VERTIV™

Liebert®

APM™ UPS

18kW - 90kW

The Flexpower Technology
for mission critical applications

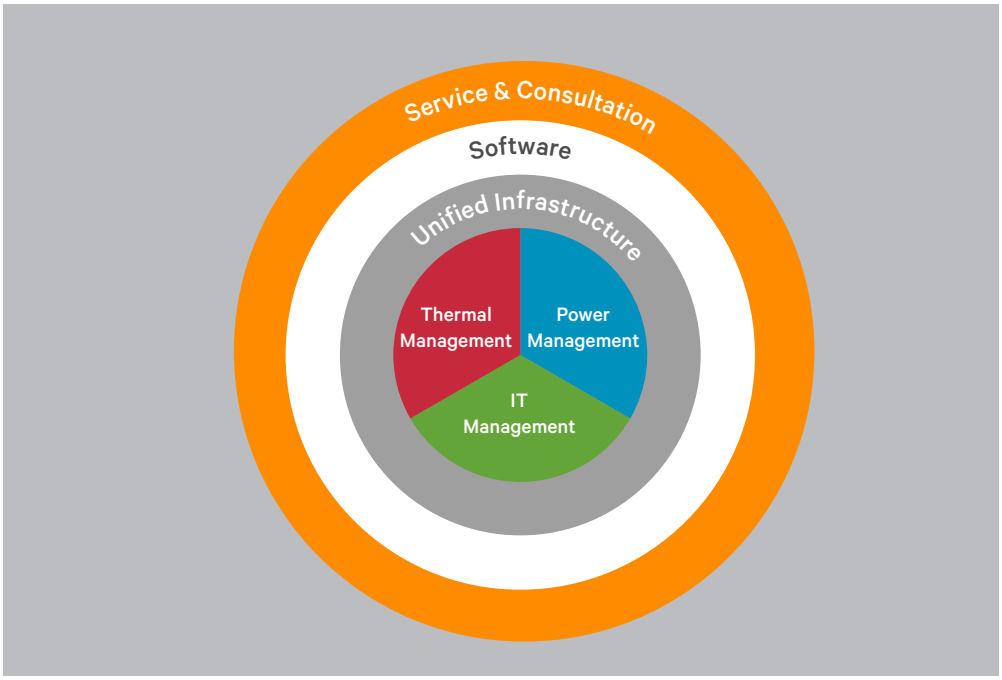
Vertiv, formerly Emerson Network Power, designs, builds, and services mission critical technologies that enable vital applications for data centers, communication networks, and commercial & industrial environments.

We support today's growing mobile and cloud computing markets with our portfolio of power, thermal and infrastructure management products, software and solutions, all complemented by our extensive global service network.

We help strengthen the world's most vital applications by bringing together global reach and local knowledge, and our decades-long heritage, including brands like Chloride, Liebert, NetSure, and Trellis.

Vertiv
Your Vision, our Passion

With a unique combination of industry expertise, technology, and resources, our mission is to support and power mission-critical technologies that drive possibility.



Chloride®

Our global industrial power solutions meet the most demanding technical specifications and provide safe, reliable power- no matter the challenge

Liebert®

Our global power and thermal management solutions are some of the world's most efficient and reliable power and cooling technologies

NetSure™

Our global intelligently engineered DC power systems deliver high availability, energy efficiency and scalability for converged networks

Trellis™

Our industry-leading software gives customers an integrated view of operations across IT and facilities resources, enabling better decisions that save time and money

MODULARITY

Redundant intelligence and modular capacity ensure reliable operation.

Liebert® FlexPower™ core assemblies incorporate distributed intelligence and scalable power in a 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.

Using Flexpower core assemblies, the Liebert® APM™ can scale from 18 to 90kW in 18kW increments within a single cabinet.

EFFICIENCY

Liebert® APM™ offer the best efficiency in its class, with up to 98% in ECO mode operation

It is even more efficient when sizes in accordance with present system needs, instead of purchasing larger capacity systems to anticipate future requirements.

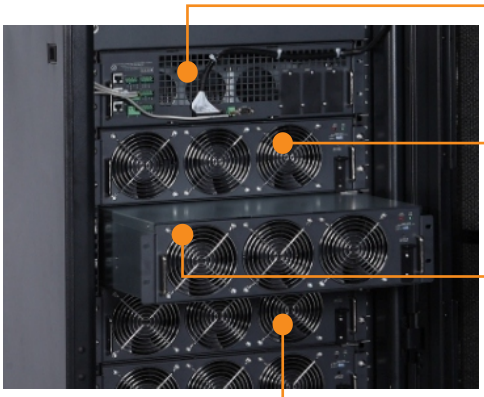
Lowest Total Cost of Ownership

- Buy only what you need for present usage, with the flexibility to add capacity as demand increases
- One-year warranty - provides full system coverage for one year
- Flexpower approach allows for sizing of the UPS, resulting in improved energy efficiency and reduced power expenditures

An Adaptable UPS that Meets increasing Power requirements

Prevent power interruptions and ensure the future flexibility and efficiency of your data center infrastructure, with the Liebert® APM™ UPS

- Modular Configuration
- Cost-efficient operation
- Flexibility to match increasing power demands
- Enterprise-level reliability



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

FlexPower core hardware assemblies enable quick and easy capacity increases without powering down the connected load

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

Expand for capacity or redundancy in 18kW increments within a single cabinet- 18kW to 90kW, no additional floor space is required

MODULARITY

With fewer basic building blocks you can build a power source tailored to your needs and ready to evolve with them.

HOT SWAP

Up and running in a few seconds thanks to the hot swappable modules.

ENERGY EFFICIENCY

Liebert® APM™ has been designed to deliver the best combination of energy efficiency and availability

FLEXPOWER TECHNOLOGY™

Liebert® APM™ features Flexpower Technology™ ,which incorporates distributed intelligence and scalable power in a common assembly.

LIEBERT® APM™ UPS

An Efficient Row-based UPS with the reliability features of an enterprise UPS System

Energy Efficient:

- Efficiency up to 98% in ECO mode; Input Power Factor ~1; Input Harmonic current <3%

Easy to Install:

- Top/Bottom cable inlet/outlet available. Integrates UPS and power distribution in a single cabinet

Easy to Maintain:

- Front access provides easy bypass maintenance and replacement of rectifiers, inverter and fans; Ultra quite operations with noise level below 63dB;

Easy to Configure

- Battery adopts 12V x 36/38/40 cell design and features flexible configuration. Original battery system can be modified and poor cells can be replaced without affecting UPS performance.

Flexibility

Liebert® APM™ supports dynamic environments and IT asset growth with options for communications and application

- Capacity can be expanded in 18kW increments using FlexPower™ assemblies
- Easy Installation - front service access, smaller footprint
- Top or bottom cable entry - enable installation on raised or non-raised floors

Reliability

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

Higher Availability

- Redundancy and distributed intelligent features minimize single points of failure
- 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

Scalable Power and Distribution*

- APM offers more than power scalability for availability as it also addresses power distribution among the equipment in the data center in a scalable manner
- As a Adaptive Power Manager, it provides long term solution for power distribution for vertical scalability. Expand your infrastructure whether by adding a UPS module or adding more servers and racks
- It allows the user to easily add modules using a plug and play structure while distributing work load through its intelligent control system.

“Integrated Power and Distribution Management in a Modular Rack”

Unique in its class, the Liebert® APM™ provides complete, high efficient power protection and distribution in a single cabinet, eliminating the complexity of two stage power distribution.

1. **Intelligent Server Power Manager**
   MCM/BCM control module able to detect status, voltage, current, power factor, harmonic level and energy consumption of each branch, and set 2-level current load pre warning.
2. **Modular Power Distribution Module**
   Swappable distribution module (Optional) with 18-way circuit breaker for expansion and output distribution circuit adjustment
3. **Hot Swappable circuit Breaker**
   Branch switch expansion or load adjustment can be done without turning off the main circuit UPS power supply. Load distribution uses dynamic configuration, with the UPS capacity and number of load distribution circuits changed with the increase in IT systems
4. **Built-in distribution switch and manual maintenance bypass**
   Enable the UPS to transfer the load to utility in event of fault or overload, without interruption
5. **Standalone static bypass module**
   Built-in swappable 90kW bypass module in separate assembly, UPS still support load upon failure of this module to ensure higher reliability
6. **Hot swappable module**
   Each Power core assembly consist of its own DSP controller, minimizes possibility of single point of failure
7. **Unity Power Factor*; 18 kW module**
   Offers more real power to support customer’s mission critical load satisfying the requirements of the latest servers

Simple and Comprehensive Monitoring

Liebert® APM™ feature a intuitive HMI that leads the user through logical menu sequences to view the required information. The microprocessor based display is autonomous of the system control logic. The simple menu-driven system virtually eliminates the possibility for diagram or mimic panel. It can also display advanced metering information, alarms, configuration or start-up/shutdown/transfer information.

- Quickly check operational status
- Monitor power for through UPS along with all meter readings
- Menu-driven operator procedures to ensure safe operation
- Check status reports and history files
- Adjustment of programmable parameters (access limited by security access function)

Centralized Monitoring And Control For the IT Environment

Intended for the IT Manager, Liebert® Nform™ is a network communications system that enable you to leverage the distributed monitoring capabilities of your network connected equipment. This software solution combines full-scale monitoring with cost-effective deployment through the use of the existing network infrastructure. It is both scalable and adaptable so it can grow as your systems expand and business needs change. Liebert® Nform™ can be configured to monitor your Liebert® APM™ for alarm notifications . These alarms can be processed to trigger event actions such as email alerts or local notifications

Liebert Nform

Centralized Monitoring And Control Through Your Existing Network

Liebert® Sitescan™ is centralized site monitoring system assuring maximum visibility and availability of your critical operations. Liebert® Sitescan™ Web allows you leverage Web technology to oversee and control critical support systems-anywhere, anytime. Liebert® Sitescan Web allows you to monitor and control virtually any piece of critical support equipment-whether is located in the next room or in a facility on the other side of the country. The web-based system provides centralized oversight of any Liebert® precision air, power and UPS units, as well as many other analog or digital devices. Features include real-time monitoring and control, data analysis and trend reporting, and event management.

Liebert SiteScan

Note: Please consult to your Vertiv sales representative for more details on software compatibility

Technical Specifications

Rated Power (In kVA/kW)*	18	36	54	72	90
Input					
Rated input voltage	380/400/415Vac, 3-phase and 4 -wire				
Input voltage range	305~477V ; 304-228 V for (o/p derated below 80%)				
Rated operating frequency	50/60Hz				
Input frequency range	40-70Hz				
Input power factor	=0.99 at full load, >0.98 at half load				
THDi*	Linear full load<3% (battery float charge); Non-liner full load <5% (battery float charge)				
Input power walk-in duration	20s				
Battery					
Float voltage	selectable from 2.2V/cell to 2.3V/cell				
Temperature compensation	-3.0mV/°C/cl				
Ripple voltage	<=1.141%				
Boost voltage	selectable from 2.3 to 2.35V/cells				
EOD voltage	selectable from 1.60 to 1.85/cells				
Output					
Inverter output voltage	380/400/415Vac, 3-phase and 4-wire				
Nominal output frequency	50/60 (settable)				
Inverter overload capacity	1 hour for 110%; 10 mins for 125%; 1 min for 150%; 200ms for >150%				
Voltage Stability	±1% (balanced)				
Total harmonic voltage distortion	2% (linear load); 4% (non-linear load)				
Slew rate	0.6Hz/sec				
Bypass					
Bypass input voltage	380/400/415Vac, 3-phase and 4-wire				
Bypass overload capacity	<110% for continues; <150% for 1 min; 1000% for 100ms				
Bypass voltage tolerance	Upper limit: +10%, +15% or +20%; Lower limit: -10%, -15%, -20%, -30% or -40%				
Bypass frequency tolerance	±10% or ±20%, default: ±20%				
Synchronisation window	Rated frequency ±0.5, ±1, ±2, ±3 (optional)				
Dimensions and weight					
Dimensions (W x D x H) (mm)	600 x 1100 x 2000				
Weight(kg)	228	256	284	321	340
General					
Online mode efficiency	Up to 94%				
ECO mode efficiency	Up to 98%				
Operating temperature*	0~40°C				
Storage temperature	-20~70°C (without battery)				
Max operation altitude	=1000, derate power by 1% per 100m between 1000m and 2000m				
Nosie (1m)	55	57	59	61	63
IP Class	IP20				
Color	Black ZP7021				
Standard	Safety: EN50091-1; IEC62040-1/AS62040-1, EMC: EN50091-2/IEC62040-2/AS 62040-2(C3) specifying the performance and test: EN50091-3/IEC62040-3/AS 62040-3(VFI SS 111)				

**Note: Condition apply*
**Liebert APM also available with 0.9PF model(20/40/60/80/100kVA) to meet higher kVA requirement*
**Specifications are subject to change without any prior notification*

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