






Power Quality Solutions


Liebert NXa


Next Generation UPS


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Input Total Current Harmonics
- 


Input Power Factor
- 


Scalable up to Six UPS modules
- 


Wide Input Voltage & Frequency Ranges
- 


Dual Bus Compatible
- 

Digital UPS
- 

Self Diagnostic
- 

Simultaneous Communication
- 

Redundant Power Supply Card
- 

Stratified Cooling Technique
- 

Compact Footprint

Liebert NXa

Next Generation UPS



Moving towards hi-tech and more sophisticated devices, systems, networks & applications is the constant endeavor and natural business phenomenon in a B2B (Business to Business) and B2C (Business to Consumer) environment. The Digital Economy keeps giving birth to new needs (Wireless Fidelity Hot Spots, popularly called WiFi Hot Spots or web-enabled home appliances or convergence of Information Technology and Telecommunication to give birth to InfoCom and the likes). As we move forward, the dependence of your businesses or processes on these hi-tech sophisticated applications grows significantly. Maintaining the “Continuity” of these applications, therefore, becomes pivotal to the success of your businesses. The key contributor of this “Continuity” is “Hi-Availability of Quality Power”. In other words, your business success is a function of “Hi-Availability of Quality Power”, in today’s world and the years to come.

Liebert NXa (with true on-line double conversion topology) is carefully designed to appropriately address this “Hi-Availability of Quality Power” need of the B2B and B2C business. Technological advancements, simplicity of global usability and value innovations have been delicately converged in Liebert NXa to offer you the highest possible “availability-to-price” (ATP) ratio to the fullest possible advantage for the users.

Liebert NXa, therefore, signifies Next Generation, Hi-Availability of Quality Power, Digital Green UPS (Uninterruptible Power Supply) to provide you with complete value taking the best possible care of your 360° needs (from financial to application & business needs and from operational to intangible, latent & anticipated needs).

That’s why Liebert NXa is a best-in-class value-innovated global solution.

Liebert NXa comes in four popular ratings: 30, 40, 60 & 80 kVA (400V, 50/60 Hz). All these UPS’s are of identical dimensions [600 mm (W) x 825 mm (D) x 1600 mm (H)].

Liebert NXa (30 & 40 kVA) is designed to house optional battery bank within the UPS cabinet for a specified run time. For your requirements beyond that specified run time (through the in-built battery), external optional battery cabinets are available to address your needs. Liebert NXa (60 & 80 kVA) uses external optional battery cabinet/s to meet your run time requirement.

Top 5 applications of Liebert NXa are:

- Server Rooms and mid-sized Data Centers in the Corporate World, Banks, Financial Institutions, Insurance Companies, etc.
- Telecommunication (Fixed, WiLL & Mobile) Billing & Reporting Computers / Servers and Satellite Up-Linking
- Networks (LAN, MAN & WAN), InfoCom and WiFi Hot Spots
- Industrial Motion & Process Automations for mid-sized plants and Transport Automation
- Medical Diagnostic / Imaging Equipment



Information Technology



Data Centre Rooms



Telecom Facilities



Network



Industrial Facilities

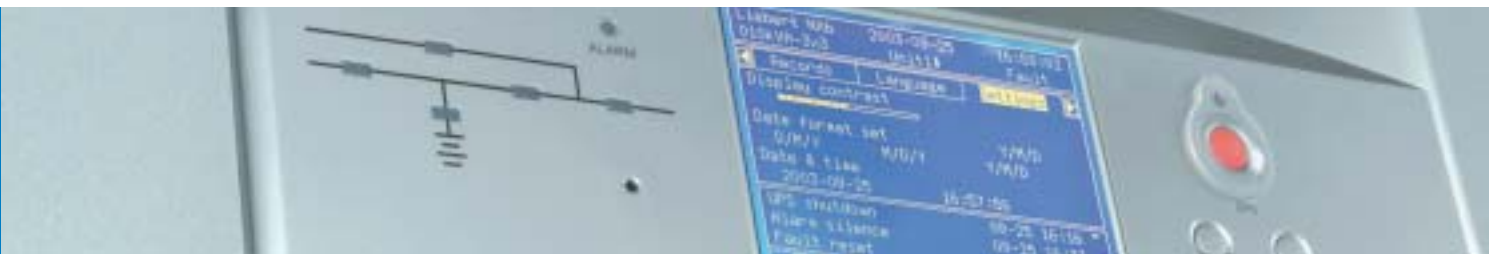


Medical Diagnostics

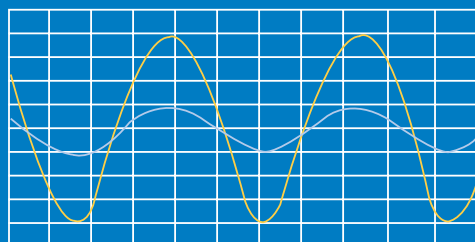
In this document, the word “availability” signifies “high availability of quality power”

Top 10 Customer Values addressed by Liebert NXa are:

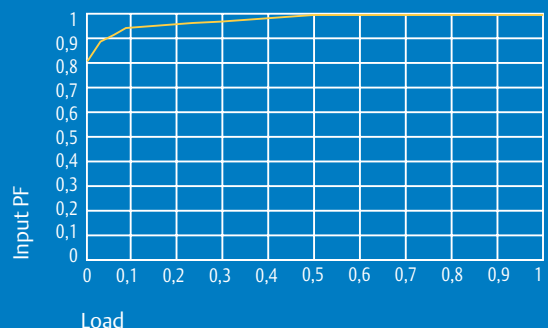
- **Hi-Availability of Quality Power** by way of in-built reliability (redundancy in auxiliary power supply card, stratified cooling technique, optional cooling fans), wider input voltage & frequency tolerances (aiding hi-availability of Quality Power), digital control (enhancing reliability through “reduced hardware count” and “fastest possible accurate decision making”), system redundancy and dual bus compatibility.
- **Reduced Cost of Ownership** by way of improved input power factor (lower electricity bill), digital controller (by way of drift-proof digital components), compact gross footprint (reducing active & passive occupied spaces) and joint mode operations (allowing you to work with smaller generator).
- **Upstream Green Power** achieved through lowest possible level of input current THD (Total Harmonic Distortion) & highest possible input power factor.
- **Ease & simplicity in Scalability & Redundancy** with the parallelibility up to 6 modules without using any centralized controller or centralized static switch.
- **Investment Protection** (for upstream semi-critical loads, UPS, battery and downstream critical & hyper critical loads) by way of wider input voltage & frequency tolerances (minimizing the events of battery discharging), temperature compensated battery charging, back-feed protection, short-circuit-proof inverter, vector controlled inverter (output power quality).
- **Maintainability** by way of built-in maintenance bypass, optional wrap-around maintenance bypass, electrical interlocking system, redundant configuration (allowing you to maintain the redundant modules) and dual bus compatibility (enabling you to transfer the load to alternative bus).



- **Serviceability** by means of front accessibility of critical components, self-checks, self-diagnostics and various monitoring options.
- **Flexibility in Decision Making** through many choices to pick from (e.g. type of battery, number of configurations, array of internal & external power & communication options).
- **User Flexibility** (choice of 12-language LCD, adjustable power walk-in, making myriad user-specified settings, having data through multiple power communications alternatives etc.) and **User Friendliness** (menu-driven LCD with detailed data reporting).
- **Power Communications** by way of Simultaneous Communication (Relay Card, OpenComms Web Card, ModBus / JBus Card, HiroLink, MultiLink Software etc.). Each one is designed to address the specific needs of each business function. For example, OpenComms Web Card will be useful for your Network Manager, while the ModBus / JBus Card will be more desirable to your Facility Manager. Simultaneous Communication techniques used in Liebert NXa appropriately address them all.



— Current
— Voltage



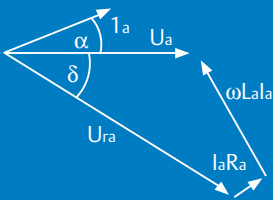
Next Generation Features

Having thoroughly understood & captured the present, latent & anticipated customer needs across the world; the prime focus of the Global Product Development Team of Liebert was to achieve the highest level of value innovations to provide significant value to you. Liebert NXa is a solution of that global initiative of Liebert, which offers you the best-in-class solution at a high availability-to-price (ATP) ratio.

Feature-Need-Value Matrix		Input						DC Circuit & Battery				Static Bypass			
Need Categories	Features	Input Current THDI <3%	Input Power Factor ≥ 0.99	Input Voltage Range (305-477 V)	Input Frequency Range (40-70 Hz)	Input Frequency: 50 or 60 Hz	Adjustable Power Walk-In	DC Ripple Current <5%	DC Ripple Voltage <1%	Battery Black Start	Battery Temperature Compensated Charging	Flexibility to use VRLA or Wet /Flooded or NiCd Battery	Overloading Condition of 1000% for 10 msec	Frequency Adjustment Range	Auto Retransferring Facility
	Customer Values														
Financial Needs	Reduced Investment	●	●				●								
	Lower Cost of Ownership		●												
	Investment Protection	●		●	●			●	●		●				
Application & Business Needs	Reliability			●	●			●	●						
	Hi Availability of Q Power						●			●		●		●	
	Scalability														
	Redundancy														
	Maintainability														
Operational Needs	Safety														
	Input Quality Power														
	Output Quality Power	●	●												
	User Friendliness														
	User Flexibility					●	●			●				●	
	Power Communication														
	Compactness														
Serviceability															
Intangible & Latent Needs	Decision Making Flexibility										●				
	Customer Confidence							●	●						
	Simplicity & Aesthetics														

Customer Values are mapped to major features of Liebert NXa

Transparent Rectifier (Vector Controlled)



Liebert NXa uses a Vector-Controlled PFC (Power Factor Corrected) Rectifier to achieve two improved parameters of high customer value. One is “<3% input current THD (Total Harmonic Distortion)” and the other is “ ≥ 0.99 input power factor (PF)”. The former ensures that almost clean power in the upstream avoiding pollution and therefore damage to the other semi-critical loads connected to the upstream power distribution bus. The later one ensures maximization of active power leading to saving in cost of ownership (in terms of lower electricity bill) and also helps reducing investment in a generator set (by way of minimizing its sizing) and also due smaller cabling size. Overall, Liebert NXa, hence, is an environment-friendly system employing this transparent rectifier, since it is transparent to the utility.

Wider Input Voltage and Frequency Tolerances

Liebert NXa, at full load, can operate with a wider (compared to conventional UPS) input voltage and frequency tolerances of 305 to 477 V and 40 to 70 Hz respectively. This gives you very high availability of quality power (even when the input power quality is far below the acceptable limit of any power quality sensitive device / system) and also protects the investment by way of reducing the charging-and-discharging cycles of the battery bank.

Flexi Power Walk-In

Liebert NXa is designed to have flexible power walk-in by way of adjusting the power walk-in time from 5 seconds to 30 seconds. This gives you the opportunity to have optimized generator sizing (leading to reduced investment for you) and the user flexibility to have different walk-in time period for different paralleled UPS modules (offering user flexibility).

Temperature Compensated Battery Charging

Liebert NXa allows the user to use optional temperature sensors (to be connected to the battery bank) to monitor the temperature of the battery and thereby controlling the battery charging voltage. This helps you to protect the battery investment by way of protecting the battery health. For Internal batteries of 30 & 40 kVA, this feature is standard.

DC Ripple Current of <5%

Liebert NXa is uniquely designed to protect the battery life by substantially reducing the DC ripple current to as low as <5% level (of C 10 Ah Capacity). In addition to that, the DC ripple voltage is <1%. An important investment protection for you.

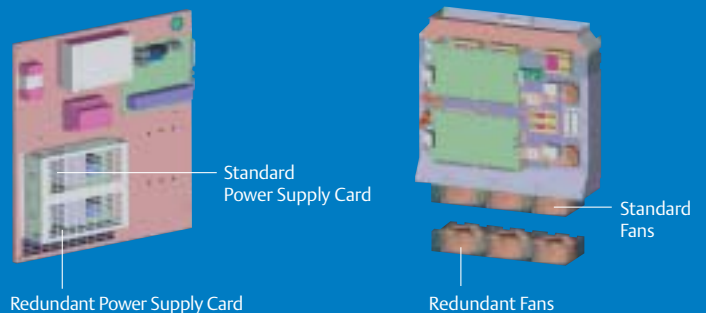
Need Categories	Feature-Need-Value Matrix	Protection			System					Communications							
	Features	Back-Feed Protection	DC Ground Fault Protection Short	Short Circuit Protected Inverter	Digital Controlled UPS	6-IGBT Vector Controlled PFC Rectifier	6-IGBT Vector Controlled Inverter	Hot Standby Configuration	Parallelable up to 6 (Six) UPS Units	Dual Bus Compatibility	Back-lit Large Graphic LCD Screen	12-Language LCD	Detailed Parametric Data Reporting	OpenComms Web Card	ModBus / Jbus Card	Relay Card	HiroLink
Customer Values																	
Financial Needs	Reduced Investment																
	Lower Cost of Ownership				●	●											
	Investment Protection	●	●	●	●	●	●										
Application & Business Needs	Reliability				●	●	●										
	Hi Availability of Q Power							●	●	●							
	Scalability								●	●	●						
	Redundancy							●	●	●							
	Maintainability	●	●	●													
Operational Needs	Safety																
	Input Quality Power					●											
	Output Quality Power				●		●										
	User Friendliness				●						●	●	●	●	●	●	●
	User Flexibility							●	●	●							
	Power Communication										●	●	●	●	●	●	●
	Compactness				●												
	Serviceability										●	●	●	●	●	●	●
Intangible & Latent Needs	Decision Making Flexibility							●	●	●							
	Customer Confidence				●	●											
	Simplicity & Aesthetics				●			●	●	●	●						

Customer Values are mapped to major features of Liebert NXa

Built-In Redundancy

Liebert NXa has the unique feature of built-in redundancy by way of:

- 100% redundancy in the auxiliary power supply card
- 100% fan redundancy (optional) for the cooling of the hyper critical printed circuit boards, critical power module and semi-critical magnetics



Stratified Cooling Techniques

Liebert NXa adopts a unique stratified cooling technique by means of segregating the heat generating components / devices into top 3 groups and then, by employing separate cooling strategies to avoid heat to flow from one group of components to others. As we are aware, the PCB's (Printed Circuit Boards), switchgear & capacitors form the least heat-generating group, while the highest heat-generating group is the power module (housing IGBT's and other semi conductor devices) and the group of magnetic components generates moderate heat. The thermal management of these three groups are optimally stratified to implement appropriate cooling technique for each group to ensure improved reliability, leading to "Hi-Availability of Quality Power" for your critical and hyper critical applications.

Compact Active & Passive Footprints

Liebert NXa is designed to minimize both the active & passive footprints (passive footprint does not include door-opening space). The active footprint is the physical, visible & actual floor space occupied by the cabinet. The passive one is invisible-but-implied space needed for the thermal management &/or accessing critical components like PCB's (Printed Circuit Boards), Capacitors, Fans etc. The active footprint of Liebert NXa is as low as 600 mm (L) x 825 mm (W). The Gross Footprint (= Active + Passive) is also only 600 mm (L) x 825 mm (W), since, for Liebert NXa, the passive footprint is zero. Because, Liebert NXa employs simple thermal management and front-access layout. The cool air is drawn from the front and the hot air is expelled at the top. Simple! Liebert NXa, therefore, does not need any rear &/or side clearances from thermal management viewpoint. Coming to the internal layout, all the standard critical components like PCB's, Devices, Disconnects, Capacitors, Fans (needed to be serviced, if at all needed) are laid out in such a way that, accessing them becomes easy, within the defined boundary of active footprint . This is how Liebert NXa offers you a compact gross footprint, reducing your cost of ownership to the lowest possible level.

Need Categories	Feature-Need-Value Matrix	Output					Unit					Built-In Redundancy			
	Features	Output THD < 0.7%	Output Power Factor 0.7 (lag) to 0.9 (lead)	Output Voltage Regulation < 1%	Output Frequency Regulation < 0.1%	Output Frequency : 50 or 60 Hz	Small Gross Footprint	Stratified Cooling	Top Venting (out) Fans	Front Access	IP-20 With Door-Opened Conditions	Modern Styling	100% Redundant Power Supply Card	100% Redundant Optional Fans for PCBs & Power Module	100% Redundant Optional Fans for Magnetics
Financial Needs	Customer Needs														
	Reduced Investment														
	Lower Cost of Ownership						●								
Application & Business Needs	Investment Protection	●	●	●	●	●									
	Reliability							●				●	●	●	
	Hi Availability of Q Power											●	●	●	
	Scalability														
	Redundancy											●	●	●	
Operational Needs	Maintainability														
	Safety									●					
	Input Quality Power														
	Output Quality Power	●	●	●	●	●									
	User Friendliness														
	User Flexibility														
	Power Communication														
Intangible & Latent Needs	Compactness														
	Serviceability								●						
	Decision Making Flexibility												●	●	
	Customer Confidence							●				●	●	●	
	Simplicity & Aesthetics										●				

Customer Values are mapped to major features of Liebert NXa

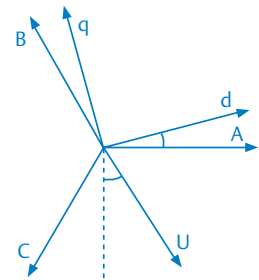
Digital UPS

Liebert NXa uses the most proven DSP's (Digital Signal Processors) to control the entire system. Firstly, these high-speed DSP's allow complex real-time algorithms to be performed in nanoseconds to help the system take the fastest possible decision-making and implementation with high degree of accuracy (fastest possible transient recovery to 95% voltage within < 0.5 millisecond for 0-100% step load or vice-versa). Secondly, the usage of digital controller has drastically reduced the discrete hardware count, leading to higher reliability to your advantage. Thirdly, this digital controller uses appropriate programming languages to ensure parallel data transfer between the processing & management of "real time data" and "management information data". This gives you the true value of quality data management at appropriate speeds. Fourthly, traditional analog electronic components drift over a period of time. Digital controller provides a drift-proof solution to offer you with an ageless brain for your Liebert NXa.



Vector Controlled Inverter

Liebert NXa employs, for its inverter, advanced vector control technique (in conjunction with improved Repetitive & PI Control techniques) to ensure very low output THD and better-than-traditional UPS system's sinusoidal waveform to protect the health of your critical and hyper critical applications in the long term. It is an important investment-protection for you.



Scalability & Redundancy

Liebert NXa is designed to parallel up to as many as six (6) UPS modules to achieve either capacity or redundancy. The system can grow (through scalability) as your business grows or the system can provide you higher availability, as your business demands it. Achieving parallelability of up to six modules does not require any centralized static switch or centralized controller. Thanks to Liebert's unmatched paralleling technique to provide you with three distinct values: reliability (due to reduced hardware), cost of ownership (due to compact system footprint) and reduced investment (by avoiding procurement of costly centralized static switch & controller).

Dual Bus Compatibility

Liebert NXa has the unique feature of achieving dual bus configurations by just connecting two units (under two different output buses) by an optional signal cable. Both the output buses are now synchronized. As you are aware, the optional downstream Static Transfer Switches (STS) will allow you to automatically transfer power (from one bus to the other, whenever the need arises). This gives you next generation values to ensure high availability (Hi 9's) of quality power.

Simultaneous Remote Communications

Liebert NXa has three (3) Intellislots (Liebert's "Intelligent Slots" to house multiple cards to ensure simultaneous communications) to house any of the remote communication aids by means of the following optional hardware:

- Relay Card (to address the basic needs of a user / maintenance persons)
- OpenComms Web Card (to address the needs of a network manager)
- ModBus / JBus Card (to address the needs of a facility manager)

While traditional UPS's do not support this kind of communication systems, Liebert NXa brings to you the simultaneous communication achieved through multi - channel data management technique and multi-channel data highway.



3 Intellislots

Other Remote Communications

Liebert NXa also provides other communications alternatives through RS-232 & RS-485 ports and through HiroLink, IGMNet protocols. These provide you with the opportunity to integrate the communication system with our High Performance Air Conditioning (HPAC) systems. Other than utilizing RS-232 port for remote communication, it can also be used for local downloading of data for the service engineers, while the RS-485 port can be utilized to have remote communications of myriad applications.

Man - Machine Interface (MMI)

Liebert NXa provides excellent local communications through its MMI. The MMI of Liebert NXa uses push buttons (including "Emergency Power Off": EPO), LED-based MIMIC diagram and a large format graphic LCD. While the MIMIC shows you the live power path, the back-lit contrast-adjusting LCD provides you with detailed primary & derived parameters of the unit and the system in twelve (12) different languages through well-structured windows and user-friendly menu.

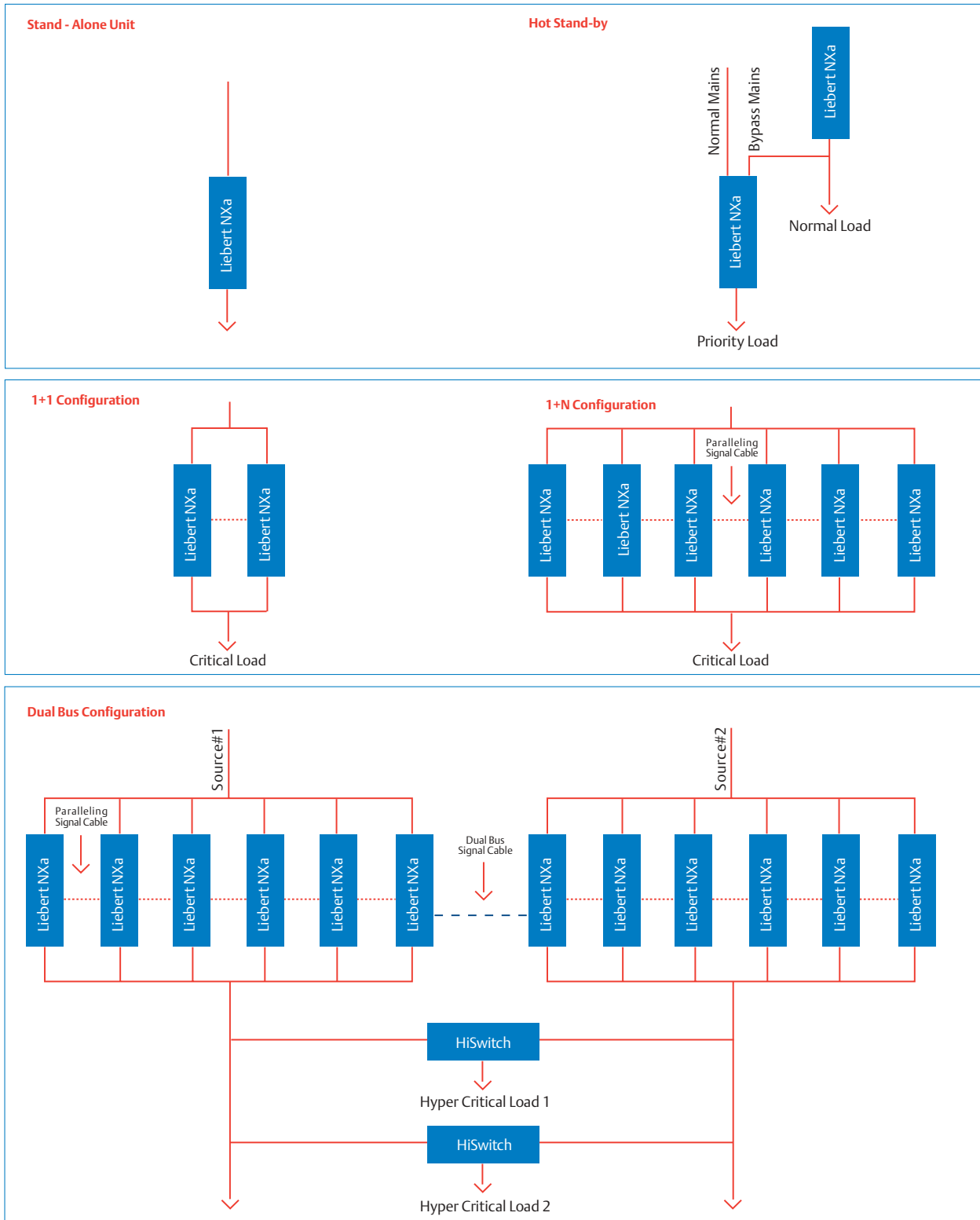


Liebert NXa 60kVA 3x3		2003-10-22 Unit #1		12.30:36 Normal	UPS SYSTEM WINDOW
← Main	Bypass	Output →			UPS MENU WINDOW
Vphase V	A(AB)	B(BC)	C(CA)		UPS DATA WINDOW
Iphase A	220	220	220		
Freq.Hz	20.5	20.5	20.5		
Vline V	50.1	50.1	50.1		
P.F.	380	380	380		
	0.99	0.99	0.99		
Input Breaker Closed	10-12	12:28:16	↑		CURRENT RECORD WINDOW
Manual Turn On	10-12	12:30:06			
Ups in Normal Mode	10-22	12:30:16			
				?	KEYPAD WINDOW
F1	F2	F3	F4	HELP	

Configurations

Liebert NXa is designed to include myriad useful configurations. Top 5 are furnished below:

- Stand - alone unit
- Hot Stand-by (to provide you 100% redundancy)
- 1 + 1 (to provide you 100% scalability or 100% redundancy)
- 1 + N (to provide you with desired level of scalability or redundancy)
- Dual Bus (to provide you with high availability) with the use of optional static transfer switches



Power Communications

Why settle for disaster recovery when you can have business continuity?

Protecting your equipment with a Next Generation UPS like NXa is a giant step towards achieving higher reliability and availability. But it may not be enough if you do not have the right communication tools.

If a timely response cannot be ensured in the event of an unexpected event, or if the maintenance plan and optimal usage of your equipment cannot be carefully done, your efforts may well be wasted. So, as much as you rely on your Power Quality equipment, you will rely on the communication tools available. The key is "all the information you need, at the right time".

Knowledge Is Power

This is why, when you choose the best equipment to protect your critical and hyper critical applications, part of your decision will be driven by what communication options are available.

Even from this point of view, the Liebert NXa has been designed with the customer in mind. For us at Emerson Network Power, enabling communications means letting the customer choose their favourite and appropriate option. This is why we have built around the Liebert NXa a wide range of sophisticated software and communication solutions.

The Most Extensive List

- Simultaneous Monitoring via different protocols to ensure maximum flexibility
- Web Enabled Monitoring and Network Management through SNMP protocol with OpenComms WEB card
- Building Management Systems integration via Modbus and JBus protocols
- Network Management Systems ready (HP OpenView, CA Unicenter, Novell Managewise, IBM Tivoli, etc.)
- Integration with Mobile Phone (GSM, GPRS, 3G) technology, to deliver instant messages (SMS) to the nearest service engineer or service center, even in remote locations.

The Right Tool For The Job

Try one of our Software Solutions for monitoring and power management:

- MultiLink UPS Monitoring and Computer Shutdown software, available for many platforms like Windows, UNIX, Linux, AIX, Solaris, HP-UX, etc.
- The Hirovisor suite of connectivity solutions, that allow you to integrate UPS, Air Conditioning and third party equipment under a sophisticated facility-wide supervision system
- OpenComms Nform Network Device Management solution to offer centralized management of equipment on the same Local or Wide Area Network (LAN or WAN) or ask our Global Services experts to provide you the highest level of availability with our 24 by 7 TeleMaintenance services, which include full power reporting, energy savings information, timely on site intervention and preventive maintenance to ensure the longest lasting life to your investment.



Array Of Value-added Power Options

Liebert NXa offers you an array of value-added power options listed below:

Internal

- Paralleling Kit (for 1+2 to 1+5 configurations for scalability or redundancy, depending on your application & business needs)
- Battery Black Start Kit (for feeding your hyper critical applications utilizing the charged battery in event of non-availability of utility power)
- Battery Temperature Monitoring Sensors (for 60 & 80 kVA or for external additional battery cabinets for 30 or 40 kVA)
- 100% Redundant Fan Kit (for cooling circuits to ensure improved reliability and higher availability)
- Battery Ground Fault Protection Kit
- Seismic Kit

External

- Battery Circuit Breaker Box (for 60 & 80 kVA)
- Battery Cabinet
- Maintenance Bypass Cabinet

Fig.1 Liebert NXa with Narrow Maintenance Bypass Cabinet



Fig.2 Liebert NXa with Narrow Battery Cabinet



Fig.3 Liebert NXa with Wide Battery Cabinet



Fig.4 Wide Battery Cabinet for Liebert NXa

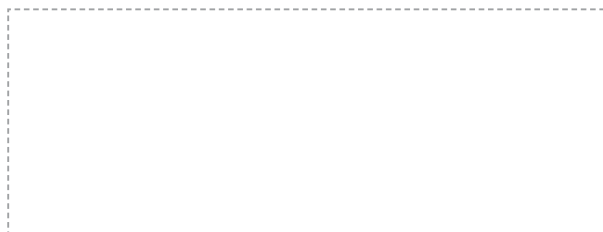


General Characteristics [Liebert NXa]

Models	UoM	NXa 30	NXa 40	NXa 60	NXa 80
Nominal Power Rating at 0.8 PF	kVA	30	40	60	80
Input Parameters					
Rectifier Type		IGBT-based Vector Controlled PFC (PF Corrected)			
Input Voltage to Rectifier	Vac	380 / 400 / 415** (400V : Nominal) 3-ph, 3-w			
Input Voltage to Bypass	Vac	380 / 400 / 415** (400V : Nominal) 3-ph, 4-w (Ph+N)			
Permissible Input Voltage Range for Rectifier	Vac	305 to 477			
Input Frequency	Hz	50 or 60			
Permissible Input Frequency Range for Rectifier	Hz	40 to 70			
Input Current THD at nominal voltage	%	< 3* without any Filter			
Input Power Factor at nominal voltage		≥ 0.99* without any Filter			
Flexi Power Walk-In	seconds	5 to 30 (selectable)			
Battery					
Battery Type		VRLA (Valve Regulated Lead Acid) or Wet / Flooded or NiCd			
Nominal Battery Bus	Vdc	480 (Float Voltage : 540V)			
End-Cell Voltage	Vdc / Cell	Selectable from 1.70 to 1.90 (for VRLA)			
DC Ripple Current in float mode	%	<5 (of C10 AH capacity) RMS value			
DC Ripple Voltage in float & Const V Ch.mode	%	<1 (RMS value)			
Temperature Compensated Battery Charging		Standard (for in-built batteries for 30 & 40 kVA) and Optional (for all other battery configurations)			
Battery Black Start Facility		Optionally available without increasing footprint			
In-Built VRLA Battery		Optionally applicable for 30 & 40 kVA			
Output Parameters					
Inverter Type		IGBT-based Vector, Repetitive & PI Controlled			
Output Power	kW	24	32	48	64
Output Voltage	Vac	380 / 400 / 415** (400V : Nominal) 3-ph, 4-w (Ph+N)			
Output Voltage Regulation	%	+/- 0.5 (3-phase RMS average)			
Output Frequency	Hz	50 or 60			
Output Frequency Regulation	%	+/- 0.05			
Output Voltage THD at nominal voltage	%	1% (max)			
Capability to handle High Crest Factor Load		3: 1 (compliant with IEC 62040-3)			
Capability to handle Step Load		0-100 or 100-0			
Transient Recovery	mseconds	< 0.5 (recovery to 95% of the voltage level) 10 (recovery to 99% of the voltage level)			
Capability to handle Leading PF Load		Up to 0.9*			
Voltage Displacement	° el	120° +/- 1° el (with 100% unbalanced load)			
Compliance to EMC Class-A		Applicable for both Radiated & Conducted			
Overload Conditions at nominal input voltage	% FL	110 for 60 minutes 125 for 10 minutes 150 for 1 minute			
Physical Parameters & Standards					
Width	mm	600			
Depth	mm	825			
Height	mm	1600			
Weight (approx.) without battery	kg	312	341	401	445
Colour		Pantone 877 (Silver Grey)			
100% Fan Redundancy		Optional			
Degree of Protection for UPS Enclosure		IP 20 even with front door in opened condition			
Standards & Conformities		IEC 62040-3, IEC 62040-2, IEC 62040-1-1, IEC 60146-1-1, IEC 61000-4-2, 4, 5, 6, 8, 11, EN 50091-1-1, EN 50091-2, EN 50091-3, EN 60950, EN 60529, ANSI C62.41 (IEEE 587)			
Environmental Parameters					
Storage Temperature Range	° C	-20 to 70 (UPS) & -20 to 30 (Battery)			
Operating Temperature Range	° C	0 to 40 (UPS) & 25 +/-5 (Battery)			
Relative Humidity	%	0 to 95 (non-condensing)			
Maximum Altitude above MSL (Mean Sea Level)	m	1000 (as per IEC 62040/3)			

* At Input Voltage THD of ≤ 2%; ** 4-5% more power output for 415V input & output (conditions apply); ° LCF load; * with suitable derating in certain conditions.

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