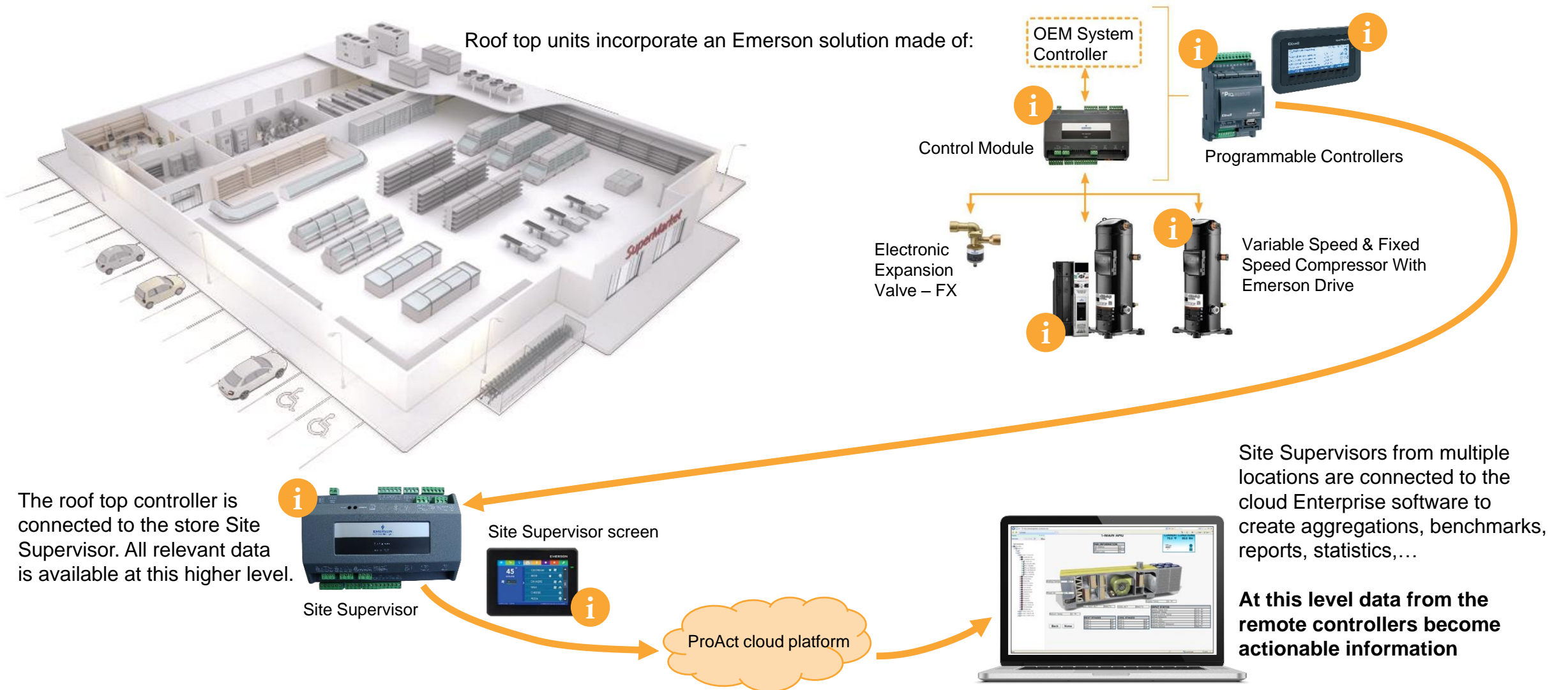


Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring

Hundreds of parameters are continuously monitored and serve as input for the controlling algorithms.



Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring



Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring

Roof top units incorporate an Emerson solution made of:

OEM System Controller

Building Energy Management System

Site Supervisor



Benefits:

- Improves indoor comfort levels
- Automates the verification of the temperature of the food cold chain
- Improves maintenance activities by sending automatic alerts
- Allows you to monitor and reduce energy consumption
- It is navigable by PCs, tablets and smartphones
- Reduces installation costs
- Enables advanced user profile management

The roof top controller is connected to the store Site Supervisor. All relevant data is available at this higher level.



Site Supervisor

Controllers

Fixed & Fixed Compressor With

Supervisors from multiple are connected to the enterprise software to generate reports, benchmarks, statistics,...

Real data from the controllers become actionable information



Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring

Roof top units incorporate an Emerson solution made of:

OEM System Controller

Building Energy Management System

Site Supervisor



Features:

- Lights and HVAC control
- Refrigeration monitoring
- Energy analysis application
- Peak load management
- Connection via web browser
- Automatic alerts sent via email / SMS
- Data storage
- Easy and intuitive user interface

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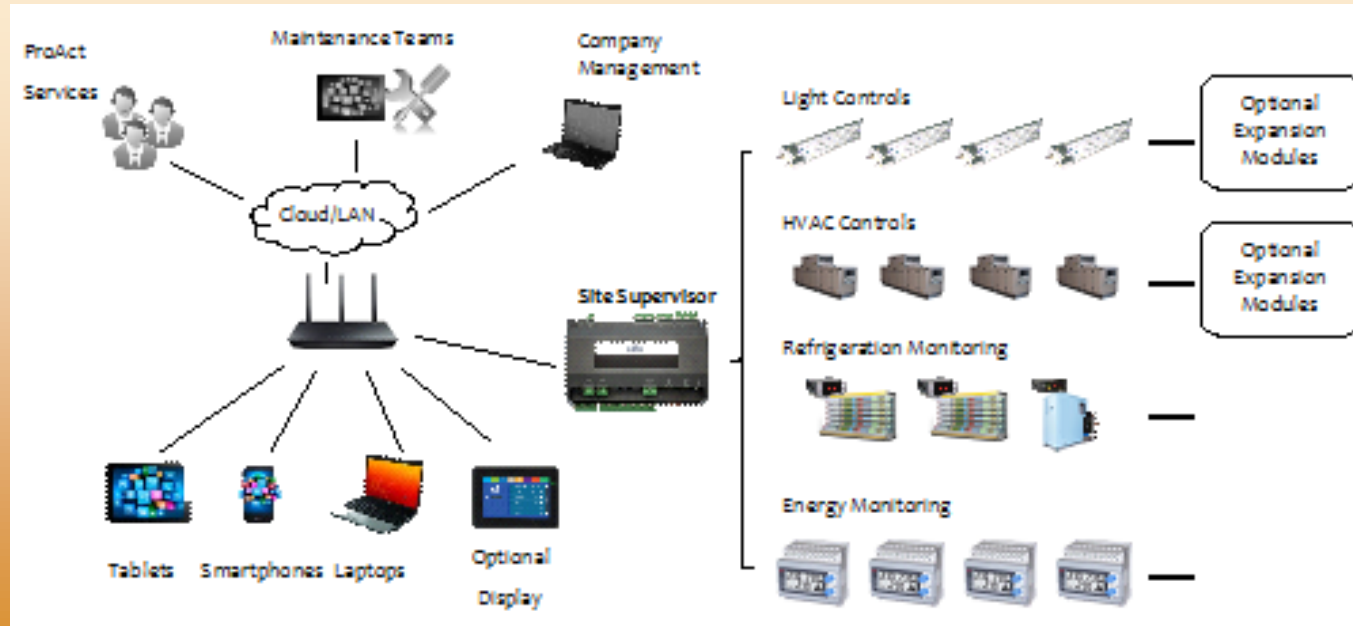
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OEM System Controller

Building Energy Management System

Site Supervisor



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Site Supervisor

Controllers

Fixed & Fixed
Compressor With
Drive

Supervisors from multiple
stores are connected to the
enterprise software to
generate aggregations, benchmarks,
statistics,...

Raw data from the
controllers become
actionable information



Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring

Roof top units incorporate an Emerson solution made of:

OEM System Controller

Building Energy Management System

Site Supervisor



Onboard Features:

Mounting	DIN rail
Inputs	8 analog/4 digital
Relay outputs	4 outputs
Ethernet ports	3 ports, 1,1,0
USB ports	2 ports, 1,2
Micro SD	1
Access	Onboard web server, ProAct Site Manager
Control network	4 Modbus RS48S ports
User access	Local and remote
Power requirement	2 4VAC 20VA required
Operating temperature	-10°C to 60°C
Relative humidity	20-85% RH non-condensing
Dimensions	103.7 x 34.7 mm
Enclosure rating	UL 94 V-0

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Site Supervisor

Controllers

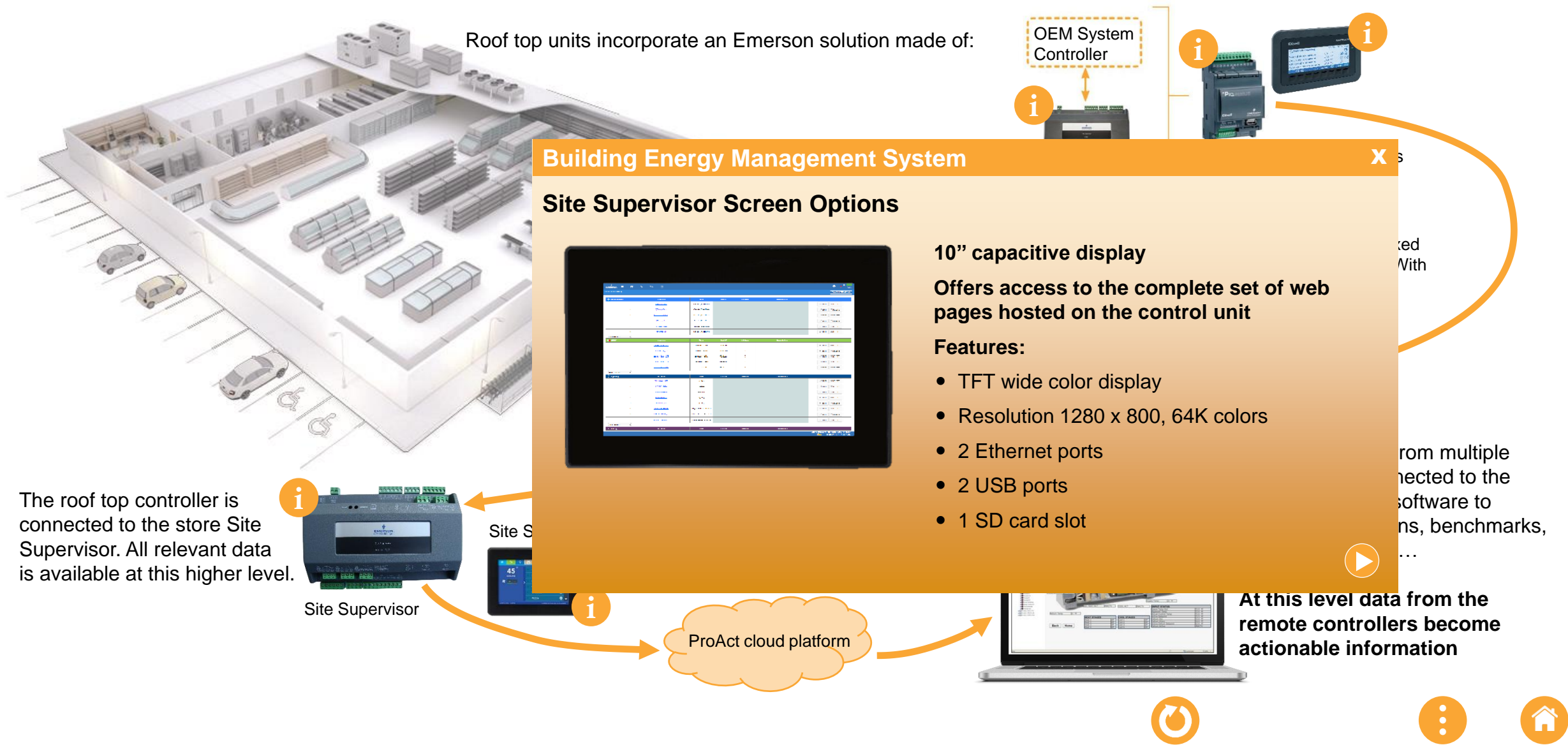
Fixed & Fixed Compressor With Valve

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Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring



Building Energy Management System

Site Supervisor Screen Options

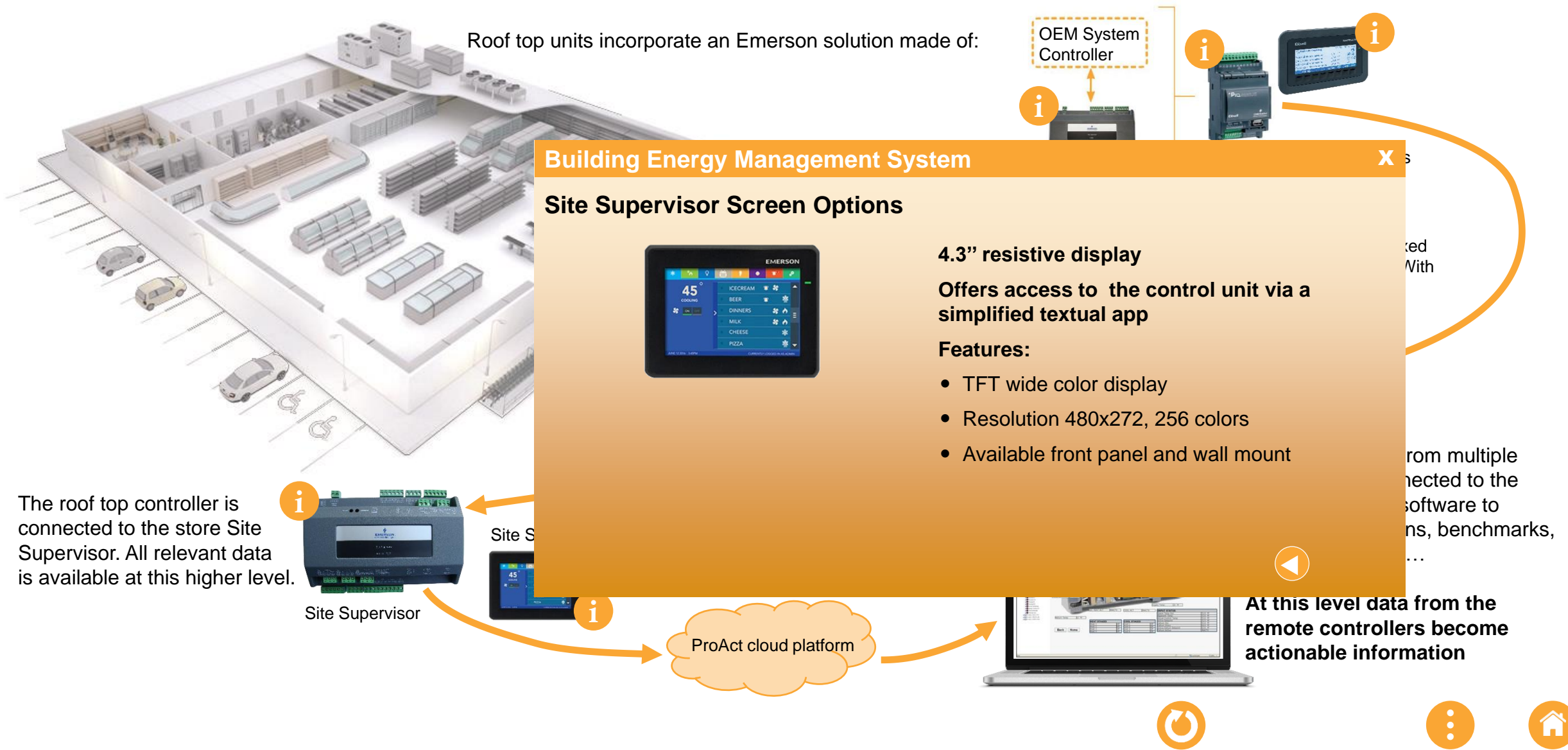
10" capacitive display
Offers access to the complete set of web pages hosted on the control unit

Features:

- TFT wide color display
- Resolution 1280 x 800, 64K colors
- 2 Ethernet ports
- 2 USB ports
- 1 SD card slot

Close (X) and Play (▶) icons are present on the right side of the box.

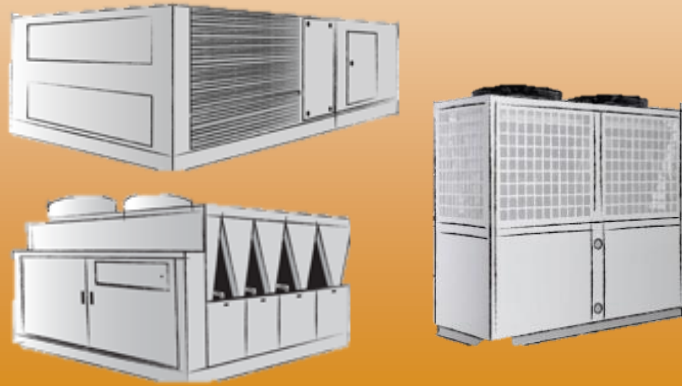
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Programmable Controllers

iProCHILL



- Advanced programmable controllers for:
 - Chillers
 - Heat pumps (also with sanitary hot water production)
 - Rooftops
 - AHUs
- High connectivity through powerful platform (Ethernet, USB, RS485 ports)
- Improved communication thanks to ModBUS, BACnet and LON protocols
- Connection to expansion modules and EEV drivers
- Web site for iPro management
- Complete local/remote alarm and unit/plant management via standard browser

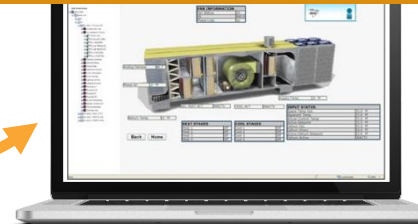
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Site Supervisor



ProAct cloud platform



At this level data from the remote controllers become actionable information



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Hundreds of parameters are continuously monitored and serve as input for the controlling algorithms.

Parametric HVAC Controllers

IC200 evo



- Advanced parametric controllers for:
 - Chillers
 - Heat pumps (also with sanitary hot water production)
 - Dry coolers
 - Cross-flow heat recovery
- High connectivity through LAN and RS485
- Improved communication thanks to ModBUS, BACnet and LON protocols
- Master/Slave function thanks to IPM500D module
- Connection to expansion modules and EEV drivers

Data converge to the control unit which processes them, updates outputs, dispatches advisories, logs data and events, provides user interfaces and communicates with the enterprise supervisory system

Fans and pumps,
Variable Speed Drives

Dampers and
valves control



Chiller and heat pump,
rooftop, AHU, dry cooler,
cross-flow heat recovery

Compressors

Inside and outside light sensors

Energy metering and monitoring:

- Electricity
- Gas
- Hot & cool fluids

Inside comfort sensors:

- Temperature
- Humidity



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AHU Solution

X

- Advanced Regulator for AHU units developed on the programmable iPro platform and able to handle all the applications, from the most simple to the complex ones.
- Thanks to its great configurability and integrated web server, this product can be used both by OEMs and technicians.
- The AHU units that will be implemented with this new controller can be easily integrated into the plant network thanks to the high connectivity of the proposed hardware.

iProAHU



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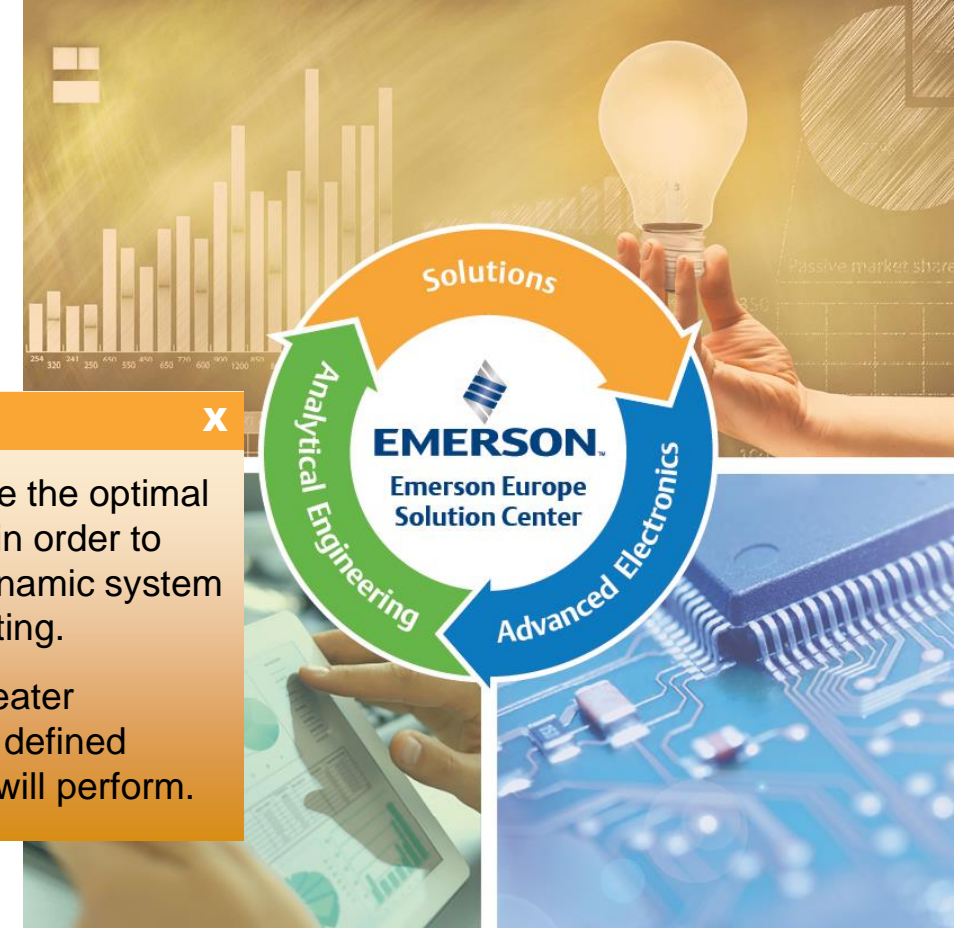
- Solutions
- Analytical engineering
- Advanced electronics

Solutions



Our team of engineering experts will help you define the optimal system specifications for your refrigeration system in order to improve quality, efficiency and reliability through dynamic system simulations, real system testing and system life testing.

These will not only offer a better overview and a greater understanding of the inter relationship between the defined parameters, but also indicate how the final system will perform.



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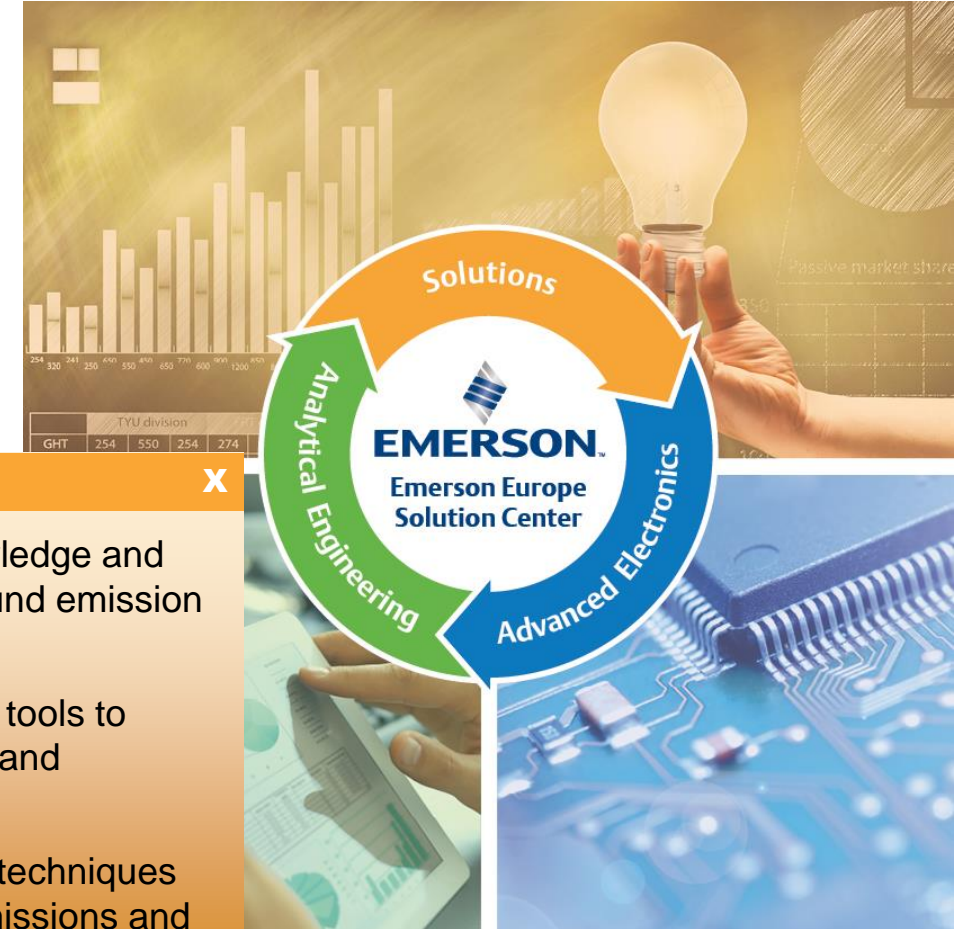
- Solutions
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Analytical engineering X

Our team of analytical engineers possess the knowledge and tools to evaluate and improve the structure and sound emission while developing new products.

Modal analysis and strain gauging are examples of tools to determine the robustness of the system, analyzing and evaluating the structural dynamics and the piping.

Noise source identification and sound analysis are techniques used to determine and help eliminate the sound emissions and reduce vibrations to the lowest possible level.



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Advanced electronics

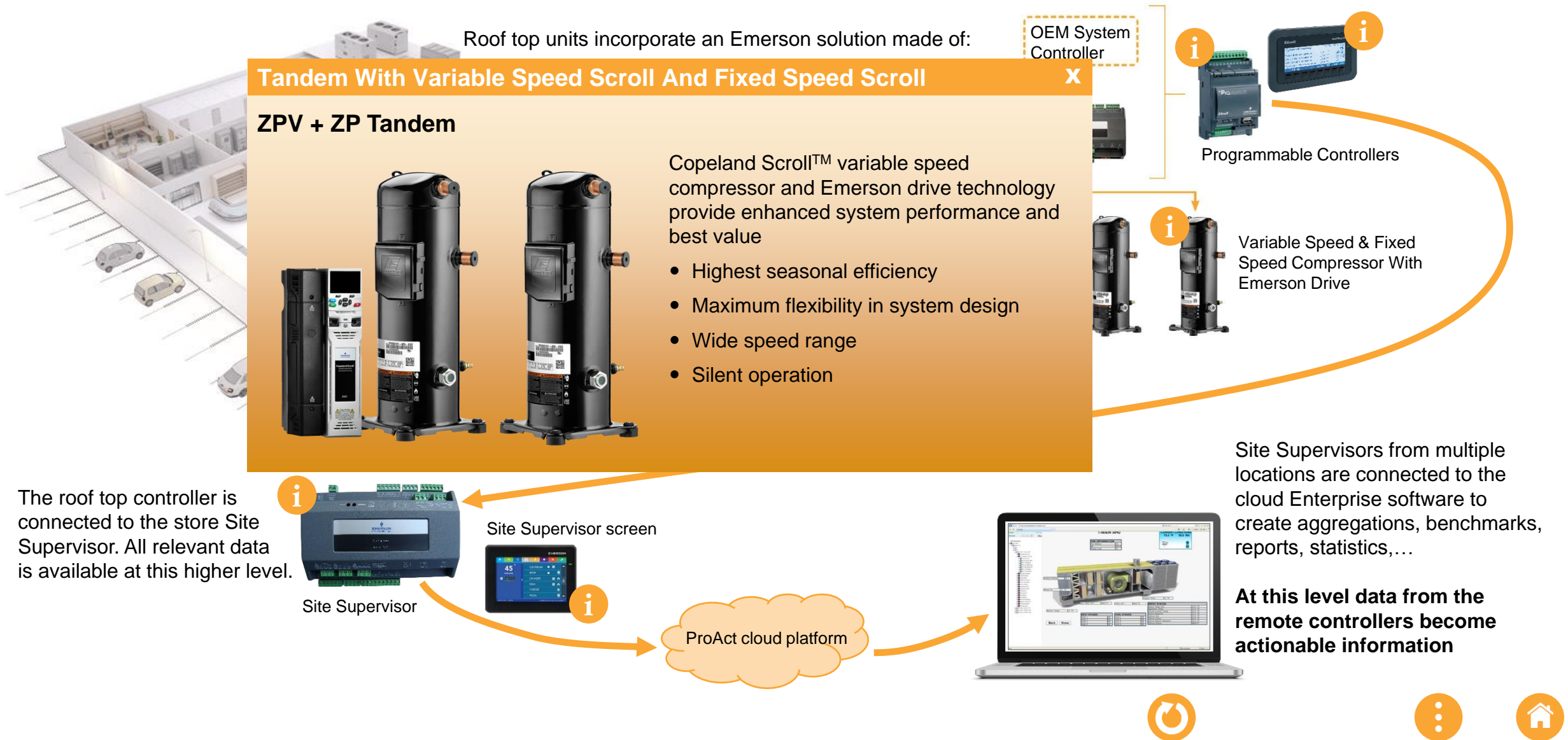


With algorithm development, software design & coding, hardware design and testing our advanced electronics team can support in developing new products for your desired application.

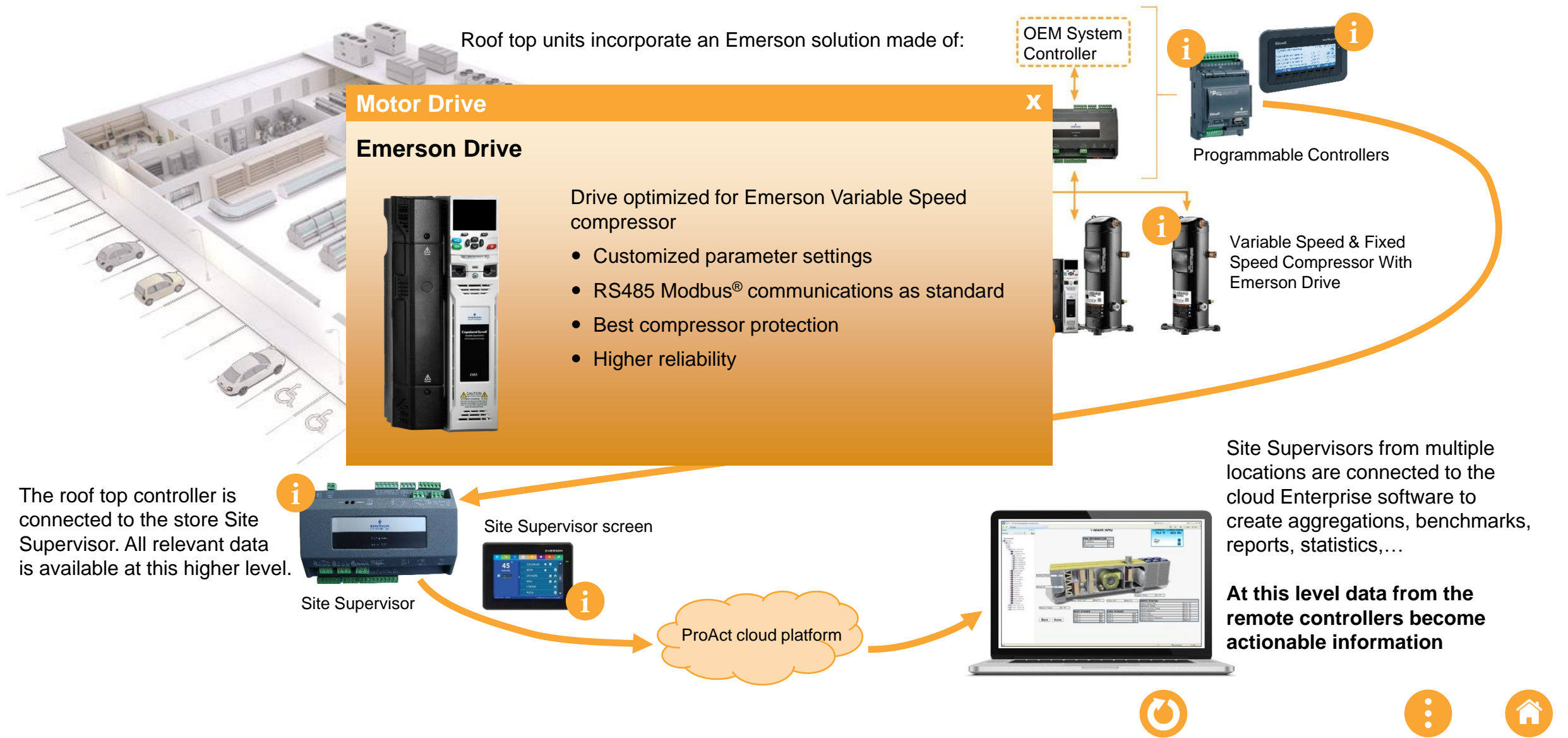
Other services we can provide in the Emerson Solution Center include pre-compliance testing, EMC testing & consultancy, agency approval testing and internal support.



Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring



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Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring

Refrigerant Circuit Controller

Control Module



Smart refrigerant circuit controller with advanced control and diagnostic capabilities

- Easy and reliable capacity management of compressor tandem and trios
- Smart EXV management to achieve higher seasonal efficiency
- Dynamic management of the compressor to achieve the best performance
- Advanced diagnostic and active refrigerant circuit protection
- Plug and play solution using RS485 Modbus communication as standard

OEM System Controller



i



i

Programmable Controllers

i



Variable Speed & Fixed Speed Compressor With Emerson Drive

The roof top controller is connected to the store Site Supervisor. All relevant data is available at this higher level.

i



Site Supervisor

Site Supervisor screen



i

ProAct cloud platform

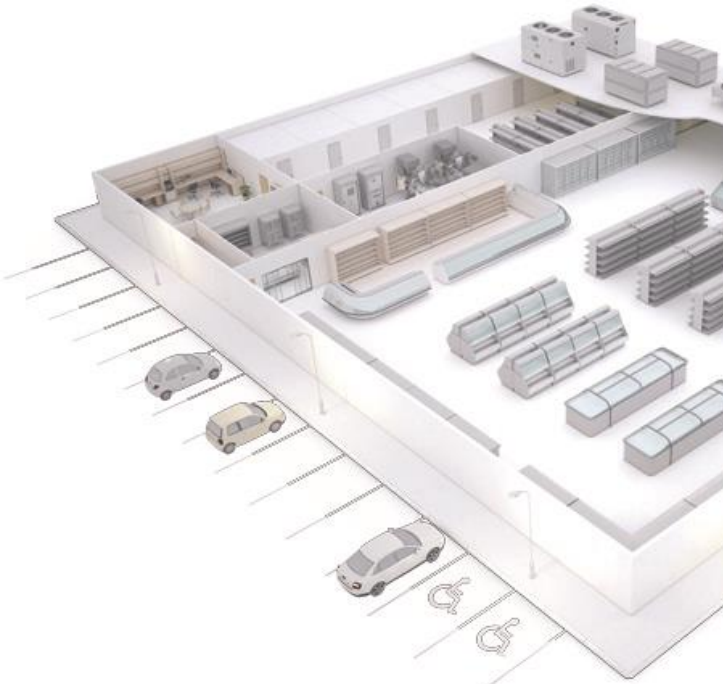


Site Supervisors from multiple locations are connected to the cloud Enterprise software to create aggregations, benchmarks, reports, statistics,...

At this level data from the remote controllers become actionable information



Flexible And Reliable Solutions For HVAC, Lighting & Energy Monitoring



Graphical Keyboards With LCD Interface

VISOGRAPH



- Dedicated interfaces for the HVAC/R world
- Useful machine status information through animated icons
- On-board probes for temperature/humidity control
- LCD display – 240 x 96 pixels
- High programmability thanks to the Visoprog 5 development tool
- Quick panel or wall mount
- UNICODE and Ascii character compatible



Variable Controllers

Variable Speed & Fixed
Speed Compressor With
Inverter Drive

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Site Supervisor screen



Site Supervisor

ProAct cloud platform



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