

Liebert® APM™ UPS, 15-90 kVA/kW
Scalable, Highly Efficient, Row-Based Power Protection



SCALABILITY. FLEXIBILITY. EFFICIENCY. INTELLIGENCE.

A Scalable UPS as Dynamic as Your Data Center



Prevent power interruptions and ensure the future flexibility and efficiency of your data center infrastructure, with the Liebert® APM™ UPS. Leverage the innovative modular configuration, cost-efficient operation and flexibility to match increasing power demands all while ensuring critical reliability.



Availability and flexibility is enhanced with standard and optional features

Obtain redundancy and scalability using innovative Liebert FlexPower™ core assemblies. Each includes distributed intelligence and scalable power in one common module.

This technology allows configuration of a completely redundant power and control system, sized to match the capacity of the protected equipment. When power requirements change, capacity is easily added – without increasing the system footprint.

The Liebert APM UPS scales from 15 to 45kW in a cabinet configuration that includes internal batteries, or from 15 to 90kW in 15kW increments in a configuration that reserves a cabinet for capacity that is paired with an external battery cabinet. This approach allows for right-sizing of the UPS, resulting in improved energy efficiency and reduced power expenditures.

Liebert APM UPS supports dynamic environments and IT growth

Flexibility

- Capacity can be expanded in 15kW increments using FlexPower assemblies
- 45kW model includes internal batteries and can also obtain extended run time with external battery cabinets
- 90kW model uses external battery cabinets only
- Easy Installation – front service access, smaller footprint
- 208V, 480V and 600V input configurations
- Matching bypass and distribution cabinet – increase reliability and safety by switching the protected load to bypass power for maintenance and service
- Top or bottom cable entry – enables installation on raised or non-raised floors



The row-based Liebert APM is ideally suited for:

- Small to medium-size data centers
- Server rooms
- Production areas
- Labs and testing facilities
- Telecommunications
- Process control centers
- Edge of the network locations

Resilient and Reliable for Mission Critical Applications



Independent Static Bypass assembly with Liebert Intellislot® ports

The Liebert® APM™ UPS ensures reliable operation through quality components, intelligent design, and the industry's largest local support network.

Higher Availability

- Minimizes single points of failure
- Redundant Internal power supply
- Distributed controls – each FlexPower™ core assembly includes DSP controls
- Standalone static bypass module – features independent controls in separate assembly to provide higher reliability
- Parallel UPS Systems - configure for redundancy or increased capacity

Capacity and Agility, On Demand

With the innovative FlexPower modules, capacity deployments can occur rapidly.



Liebert APM 45 kW UPS with internal batteries



FlexPower core hardware assemblies enable quick and easy capacity increases

Expand for capacity or redundancy in 15kW increments within a single cabinet – 15kW to 45kW to 90kW.

FlexPower assemblies may be added without powering down connected equipment

Distributed controls – each FlexPower core assembly includes DSP controls, minimizing possibility of single point of failure

Standalone static bypass module – features independent controls in separate assembly to provide higher reliability



Liebert APM 90 kW UPS

Efficient Design and Operation Through-out the Lifecycle



Economical and efficient – saves on operating and capital expenses

Liebert® APM™ UPS offers excellent efficiency, up to 94% in double conversion and up to 98% in Active Eco-mode. More importantly, with its optimized modular design, high efficiency levels can be obtained with the initial system, instead of purchasing larger capacity systems to anticipate future requirements.

- Low Total Cost of Ownership
- High-efficiency rating (up to 94%), from 50-100% load
- ENERGY STAR® qualified UPS
- Expand as you need with the flexibility to add capacity as demand increases
- One-year warranty – provides full system coverage

Dynamic Configurations Enhance Deployment

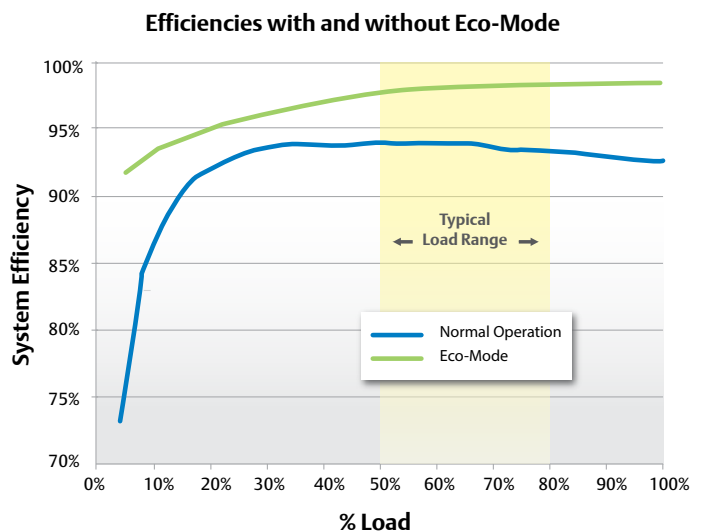
UPS Cabinet

- One assembly per cabinet may be used for redundancy (up to 30kW + 15kW redundant; up to 75kW + 15kW redundant)



From left: Liebert APM BDC – Liebert APM UPS – Liebert APM External Battery Cabinet

Liebert APM UPS Efficiency Curve



The 90kW Liebert APM UPS at full load has up to 2% efficiency advantage over competitive UPS, saving up to \$1800 annually (assuming \$0.10 per kW/Hr)

Bypass Distribution Cabinet

- External maintenance bypass for complete serviceability while load is running on bypass utility power
- Integral distribution saves space and cost
- Kirk-key interlock ensures proper operation
- 65 kAIC rating meets high electrical withstand requirements

Battery Cabinet

- Add runtime for 45 kW system; required for 90 kW system
- Optional Albér® BDSi™ factory integrated battery monitoring for proactive battery management to ensure availability

Intelligence — Where and How You Need It



The Liebert® APM™ UPS provides robust, flexible ancillary features to ensure the system meets your demands.

Simple and Comprehensive Monitoring

The menu-driven control panel on Liebert APM UPS is easy to read and use. Multiple parameters are monitored; data is recorded, stored and easily viewable. Unit metering and status information is displayed in a logical format, and is selectable in multiple languages. The UPS also includes three Liebert IntelliSlot® ports for web-based communications capability:

- Liebert IS-UNITY-DP allows 2 simultaneous 3rd party communication protocols, LIFE™ Services and environmental sensor support
- Liebert IntelliSlot card IS-WEBL allows communication with Liebert Nform™ and web page access
- Liebert IntelliSlot IS-IPBML offers Web Configuration, Telnet and Modbus or BACnet IP for connectivity to a Building Management System
- Liebert IntelliSlot IS-485L offers serial configuration and Modbus 485 connection to a Building Management System or Liebert SiteScan®

Enterprise-Quality Batteries Increase Reliability

Battery quality is key to the reliability of the UPS and to the availability of the protected equipment. Liebert APM UPS provides the same reliable battery technology that supports enterprise UPS systems.

- Lower initial cost
- Better service life
- Fewer batteries = less maintenance, fewer cells to fail
- Battery warranty – 3 years full warranty, 7 years pro-rated
- Backed by the largest service organization in the industry
- Optional Albér® BDSUi™ in external battery cabinet ensures battery reliability by constantly monitoring each battery, allowing for proactive management (see page 6 for more information).

Simplified Monitoring with the Unity Communications Card



- Up to 10 Liebert sensors can be wired in series and can report a discrete SNMP trap when their status changes
- Any SNMP monitoring and notification software, such as Liebert Nform can be used
- Monitor temperature, humidity, door open status, leak detection and more



Shown: Optional Albér® BDSUi™ integrated battery monitoring

Intelligence — Where and How You Need It

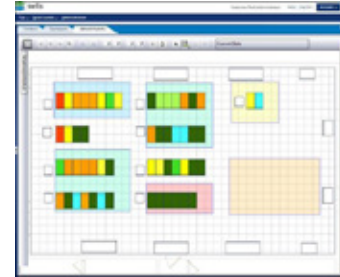


Innovative technologies make the Liebert® APM™ UPS an intelligent device for enhanced connectivity, visibility and control

Management and Control Solutions

The UPS includes multiple Liebert communication ports for important connectivity and visibility for rich infrastructure management:

- **The Trellis™ Platform:** Provides robust Data Center Information Management (DCIM) capabilities using selectable modules and suites.
- **Liebert SiteScan®:** Offers centralized monitoring and control of all critical infrastructure systems, using a variety of network protocols.
- **Liebert Nform™:** Enables data center monitoring for any SNMP device that supports a network interface.
- **Third party BMS systems:** integrates seamlessly



The Trellis Platform



Liebert SiteScan



Liebert Nform

Albér® Battery Monitoring Systems:

With a new, easy to use software interface, the factory integrated Albér BDSUi™ or stand alone battery monitoring system provides advance warning of pending UPS battery failures, the most common cause of unplanned data center outages.

Utilizing its patented DC resistance testing method, the Albér BDSUi provides real-time system and component level visibility by verifying the state of health of the entire battery system.



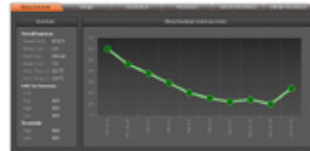
Albér Battery
Xplorer Dashboard

System View



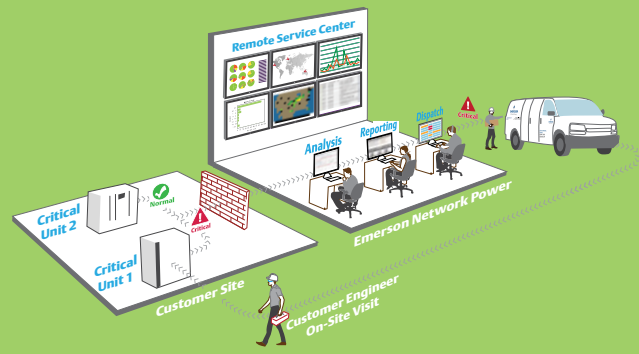
View data on parallel battery strings simultaneously

String View



View a trend graph showing the history of all the string level parameters

Services Can Provide Local or Remote Coverage, 24x7



Critical Services and Support

LIFE™ Services, offered by Emerson network Power, provides increased uptime and operational efficiency through continuous monitoring, expert analysis, and proactive response that ultimately helps you optimize the health of the Liebert® APM™ UPS and have peace of mind.

Detailed parametric data is continuously captured with advanced technology embedded in the Liebert APM UPS. The data is transmitted safely and efficiently to an authorized remote service center staffed with system engineers. Should an operating anomaly or alarm condition arise, the engineer performs an immediate analysis and initiates an appropriate response to quickly, safely, and accurately restore to its proper operating condition.

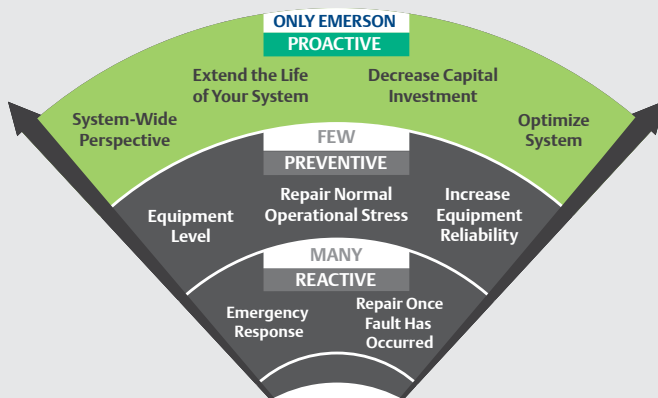
- 24x7 continuous remote monitoring
- Expert analysis and diagnosis
- Quick, safe and accurate response

LIFE Services offers following benefits:

- 1. Uptime assurance** delivered by 24x7 monitoring; early detection of trends and operating anomalies that may lead to critical failures if not addressed; and interpretation of alarm and status messages to understand potential impact.
- 2. Rapid incident response** delivered by the Liebert APM UPS alarm messages and relevant data automatically transmitted for analysis, trending and diagnosis; remote diagnosis of the equipment while customer engineer is being dispatched to the site; and shipment of parts necessary to perform the corrective maintenance.
- 3. Increased insight and ease of management** delivered by notification of operating conditions that may impact the health of the Liebert APM UPS; explanation of critical system health with trend and analysis reports delivered quarterly; and integration of services from remote detection of critical and anomaly conditions through on-site response to restore the critical system.



Emerson Network Power, Liebert Services



The Emerson Difference

Maximizing the performance and efficiency of your data center's uninterruptible power supply (UPS) and other power distribution systems requires systems be properly maintained by factory-trained technicians. Trust Emerson Network Power, Liebert Services to take your critical maintenance to the next level — proactive maintenance that can significantly extend the life of your power systems, decrease your capital investment, optimize system efficiency and effectiveness, and increase overall system availability.

Technical Specifications – Liebert® APM™ UPS

Power Rating – kW/kVA	15, 30, 45	15, 30, 45, 60, 75, 90
Frame Size	45kW	90kW
Input AC Specifications		
Phase	3	
Power Factor	0.99 lagging minimum at full load	
Frequency Range	40-70 Hz	
Input Voltage	208, 220, 480, 600VAC, 60Hz, 3-phase, 4-wire plus ground	
General Specifications		
UPS Technology	On-Line, Double Conversion	
Battery Specifications		
Battery Test Type	Online	
Battery Technology	Valve-regulated lead acid battery; supplied by EnerSys	
Output AC Specifications		
Voltage	208/120, 220/127VAC, 60Hz 3-phase, 3- or 4-wire plus ground	
Frequency – Hz	60 Hz	
Communications		
Communications Options	Liebert IntelliSlot IS-485EXT, Liebert SiteScan, IS-WEBL, Liebert Nform	
Physical Data UPS		
Dimensions, W X D X H in (mm)	31.8 x 39.5 x 78.7 (800, 1000, 2000) Note: 12 inches of rear clearance required for cooling	
UPS Rating	Unit Weight lb (kg)	
15kW	919 (417)	705 (320)
30kW	994 (451)	780 (354)
45kW	1069 (485)	855 (388)
60kW	NA	930 (422)
75kW	NA	1005 (456)
90kW	NA	1080 (490)
Physical Data Bypass Distribution Cabinet		
Dimensions, W X D X H in (mm)	23.625 x 39.5 x 78.75 (600 x 1000 x 2000)	
Weight lb (kg)	902 (410)	
Physical Data Battery Cabinet		
Dimensions, W X D X H in (mm)	23.625 x 39.5 x 78.75 (600 x 1000 x 2000)	
Weight lb (kg)	1554 (705) with Hx150 batteries, 1693 (768) with HX205 batteries, 2101 (953) with HX300 batteries, and 2366 (1073) with HX330 batteries.	
Environmental		
Operating Temperature, °F (°C)	UPS: 32° to 104°F (0-40°C); Battery: 68° to 86°F (20-30°C)	
Relative Humidity	0% to 95%, non-condensing	
Operating Altitude	Up to 3,300 ft. (1,000m) without derating	
Acoustical Noise, db, at 39 in.	Less than 56 dBA typical, 3.3 ft. (1m) from the unit	
Agency/Certification/Conformance		
	Listed to UL 1778 and UL 924 UPS standards, and CSA certified. Meets current requirements for safe high performance UPS operation. ENERGY STAR® qualified UPS – 208V models	
Warranty		
Standard	1 Year	

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