PROTECTING THE ENTERPRISE

The need to safeguard critical operations from power problems can be solved through the use of large-scale UPS systems.

A Powerful Defense Against Uptime Threats

Liebert offers a full range of enterprise power protection solutions for any size facility from a small computer room to the largest data and communications centers.

Liebert Enterprise UPS Solutions Are Ideal For

- Large-Scale Data Centers
- Facility-Wide Networks
- Large-Scale Telecommunications Centers
- Colocation Facilities
- Internet Data Centers
- Server Farms
- Data Warehouses
- Network Management Centers
- Medical Imaging Equipment
- Test and Laboratory Facilities
- Industrial Process Control Operations

LIEBERT NFINITY®

AN EASILY SCALABLE, INCREDIBLY INTELLIGENT, REMARKABLY REDUNDANT UPS THAT TAKES SYSTEMS AVAILABILITY TO THE NEXT LEVEL

The Liebert Nfinity power system is a scalable 4 to 16 kVA or 12 to 20 kVA UPS designed with N+x parallel redundancy to provide a fault-tolerant network of power protection. Its modular design was devised to provide easy scalability to users as their power demands grow. Configurations can be cost-effectively upgraded without re-investing in a new system or installation.

A True On-Line System That Delivers Continuous, Regenerated Sinewave Output Power

The Liebert Nfinity is a true on-line, double-conversion UPS that delivers 100% power conditioning, zero transfer time to battery, no change in output voltage and better transient suppression than line-interactive units.

Its unique frame design houses all of the modular system components, including 4 kVA power modules, battery modules and system control modules. By simply installing additional power or battery modules, you can expand your current system, extend backup runtime or add redundancy.

Built-in intelligence is provided by system level and individual module microprocessor controls which increase UPS functionality, communications and reliability. Nfinity also offers added reliability with internal bypass and optional redundant monitoring.

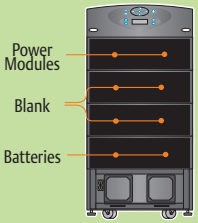
The system's fault-tolerant design enables the intelligent power and battery modules to take themselves off-line if there is a problem...without compromising system integrity.

- Intelligent power modules provide protection from all power aberrations, and a patent pending electrical-current-sharing technology provides equal distribution of power among all modules. Liebert Nfinity power modules feature power factor correction (PFC) to create a sinusoidal input current waveform.
- The IntelliBattery™ modules utilize multiple sensors to continuously monitor battery voltage, current and temperature to determine and predict performance.
- The IntelliControl™ module works with the user interface to provide vital information about the condition of the power and battery modules. An optional paired system control ensures that operations and communications are always available in the event of any single failure.

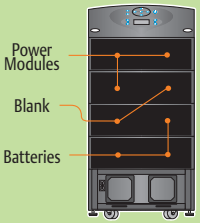
Additional Features Of The Liebert Nfinity Power System:

- Patent pending frame design that houses all of the modular system components
- Hot-swappable modules that allow the user to replace modules or upgrade the system without disturbing connected equipment
- Continuous self-diagnostics that detect and isolate faults to prevent cascading system failures, as well as to simplify maintenance and troubleshooting
- Patent pending intelligent bypass technology that provides seamless transfers to and from the bypass source
- Wide input voltage window that minimizes battery operation to maximize battery life
- Fully assembled and factory-tested, simple to install and ready for use for a plug-and-play solution that is functional right out of the box
- Additional battery cabinets can be added for backup times up to 72 hours
- Two-year limited warranty for repair or replacement of your Liebert Nfinity UPS during the initial warranty period with warranty extensions also available

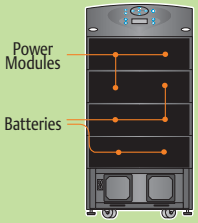
Initial System
4 kVA Redundant

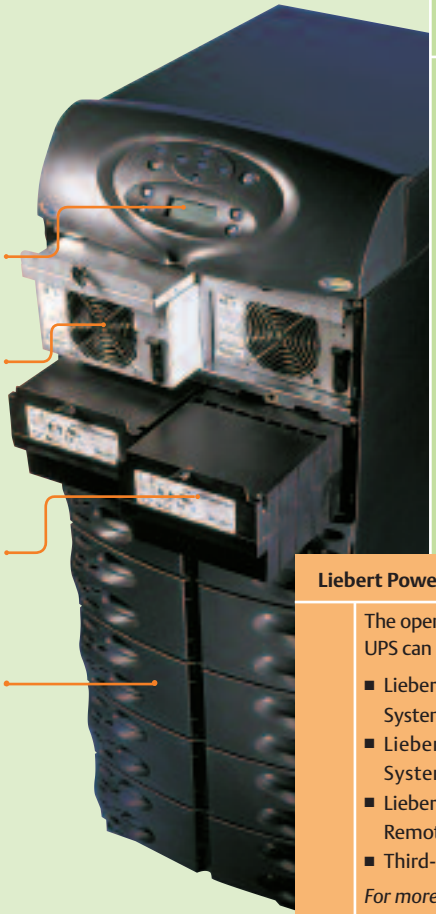


Upgrade
System Capacity
8 kVA Redundant



Extend System
Run Time
8 kVA Redundant





The system control module provides communications and control for the unit.

The system utilizes independent 4 kVA power modules. Up to six power modules can be operating at one time.

Each battery module is composed of ten individual 12-volt batteries encased in a plastic housing.

Power and battery modules are housed in identical bays within the frame. Power modules must be contained in the top half of the frame, while battery modules can be utilized in any of the bays. This allows battery backup times to be configured to customer needs.

Liebert Power Monitoring Capabilities

The operation of the Liebert Nfinity® UPS can be monitored using

- Liebert MultiLink® Automated System Shutdown Software
- Liebert Nform™ Monitoring System
- Liebert Universal Monitor and Remote Power Monitor Panels
- Third-Party Monitoring Systems

For more information, see pages 42 and 43.

LIEBERT NX UPS

POWER DESIGNED TO GROW WITH YOUR NEEDS

The Liebert NX is a true on-line, double conversion, three-phase UPS systems that delivers complete, centralized power protection for mission-critical systems. Designed to meet the high availability power needs of a wide variety of IT applications, the Liebert NX UPS combines advanced operating features, compact size and low cost of ownership in a range of sizes to suit room or data center needs.

Liebert NX 10, 15, 20 & 30 kVA UPS — Increases growth flexibility by handling larger loads, and offers the ability to parallel like-sized 20 and 30 kVA modules for increased capacity and redundancy.

Liebert NX 40, 60, 80, 100, 120 kVA UPS — Available with Liebert Softscale™ technology that provides flexibility to increase UPS capacity by 20 or 40kVA without changes in your infrastructure. Allows paralleling of unlike-sized models for capacity or redundancy. Designed for optimized performance with the same high efficiency at 40% utilization as at 100% utilization.

Liebert Power Monitoring Capabilities

The operation of the Liebert NX UPS can be monitored using

- Liebert IntelliSlot Web Card
- Liebert MultiLink® Automated System Shutdown Software
- Liebert Nform™ Monitoring System
- Liebert SiteScan® Web Comprehensive Facility Monitoring System
- Liebert Universal Monitor and Remote Power Monitor Panels
- Third-Party Monitoring Systems

For more information, see pages 42 and 43.

Liebert NX UPS systems incorporate a number of exceptional technical features:

- Wider input voltage and frequency tolerances contribute to higher system availability by minimizing battery usage.
- High overload rating handles 125% for 10 minutes, 150% for one minute and a 1000% overload for 10 milliseconds.
- Digital controls provide the fastest possible power management to enhance reliability, accuracy and efficiency.
- Front access for easy installation and servicing of unit.
- Triple-mode battery charger for fast battery recharge.
- Compact footprint requires less floor space, leaving you with more room for other equipment

LIEBERT NPOWER™

INNOVATIVE POWER PROTECTION FOR MAXIMUM POWER QUALITY

Liebert Npower is the next generation of large-scale UPS, utilizing true double-conversion on-line technology to protect against the full spectrum of input and output power disturbances. Liebert Npower's all-digital ActiveStar™ controls are DSP-based and feature a unique, patent-pending technology that allows it to make ultra-fast adjustments to changing loads, including subcycle pulse-width corrections to keep the output voltage waveform nearly flawless. The Liebert Npower system is available in seven models ranging from 30 kVA up to 130 kVA.

The Liebert Npower is rugged enough to handle load branch faults, input faults, 100% step loads, PDU startup inrush and motor-load startup. Output voltage distortion (THD) typically measures less than 2.5% — even under worst-case conditions. The combination of rugged inverter and continuous-rated static switch gives the Liebert Npower exceptional overload capability.

Standard And Optional Features Of The Liebert Npower UPS:

- 1+1 redundant configurations (for single-bus systems) that allow concurrent maintenance resulting in virtually 100% availability of conditioned power
- Load bus synchronization option for dual-bus systems with two power feeds for added availability (for use with Liebert transfer switches or dual-input PDUs)
- Excellent efficiency powering non-linear, unbalanced and crest loads
- Small footprint in a full-featured system
- Exceptional overload and transient performance
- All DSP-controlled UPS
- Easy-to-read screen and navigation menu on a large LCD display
- Superior battery algorithms used to minimize operation of batteries and include self-test and temperature compensated charging

Liebert Power Monitoring Capabilities

The operation of the Liebert Npower UPS can be monitored using

- Liebert MultiLink® Automated System Shutdown Software
- Liebert Nform™ Monitoring System
- Liebert SiteScan® Web Comprehensive Facility Monitoring System
- Liebert Universal Monitor and Remote Power Monitor Panels
- Third-Party Monitoring Systems
- Liebert BDS-40 Battery Monitoring Alber Technology By Liebert

For more information, see pages 42 and 43.

LIEBERT SERIES 610

ULTIMATE RELIABILITY FOR LARGE-SCALE, MISSION-CRITICAL APPLICATIONS

Offering the ultimate in power protection efficiency and reliability for larger facilities, Liebert Series 610 UPS systems are available in a wide range of capacities from 100 kVA to 1000 kVA. These systems are designed to protect mission-critical operations from the full range of power quality problems and outages.

Efficient IGBT (insulated gate bipolar transistor) technology is combined with pulse width modulation/stepwave topology to provide reliable operation and create a unit that packs more capacity into a smaller footprint.

Thanks to all-digital controls and a unique inverter topology, the Series 610 can be applied in several single-bus configurations, including single module, parallel redundant and isolated redundant systems. For added reliability, multiple units can be utilized in a dual-bus system with two power feeds to provide redundancy during normal operation, as well as continuous, shutdown-free operation when service is required.

Liebert Power Monitoring Capabilities

The operation of the Liebert Series 610 UPS can be monitored using

- Liebert MultiLink® Automated System Shutdown Software
- Liebert Nform™ Monitoring System
- Liebert SiteScan® Web Comprehensive Facility Monitoring System
- Liebert Universal Monitor and Remote Power Monitor Panels
- Third-Party Monitoring Systems
- Liebert BDS-40 Battery Monitoring Alber Technology By Liebert

For more information, see pages 42 and 43.

Other features include:

- Higher DC bus utilization provides higher AC/AC and DC/AC efficiency and allows a relatively smaller battery.
- Continuous improvement dramatically improves reliability by reducing the number of parts—and the potential points of failure within the system.
- Lower operating costs and long life thanks to 93% operating efficiency and an industry leading power factor of greater than 0.92 for all models.
- The ability to handle unbalanced and 100% non-linear loads.
- Lower heat output eliminates the need for complex air cooling arrangements.
- Robust inverter manages overloads and faults without the need for a static switch on the system output.
- Designed for intuitive, menu-driven operation, a large backlit LCD operator interface displays system controls, full-featured monitoring and alarm notifications.

LIEBERT FS FLYWHEEL SYSTEM

RELIABLE RIDE-THROUGH ENERGY STORAGE, WITH OR WITHOUT BATTERIES

The Liebert FS flywheel DC energy storage system is designed to be a more efficient and reliable alternative to standard battery systems used with uninterruptible power supply (UPS) systems. The advanced, high-RPM, composite flywheel technology used in the Liebert FS provides 190 kW of instant ride-through DC power and voltage stabilization for approximately 10 seconds—more than enough for the vast majority of electrical disturbances.

The Liebert FS can be used as the sole back-up DC energy device or in conjunction with conventional battery strings or generator sets. When used along with batteries, the flywheel system will eliminate their use for short power fluctuations, helping to extend life and save capacity for longer outages. It can also be used alone to provide ride-through power until back-up generators come on line.

The Liebert FS is engineered to support larger Liebert UPS systems, including the Liebert Npower and Liebert Series 610 models. A single flywheel can be sized to support UPS systems up to 225 kVA. Multiple flywheel systems can operate in parallel to support larger systems.

System benefits include

- The compact, lightweight, and reliable Liebert FS flywheel system is safe and environmentally friendly.
- Offers a low installation cost, small footprint, low maintenance and long operating life.
- Unlike batteries, the Liebert FS uses no toxic metals and emits no explosive gases.
- Provides quick recharge, operates under a wide range of temperatures.
- Patented safety system provides a safe shutdown under all circumstances.
- When used with batteries, becomes the primary DC energy source of more than 98% of power disturbances (most power disturbances last less than 4 seconds), reserving the battery for longer outages, extending battery life and improving overall UPS output reliability.
- When used in a batteryless configuration, provides the needed short-term DC energy bridge to an engine generator.