

**Liebert® NX™**

*Transformer-free. High Efficiency, Scalable On-line UPS.*





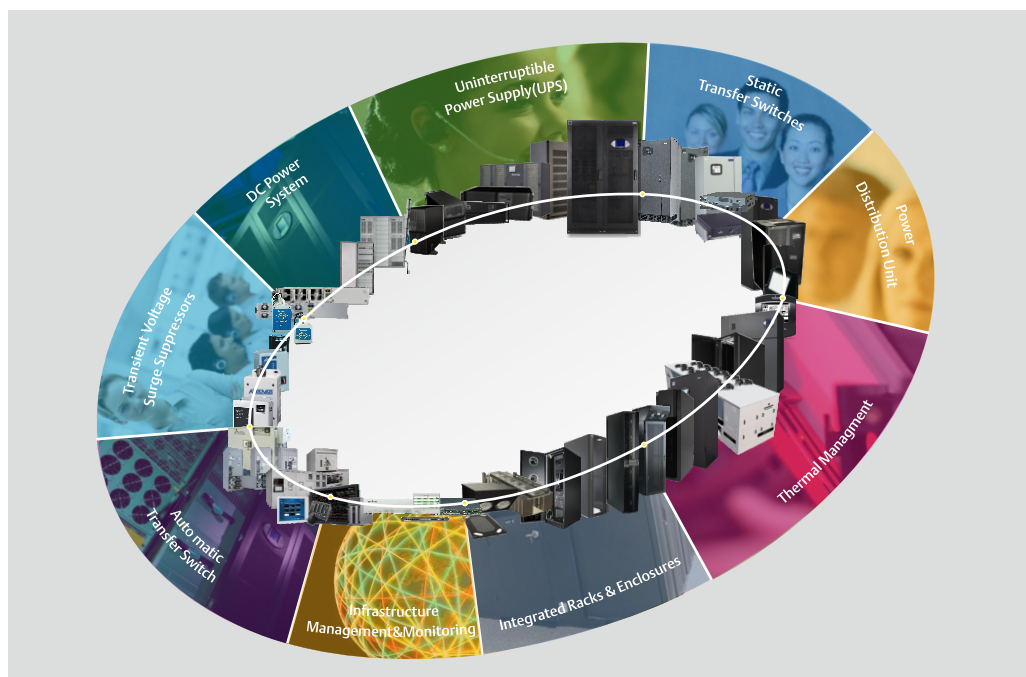
Emerson Network Power, a business of Emerson, a global company that leads by applying a unique combination of industry expertise, technology, and resources to make the future of our customers' enterprises and networks possible.

## *We are Emerson*

Emerson Network Power's broad technology base and global expertise support a full spectrum of enterprise wide solution for today's business needs . We have been providing tailored solutions for protecting the operation of critical electronic systems in virtually every business segment right from customer premise equipment to global network .

## *Emerson. Consider It Solved.*

Customers call on Emerson when the stakes are the highest. Why? Because they know that we bring them technology and engineering to create solutions for their success. Whatever their challenge, they know that with Emerson by their side, they can "Consider It Solved."



Supported by our right combination of knowledge, experience, product selection and service capability. We are the true solution provider of our customer's IT infrastructure, right from grid to chip level.

When the stakes are high, partner with Emerson Network Power to optimize your technology with "high-nines" reliability solutions specific to your infrastructure.



Facility managers continue to face the increasing outlay of energy consumption and the call for greener means of operating the facility. Today, going into energy-efficient options and generating less CO<sub>2</sub> in every possible way can no longer be overlooked.

**Introducing the Liebert® NX™ 250-800kVA**, a next generation three-phase UPS solution from Emerson Network Power.

The Liebert® NX™ delivers the best combination of availability, reliability and energy-efficiency. It presents an industry-leading features such as intelligent energy management that promotes efficient energy measures in the infrastructure and outstanding power protection technology that is designed to use optimum energy, generate less CO<sub>2</sub> and occupy optimum footprint in order to provide significant cost savings.

The Liebert® NX™ is equipped with transformer free design with full IGBT double conversion technology that enables extraordinary savings on installation and operating expense at same time delivering high quality protection to your critical load

### *Liebert® NX™ UPS delivers Efficiency Without compromise*

Efficiency Without Compromise provides a path to optimize data center infrastructure around design, operating and management efficiencies – while maintaining or improving availability.

## Liebert® NX™ 250- 800 kVA



**ECO AVAILABILITY**  
Balancing high levels of availability and efficiency



**HIGH DENSITY**  
Delivering high power in lowest footprint



**FLEX CAPACITY**  
Adapting to IT changes for continuous optimization and design flexibility



**INFRASTRUCTURE MANAGEMENT**  
Improving performance of the IT infrastructure and environment

## Key Features

- Overall efficiency up to 99.3% in Intelligent ECO mode
- Supports smart parallel function
- Input power factor > 0.99
- Input current distortion (THD i) <3%
- Excellent generator adaptability
- Widest input voltage & frequency range
- Battery ground fault detection
- Strong 0.9 output PF loading capacity

## Easy Installation

- Suitable for top & bottom cable termination  
No need for additional space / cabinet
- User friendly multi-lingual intuitive large LCD HMI
- Standard built in LBS function

## Maintenance-Free

- Front access
- Low MTTR due to granular design architecture
- Built in static & maintenance bypass
- Standard built-in D class lighting protection
- Longer battery life through smart battery management

## The Liebert® NX™ application areas :

- IT Loads
- Data Centers
- Manufacturing Industries
- Process Industries
- Telecom



- 1 High Efficiency**  
Efficiency up to 95.5% in online mode and up to 99.3% in Intelligent ECO mode deliver remarkable OPEX saving
- 2 Advanced IGBT based ,multilevel rectifier & inverter technology**  
Supplies clean, stable power to sensitive loads ensuring critical power protection and extended life
- 3 Dual source**  
Provide connection to two separate input sources for increased availability
- 4 Built-in static and maintenance bypass**  
Enables the UPS unit to transfer the load to utility power, without interruption, in the event of heavy overload or fault.
- 5 Standard builtin LBS and parallel function**  
It allows easy expansion of redundant architecture by adding a cable between connection
- 6 Compact footprint and front access**  
“Most compact UPS in its range”, optimised footprint allows significant space cost saving with easy to access & commission at site



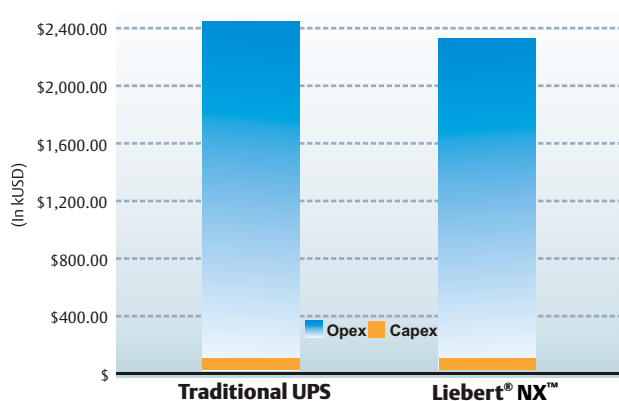


## High Efficiency and Minimum Total Cost of Ownership (TCO)

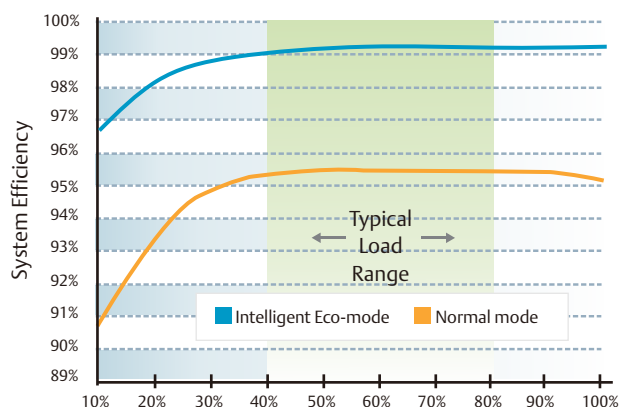
Driven by advanced transformer free design and 6th generation DSP control technology, delivers high efficiency at partial and rated loads (up to 99.3% in Intelligent ECO mode). This level of efficiency can significantly reduce the TCO level of the UPS during its life cycle.

**Liebert® NX™** powered by the advanced intelligent core which continuously monitors the input parameters of utility to decide the best operating mode of operation. Intelligent core accords first priority to source reliability followed by energy efficiency and so on, in order to deliver the best performance at minimum TCO.

**400kVA : TCO for 5 years @ 100 % Load**



**Liebert® NX™: Efficiency curve**



\* Assumed Average capex

\* Opex calculated consider Brand A Avg  $\eta$  @ 93% and Liebert® NX™  $\eta$  @ 95.3%

### Typical Saving Chart

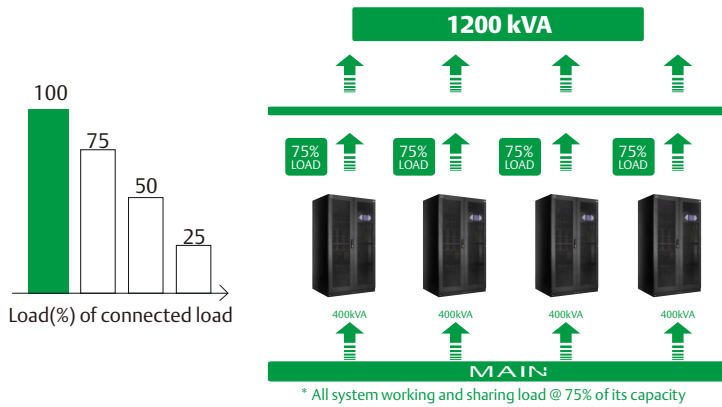
\* All figures in USD

Rating (kVA)	Brand A Avg. @93%	Liebert NX Avg. @95.3%	Annual Energy Cost Saving	Annual Air Con. Saving	Total Annual Saving	Saving @ 10Years
250	\$235,484	\$229,801	\$5,683	\$2,436	\$8,119	\$81,189
300	\$282,581	\$275,761	\$6,820	\$2,923	\$9,743	\$97,427
400	\$376,774	\$367,681	\$9,903	\$3,897	\$12,990	\$129,903
500	\$470,968	\$459,601	\$11,366	\$4,871	\$16,238	\$162,378
600	\$565,161	\$551,522	\$13,640	\$5,846	\$19,485	\$194,854
800	\$763,548	\$735,362	\$18,186	\$7,794	\$25,981	\$259,805

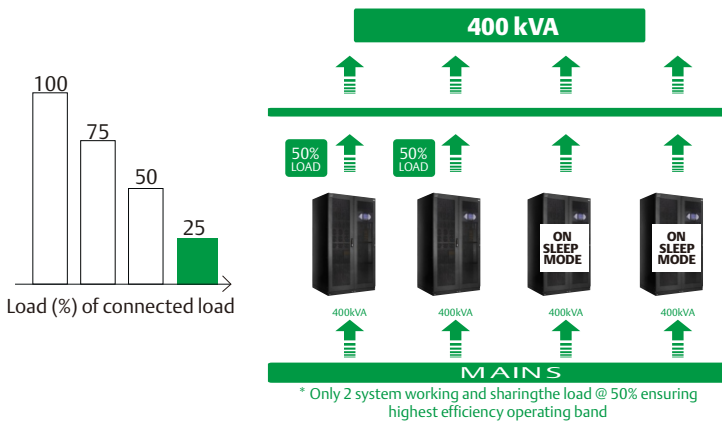
\* Note: Calculation Based on \$ 0.10/kWhr

\* Operating expense includes Air conditioning cost

Scenario 1 - Full capacity in (n+1) configuration



Scenario 2 -DCM mode with reduced load



## Dynamic Capacity Modulation

Liebert® NX™ can be kept in single or in parallel operation to improve the power availability, and to increase the system capacity and redundancy.

- In a 1+N system, if the load is much less than the connected UPS units, one or more UPS units will turn to sleep mode.

**Customer Benefit :** Improves efficiency without compromising availability

- Load profiling (weekly or monthly) to learn the off-peak times and adaptively schedule modules to take off-line
- Track each module's off-line hours and schedule other modules to be off-line to distribute the operating hours to all modules

This Scalable architecture keeps the purchasing and operating expense exceptionally low

## Compact foot print

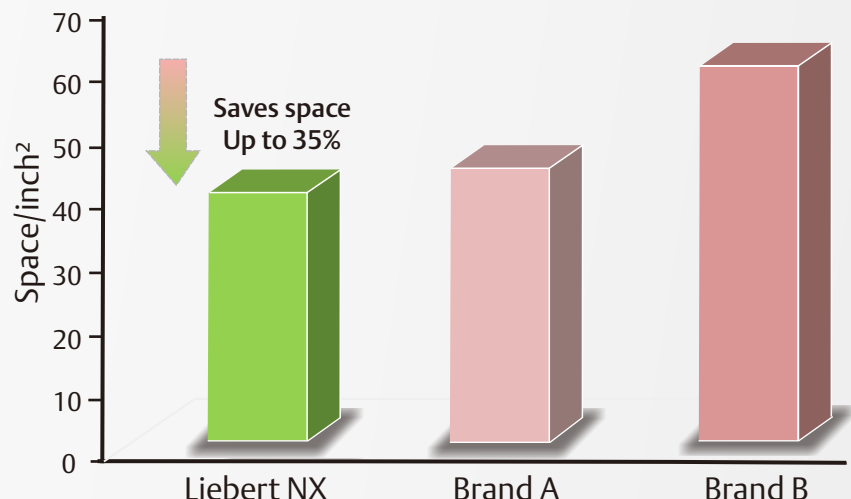
Scores of market survey have shown that the issue of space requirements in deploying IT infrastructure is very crucial parameter.

Liebert® NX™ bring a new paradigm to the field of power protection with truly compact high power UPS. It delivers maximum power by deploying the smallest footprint available in the industry

Liebert® NX™ 400kVA delivers extremely high power density with 250 kVA/m<sup>2</sup>, thanks to its advanced gradual design which sequentially not only saves space but also optimizes UPS weight & MTTR.

Virtually, Liebert® NX™ 400kVA saves up to 35% space compared to its nearest competitor.

Footprint /inch<sup>2</sup>





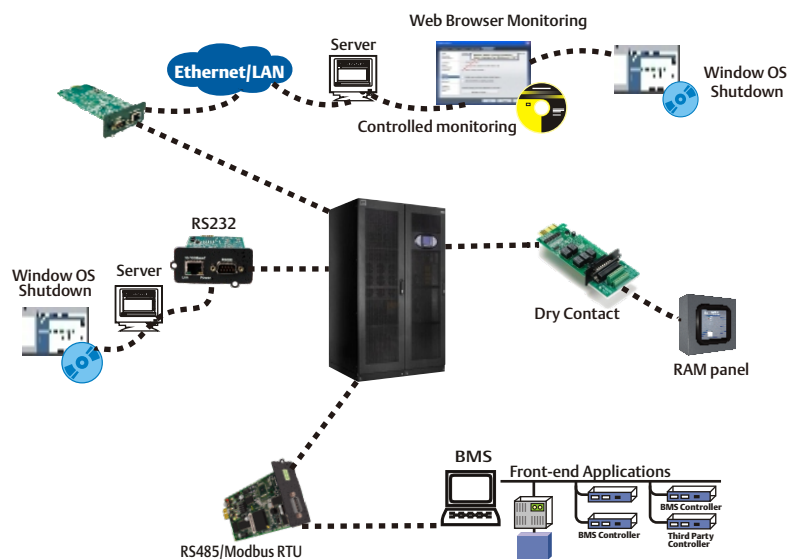
*"Efficiency, Reliability and Value  
in a compact package"*

## Communication Option

Liebert® NX™ is equipped with array of interface options that enable users to monitor event notification, status, indication, control & firm ware up gradation locally & remotely

The interfaces Options are:

- RS 232 for maintenance in parameter setting
- Potential free contacts
- RS 485 for MODBUS/JBUS interface
- Ethernet connectivity for LAN/WAN monitoring
- Auto shutdown software
- Remote monitoring & management software



## Liebert® NX™ : Customer Value Matrix

	Total Cost of Ownership	Highest Availability	Higher Performance & Flexibility	Improved Manageability	Extra Value Delivered
Ultra High Efficiency	✓				✓
Smallest Footprint	✓		✓		✓
Wide Input Voltage Range	✓	✓	✓		✓
Wide Input Frequency Range	✓	✓	✓		✓
IGBT Rectifier & Inverter		✓	✓		✓
Dual Bus Ready		✓	✓	✓	✓
Top & bottom cable termination	✓		✓		✓
Advanced Microprocessor	✓	✓	✓	✓	✓
Low THDi & THDv (<3%)	✓	✓	✓		✓
High Input & Output PF	✓	✓	✓		✓
Parallel-able		✓	✓		✓
Full Digital Control	✓	✓	✓		✓
Advanced Battery Management System	✓	✓	✓	✓	✓
24X7 Services	✓			✓	✓



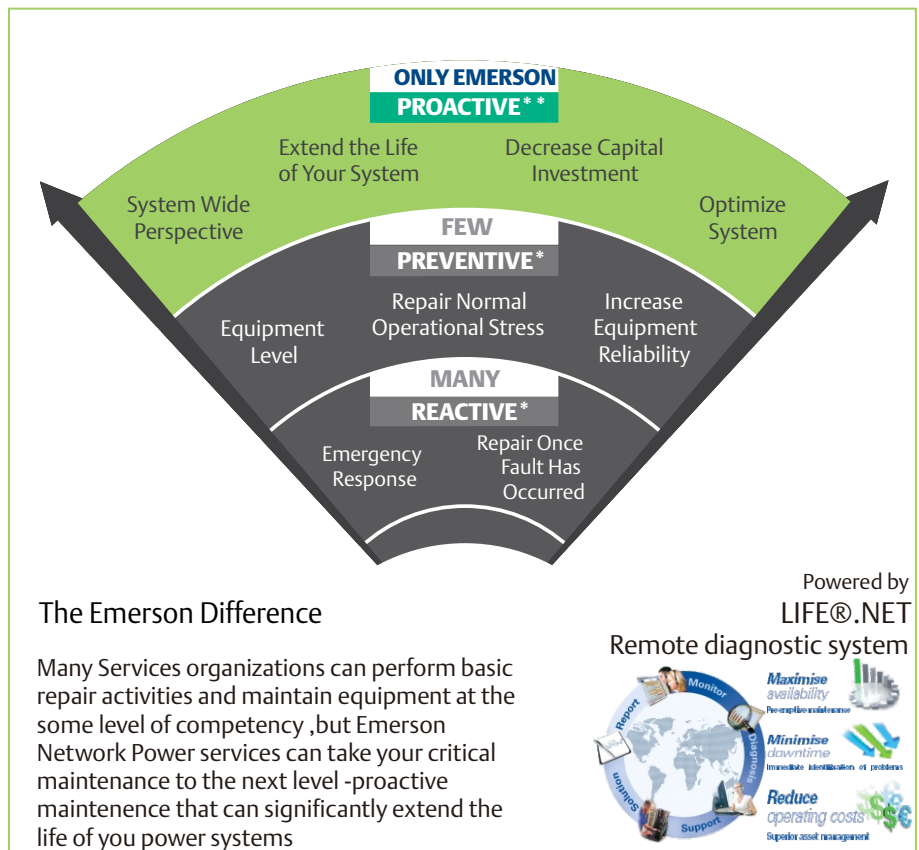


## SUPPORT

Maximizing the performance and efficiency of your data center's uninterruptible power supply (UPS) and other power distribution systems requires they be properly maintained by factory-trained technicians.

Emerson Network Power, Liebert® Services has the only service organization in the world that has been factory trained on Liebert power equipment and is continuously supported and updated by the engineers who built the equipment.

Our Customer Engineers have a better knowledge of how to maintain Liebert equipment and integrate it into the overall data center infrastructure support strategy than any service provider.



## Emerson Network Power, Liebert Services

### Industry Experience

As long as data centers have existed, Liebert Services has been supporting data center infrastructure and providing integrated services for mission-critical environments.

### System Wide Expertise

Nobody understands Liebert power equipment, precision cooling units and electrical infrastructure better than the experts at Liebert Services.

### Technical Expertise

Our knowledge of systems and how they integrate into your overall facility makes us uniquely qualified to apply the latest technology and best practices to your power, precision cooling, and battery systems.

### Unparalleled Responsiveness

With Liebert Services, you have 24/7 access to a network of data center infrastructure specialists armed with

the knowledge and parts to resolve your problems. Anytime. Anywhere.

### Fast, Efficient Problem Resolution

Only Liebert Services offers the right combination of industry, system, and technical expertise along with the extensive resources necessary to identify and understand any data center need and provide proactive solutions.



## Liebert® NX™ Technical Specifications

Rated Power KVA		250kVA	300kVA	400kVA	500kVA	600kVA	800kVA
Dimension							
Width (mm)		1200				2400	
Depth x Height (mm)		900 x 1900					
Weight (kg)		850	900	1200	1850	1950	
Input features (rectifier)							
Rated input voltage		380/400/415VAC, 3-phase and 4-wire					
Rated frequency		50Hz/60Hz					
Input voltage range		325V~ 478V					
Input frequency range		40Hz-70Hz					
Input power factor		≥0.99					
Input current distortion (THD i)		≤3%					
DC feature							
Recharger output voltage regulation		1%					
DC ripple voltage		≤1%					
Output features							
Invertor output voltage		380/400/415VAC, 3-phase and 4-wire					
Output power factor		0.9					
Voltage regulation	Steady state	< 1% typical value					
	Transient state	< 3% typical value					
Transient response time		< 20ms					
Phase voltage symmetry with balance load		1%					
Phase voltage symmetry with 100% unbalanced load		1%					
THDv	100% linear load	< 2%					
	100% nonlinear load	< 5%					
Bypass							
Bypass input voltage		380/400/415VAC, 3-phase and 4-wire					
Bypass voltage range		- 20% ~ + 15%, other values settable through software					
System							
Frequency precision (internal clock)		±0.05%					
System efficiency (in Intelligent ECO mode)		up to 99.3%					
Environmental Conditions							
Operating temperature		0~ 40 °C					
Storage temperature		- 25 ~ 70°C (without battery)					
Relative Humidity		0 ~ 95%, without condensation					
Max operation altitude		≤1000m above sea level					
Noise (1m)		< 74db			< 76db		
IP degree protection		IP 20					
Standard		Compatible safety standards: IEC60950-1, IEC62040-1, UL1778, Electromagnetic compatibilty IEC62040-2, Design and test IEC62040-3					

\* 250 kVA and 500 kVA system can be upgraded to 300 KVA and 600 KVA to meet higher apparent power @ 0.8 PF while retaining other specifications unchanged, please contact to local Emerson representative for further details.

Note: Specification are subject to change without any prior notification .

## About Emerson Network Power

*Emerson Network Power, a business of Emerson (NYSE:EMR), is the world's leading provider of critical infrastructure technologies and life cycle services for information and communications technology systems. With an expansive portfolio of intelligent, rapidly deployable hardware and software solutions for power, thermal and infrastructure management, Emerson Network Power enables efficient, highly-available networks.*

*Learn more at [www.EmersonNetworkPower.Asia](http://www.EmersonNetworkPower.Asia).*

### Emerson Network Power Asia Pacific

<b>Australia</b> T: 1800-065345 F: 61-2-97438737	<b>New Zealand</b> T: 64-3-3392060 F: 64-3-3392063
<b>China</b> T: 86-755-86010808 F: 86-755-86010909	<b>Pakistan</b> T: 92-42-36622526 to 28 F: 92-42-36622530
<b>India</b> T: 91-22-33154400 F: 91-22-25828358	<b>Philippines</b> T: 63-2-7207400 F: 63-2-6203693
<b>Japan</b> T: 81-3-54038594 F: 81-3-54032924	<b>Singapore</b> T: 65-64672211 F: 65-64670130
<b>Korea</b> T: 82-2-34831500 F: 82-2-5927883	<b>Thailand</b> T: 66-2-6178260 F: 66-2-6178277 to 78
<b>Malaysia</b> T: 603-78845000 F: 603-78845188	<b>Vietnam</b> T: 84-4-37628908 F: 84-4-37628909

### Exclusive Distributor for Indonesia



**PT DKSH INDONESIA**  
T: 62-21-3192-4289  
F: 62-21-3192-4290  
[www.dksh.com](http://www.dksh.com)

### Stay connected:



Emerson Network Power



EmersoNP\_AP

**Marketing.AP@emerson.com**  
**[www.EmersonNetworkPower.Asia](http://www.EmersonNetworkPower.Asia)**

While every precaution has been taken to ensure accuracy and completeness herein, Emerson Network Power assumes no responsibility, and disclaims all liability, for damages resulting from use of this information or for any errors or omissions. Specifications are subject to change without notice.

Emerson Network Power is a trademark of Emerson Electric Co. or one of its affiliated companies. All other names and logos referred to are trade names, trademarks, or registered trademarks of their respective owners. ©2016 Emerson Electric Co.

ACP-PW-1-1-14-3

**EMERSON. CONSIDER IT SOLVED.™**