

■ AC Power
For *Business-Critical Continuity™*

Liebert® NX Series

30kVA to 200kVA





Liebert NX

Anticipating Technology Changes Through Adaptive Architecture

Today, you need a power infrastructure that can work across your enterprise and respond to constant change. An infrastructure that allows you to deploy blade servers and other high-density equipment safely and cost-effectively. An infrastructure that can meet the strict power quality requirements of VoIP switches.

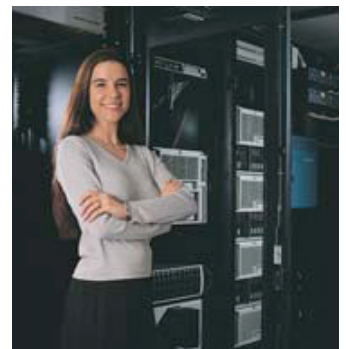
An infrastructure that allows you to add capacity without compromising availability or serviceability.

Scalability alone can't get you there. You need an infrastructure that takes it one step further. An infrastructure that can adapt to your needs.

How the Liebert NX Enables Adaptive Architecture

Lowest Cost of Ownership

Liebert NX is sized to minimize capital equipment expenses and designed for optimum efficiency. Its low footprint saves costly floorspace while effectively managing data center facilities with high densities. It provides 100% usable real power with high generator compatibility because of low input THDi, high input PF, low input cable and switch gear rating.



Enhanced Operational Flexibility

In response to the demands of new technologies, the Liebert NX achieves higher tiers of availability or support even with increased densities with minimal disruption to operations. It has configurable battery and standard top cable entry. Liebert NX allows easy configuration of different system architecture like dual bus and parallel ability.



Higher System Availability

Liebert NX provides a mission-critical technology that minimizes single points of failure in your network. A UPS that promises the highest possible availability of your IT systems, the Liebert NX highlights reliability with low mean time to repair (MTTR).



The Liebert NX

Extreme Performance

- Up to 96% Efficiency
- Greater than 99% Input Power Factor
- Less than 3% input THDi

Space Savings

- 200kVA UPS in less than 0.51m² footprint

Truly Adaptive and Flexible

- Top and bottom cable entry
- Less than 400kg for a 200kVA UPS
- Flexible battery configuration: 12Vx 30/32/34/36/40 cell design
- Internal battery compartment option for 30kVA UPS

Unparalleled Efficiency
Low Footprint
Truly Adaptive and Flexible



Efficient and Adaptive Power For Your Critical Applications

The Liebert NX from Emerson Network Power presents an efficient, space saving and flexible solution for your network. With an above industry standard efficiency rate of up to 96% in a compact, low footprint UPS, Liebert NX keeps your network protected while saving on cost and data center space.

With best in class true online double conversion technology, redundancy options and flexible battery configurations, trust the Liebert NX to provide the same level of reliability you have come to expect from the Liebert NX UPS series.

Features and Benefits

- High efficiency rating of up to 96% on true online double conversion mode
- High power density with 200kVA load in <0.51m2 footprint
- Advanced digital signal processor (DSP) and digital control technology to ensure higher system reliability
- Parallel technology allowing four (4) parallel units, without the need for centralized bypass cabinet and additional external modules
- Digital current sharing technology for extremely small circulating current and high parallel reliability
- Wide input voltage and frequency range against harsh utility environment
- Powerful output overload and short circuit capacity enhancing system stability and system safety under extreme conditions
- Intelligent battery management for automatic battery maintenance and prolonged battery life
- 6-inch LCD display available in 12 different languages
- Layered independent sealed duct and redundant fan design, circuit board painting protection and dust filter, offering outstanding protection from harsh environment
- Advanced monitoring and communication capabilities for improved visibility and control
- Lower mean time to repair (MTTR) with front access for maintenance
- Flexible UPS system configuration that works in different modes of operation
- Internal battery compartment option for 30kVA UPS. Giving battery runtime of 10minutes for 30kW and 15minutes for 24kW loads.

Efficiency Savings

Ratings (kVA)	Traditional UPS (92%)	Liebert NX (96%)	Annual Saving	Saving @10 Years
30	\$25,709	\$24,638	\$1,071	\$10,712
40	\$34,278	\$32,850	\$1,428	\$14,283
60	\$51,417	\$49,275	\$2,142	\$21,424
90	\$77,126	\$73,913	\$3,214	\$32,136
100	\$85,696	\$82,125	\$3,571	\$35,707
120	\$102,835	\$98,550	\$4,285	\$42,848
150	\$128,543	\$123,188	\$5,356	\$53,560
160	\$137,113	\$131,400	\$5,713	\$57,130
200	\$171,391	\$164,250	\$7,141	\$71,413

Note: Cost is based on \$0.10 kWh.

Why choose a Double-Conversion UPS?

Only a double-conversion topology provides 100% protection with complete input to output isolation and totally regenerated power. A double-conversion UPS delivers 100% power conditioning, zero transfer time to battery, great stability of output voltage and frequency and better transient suppression than line-interactive units.

Double-conversion systems also offer a wider input voltage window that allows the UPS to absorb deeper sags without having to transfer to battery.

DSP Control

Full digital control technology provides a highly accurate and drift-proof control compared to traditional analog electronics. These features enable the UPS to provide accurate and reliable power protection under a wide range of conditions.



Extended Load Ranges

Modern Data Centers, Blade Servers, and IT applications in general, need more active power. Moreover; In some instances, new Data Centers have capacitive or leading features while traditional systems had inductive power factors, also known as lagging.

Leading Power Factor

This exists when capacitive circuits prevail over inductive circuits. In this case, current is said to be "leading", because its curve on a 2D chart is phase-shifted ahead of the voltage curve. A UPS must be able to work according to real load requirements. While in the past, 0.7-0.8 Power Factor was common for IT applications, today's computers PF is getting closer to 1.

The best investment you can make in a UPS system: Efficiency, Reliability and Value in a compact package.

How can I get the most out of my investment?

- Liebert NX, with its unity power factor (kVA=kW)*, offers more real power to support customer's mission critical loads.
- With up to 96% online double conversion efficiency, Liebert NX saves you operating cost compared to most traditional UPS in the market.

How can I get optimum protection for my network with Liebert NX?

- The double conversion technology of Liebert NX allows it to have an above average industry standard of up to 96% efficiency, giving your network and data center equipment full protection at the most efficient rate.

How can I get the highest levels of Protection and Availability?

- Liebert NX gives you built-in reliability with its stratified cooling technology allowing cooling of critical components and redundant cooling fan option.
- Wider input voltage and frequency tolerances contribute to high power availability.
- Digital controls provide the fastest possible power management to enhance reliability, accuracy and efficiency while reducing component count.
- Dual bus compatibility and system redundancy further enhance the availability of a power.
- High overload protection handles 110% overload for 60 minutes, 125% for 10 minutes, and 150% for 1 minute.

How can I save on my electricity bill and investment costs?

- With up to 96% online double conversion efficiency, Liebert NX saves you operating cost
- The improved input power factor of the Liebert NX can actually reduce your electricity usage.
- It delivers the highest possible input power factor - greater than 0.99 at rated linear and non-linear loads - for maximum efficiency.
- The unique ability of the Liebert NX to adjust power walk-in from 5 seconds to 30 seconds, along with reduced input current distortion and power factor correction, also enables you to save money by reducing back-up generator sizing requirement.
- The unit's compact footprint requires less floor space, leaving you with more room for other equipment.
- Liebert NX has built in Parallel and Load Bus Synchronization (LBS) boards. No extra hardware is needed, it may be easily connected just with control cables.

How can I save floorspace with Liebert NX?

- Liebert NX is a compact UPS with low footprint.
- UPS footprint of a 200kVA Liebert NX is less than 0.51m2.**

How can I satisfy the requirements of the latest servers?

- Liebert NX is capable of driving wide ranges of loads, from 0.5 lagging to 0.9 leading. This makes the UPS follow the latest IT industry trends, with more active power available for all kinds of loads.

How can I also protect also my upstream-connected devices?

- The Liebert NX provides the cleanest level of upstream power with the lowest level of input current THDi in the industry.
- This ensures that clean power flows upstream, avoiding damage to other loads connected to the upstream power distribution bus.

How can I extend the system when I need more power?

- Liebert NX features easy and simple scalability and redundancy. In fact, up to four Liebert NX modules may be paralleled in a redundant configuration for added reliability and serviceability.
- The Liebert NX is compatible with Liebert's unique LBS.

How can I ensure the UPS will work under the most severe conditions?

- The wide input voltage window of 305V-477V and a frequency tolerance of 40Hz to 70Hz provide high quality power, even when input parameters are below standard. This helps minimize transfer to battery, reducing the charging and discharging cycles.
- Back-feed protection sensing ensures system integrity.
- Short-circuit-proof, DSP controlled inverter provides highest output power quality.

* for selected models only

** Please see installation manual details.



How can I easily maintain my UPS?

- Liebert NX includes a built-in maintenance bypass, with IP 20 UPS enclosure protection - even with the front doors open.
- Redundant configuration allows you to utilize one module while the other is being serviced.
- Dual bus compatibility enables you to transfer the load to an alternate power source for maintenance activities.

How can I monitor and communicate with my UPS?

- To meet a variety of needs, the Liebert NX offers communications through web or management systems through MODbus and SNMP communication protocol.

How can I check the status of my UPS?

- The Liebert NX features easy access for service. Thanks to front accessibility of critical components, self-diagnostics and various monitoring options.
- Large and user-friendly LCD display provides operating information in twelve different languages.

How can I satisfy my particular installation needs?

- Flexibility is achieved through many choices including type of battery, number of single and multi-unit configurations, and an array of internal and external power and communication options.
- Auto restart capability provides added availability.
- Ultra-quiet performance with noise levels below 56dBA allows greater latitude in where to place the unit.
- Adjustable power walk-in, numerous user specified settings, a choice of power monitoring communications alternatives and user friendly control are all handled through the menu-driven LCD control panel with detailed data reporting.
- Emerson Network Power is recognized to be a great solution provider. Please contact your local Emerson Network Power office or Liebert representative to receive special solution consultancy.

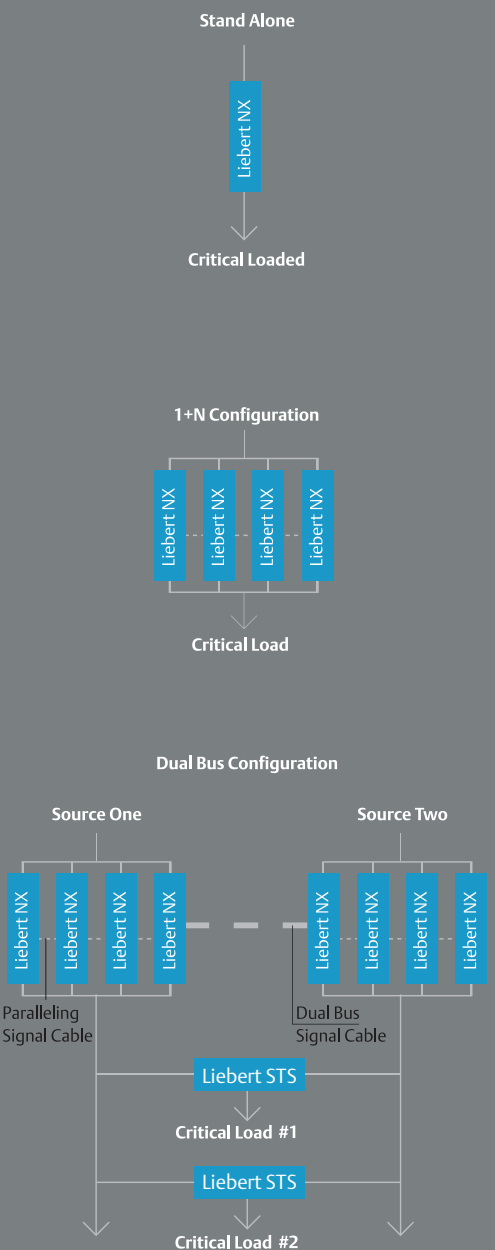
How can I protect and extend the life of my batteries?

- Liebert NX minimizes transfers to batteries with its wide input voltage tolerance down to 305V.
- Temperature-compensated battery charging extends battery life.

Configurations: A Full Range Of Features

To meet all your power availability needs for single or dual input operation, your Liebert NX power system can be utilized with either single or dual power inputs. The dual power feature allows you to take advantage of a secondary power source.

An optional wrap-around maintenance bypass is also offered for the single input configuration.





Addressing a Variety of Needs

Today's advanced systems require power protection that is just as innovative. These systems, however, face many of the traditional threats to their availability - foremost among them is a lack of high quality power required to operate sensitive electronics.

Emerson Network Power goal is solving these challenges with a power solution that combines high performance, operating efficiency, compact size, reliability and total cost of ownership.

Emerson Network Power Liebert NX is the Next Generation of true-online, double conversion digital UPS. Designed to meet the high availability power needs of a wide variety of applications (IT, non-IT, industrial & medical), the Liebert NX combines innovation and simplicity and low total cost of ownership. The result is a power system that delivers both reliability and a return on investment beyond what has been traditionally offered.



Information Technology

- Data Centers
- Servers (LAN, WAN, MAN, ERP, e-mail, web and others)
- Networking

Telecommunication

- Mobile (2G, 2.5G, 3G)
- Paging
- Fixed (including WLL)

Industrial Automation

- Process (including instrumentation)
- Motion (digital drives and robotics) Transport Automation
- Airport automation and flight booking
- Others including railways and road transport automation and ticket booking

Banking, Insurance and Financial Services

Software Development Houses / Software Technology Parks (STP)

Building Automation

- Access Control
- Security System
- Fire Alarm System
- Emergency Lighting
- Other Critical Applications

Medical Diagnostics

- Magneto Resonant Imaging
- CT Scanning
- CathLab

Satellite

- Uplinking
- Earth Stations

Advanced Monitoring and Communications Capabilities Keep You in Control

Power Communication Options

When choosing the best system to protect your mission critical applications, an important consideration would be the software and communication options. As part of our commitment to provide the best solution for you, we offer a wide range of sophisticated software and communication options for Liebert NX.

The most extensive list of optional communication solutions for Liebert NX UPS Systems

Control through Building Management Systems via Modbus and Jbus protocols

- Web-enabled Monitoring and Management through SNMP protocols
- Network Management Systems ready
- Software Solutions
 - Site Monitor Software
 - Facility wide monitoring
 - Shutdown software for your computer equipment
- Simultaneous monitoring via different protocols



Emerson Network Power Service

Emerson Network Power Service offers a wide variety of services and maintenance programs designed to keep your mission critical equipment operating continuously and smoothly. Our aim is to design and offer an overall service package to meet customer's needs from a technical and commercial point of view.

More and more organizations around the world trust Emerson Network Power Service to minimize critical systems emergencies and interruptions. We are backed by the largest technical support and customer response organization in the industry with factory trained customer engineers and service professionals in more than 100 service centers ready to assist in maintaining your uptime, 24 hours a day, every day of the year.

Emerson Network Power Service can provide service capability for your entire business critical infrastructure: from AC and DC power systems, to battery systems, commutation systems and environmental and site monitoring services.

Technical Specifications

Model	NX									
Power	kVA	30**	40	60	90	100*	120	150	160*	200*
	kW	30**	40	60	90	90*	120	150	144*	180*
System efficiency										
AC-AC online double conversion	up to 96%									
Input Parameters										
Rated input voltage	380/400/415VAC, three-phase four-wire									
Rated operating frequency	50/60 Hz									
Input voltage range	305V - 477V at full load -25% to -40% with linear load derating									
Input frequency range	40Hz - 70Hz									
Input power factor	>0.99 at full load, >0.98 at half load									
Input THDI	<3%									
Input walk-in function	Available, 5 - 30s (settable)									
DC Parameter										
Battery Type	VRLA									
Battery Compensation	Yes									
Charger output voltage regulation accuracy	1%									
DC ripple low voltage	≤1%									
Output Parameter										
Inverter output voltage	380/400/415VAC, three-phase four-wire									
Inverter output frequency	50/60 Hz									
Output frequency stability	50Hz/60Hz±/- 0.1%									
Load power factor handling capability (without capacity derating)	0.9 leading - 0.9 lagging									
Voltage stability										
Steady state	< ±1%, typical									
Transient state	+/-5%, typical									
Transient state response time	<20ms									
Inverter overload capacity	1 hour for 110%, 10mins for 125%, 1min for 150%, 200ms for >150%									
Phase Shift										
with 100% balanced load	<1° el									
with 100% unbalanced load	<1° el									
THDv										
100% linear load	<1%									
100% non-linear load	<4%									
Bypass Parameter										
Bypass input voltage	380/400/415VAC, three-phase four-wire									
Bypass voltage range	Default: -20% to +15%, other values, such as -40%, -30%, -10% to +10%, +15% settable through software									
Bypass overload capacity	110% long term; 170% 10 minutes; 1000% for 100ms									
Environmental Conditions										
Operating temperature range	0 - 40°C***									
Storage temperature	-25 - 70°C									
Maximum operating altitude	≤1000m, When operating at 1000>2000m, derated by 1% for every 100m increase of altitude									
Relative Humidity	≤95%									
Noise (1m)	56-66dB, adjusted according to load rate									
IP Class	IP20									
Standards	Safety: IEC 60950-1 / IEC 62040-1 / AS 62040-1-1 EMC: Category C2 of IEC 62040-2 / EN 62040-2 / AS 62040-2 Test and Performance: IEC 62040-3 / EN 62040-3 / AS 62040-3									
Physical Parameters (Dimension: mm)										
Width	600									
Depth	843									
Height	1400									1600
Weight (kg)	155	190	190	225	225	225	295	295	380	

Other voltages (208, 220, 230, 240Vac three-phase four-wire system) are available, please consult Emerson representative for details.

* UPS are 0.9 output power factor
** With internal battery compartment
*** Conditions apply

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