Liebert® APS UPS

5kVA - 20kVA N+1

Flexible, redundant scalable UPS for room or row-based applications



A Scalable Power Solution for Dynamic Demands

Pay as you grow design of the Liebert® APS simplifies the capacity planning process and provides budget flexibility. FlexPower™ assemblies and battery modules allow for rapid deployment of capacity and runtime upgrades.

Built-in Redundancy and Modular Design provide Maximum Availability

Provide mission-critical availability and reduce costs while maintaining future flexibility with the Liebert APS uninterruptible power supply (UPS), a modular power solution for 5-20kVA N+1 applications.

- High overload capabilities up to 200% allow the unit to provide conditioned power during temporary overloads without transfers to/from bypass power
- Modular batteries, controls, and power components help reduce maintenance costs with user replacement
- Scalability allows for the cost-effectively addition of power capacity or battery modules as needed
- Module-level, built-in redundancy eliminates the expense of purchasing and planning for additional cabinets
- Integral battery monitoring with temperature-compensated charging prolongs battery life and helps reduce replacement costs
- Pre-installed IS-UNITY-DP card provides remote management and environmental monitoring support

Ultimate Flexibility and Serviceability

Your business depends on digital continuity, and along with the following benefits, the Liebert APS UPS ensures your critical IT applications are protected from power disruptions, fluctuations, and outages:

- Hot-swappable FlexPower assemblies and battery modules allow for quick and easy capacity and runtime changes without powering down the UPS or connected equipment
- Ensured system integrity due to fault-tolerant design that enable the power, battery, and control modules to take themselves offline in the event of a problem
- Improved availability and reliability with internal wrap-around maintenance bypass
- Two-year hassle-free factory warranty program eliminates unexpected repair or replacement costs for added peace of mind



FlexPower™ core hardware assemblies

Delivers quick and easy capacity changes in 5kVA/4.5kW increments, without powering down.

Hot-swappable FlexPower™ assemblies and battery modules

May be added without powering down connected equipment.

Reliability and Serviceability

Your business depends on the data center and the IT network to run. With the Liebert® APS UPS solution, you get peace of mind that your critical IT functions – and your business – will be available and running as expected through power disruptions, fluctuations and outages.

- **Internal redundancy capability** enhances reliability and provides multiple layers of protection.
- **No single point of failure** - Full redundant design allows the critical load to run on conditioned power if there is a failure of any component.
- **Configurable** design provides your desired level of capacity and redundancy.
- **Fault-tolerant design**, enables the power, battery and control modules to take themselves offline if there is a problem, without sacrificing overall system integrity.
- **Superior overload capabilities**, able to provide conditioned power to temporary overloads without transfers to/from bypass power.
- **Optional External Maintenance Bypass** in separate assembly provide higher reliability and availability.



Flexibility

The Liebert APS UPS helps you enhance flexibility to stay ready for what's next:

- **Capacity on demand** with FlexPower™ core modules delivers capacity changes in 5 kVA/4.5 kW increments - without powering down.
- **More real kW** - 0.9 power factor provides more real power to support the I.T. load than many other solutions in this size range.
- **Isolated and non-isolated models** to provide the protection and efficiency you need.
- **Installation Flexibility** – use on raised floors, non-raised or in rack.
- **Large input voltage window**, which minimizes transfer to battery and increases battery life; low line transfer can range down to 110V.
- **Power output distribution PODs** create the right distribution options to meet application requirements.

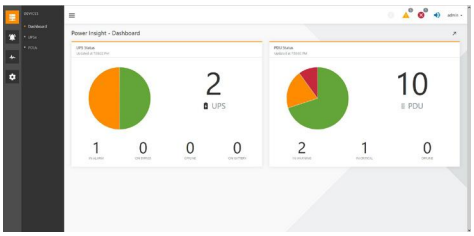
Manageability

- **IS-UNITY-DP** factory-installed in each Liebert APS to provide LIFE™ Services, Web Interface, SNMP, Modbus IP / RTU, BACNet IP / MSTP, & Envrionmental Sensor support. (temperature, humidity, contact closure, leak detection and more).



Software

Vertiv connects and protects your network with core-to-edge solutions and unmatched expertise. For maximum visibility and effective monitoring in one view, pair your Vertiv™ UPS with a software solution.



Vertiv™ Power Insight

- **Vertiv™ Environet™ Alert** provides industry companies with critical facility monitoring software that is affordable and easy to use. This solution delivers superior monitoring, alerting, trending and data organization. Get monitoring, alerting and trending at a price that's right for your business.
- **Vertiv™ Power Insight** is a complimentary web-based software designed for users with a distributed infrastructure that need a way to manage multiple devices. It is a simple to install, easy to use solution that provides a single interface for up to 100 UPSs or rPDUs. Power Management Software, free downloads are available for Vertiv™ Power Insight.

Standard Configurations

The Liebert® APS is a modular UPS System. Standard configurations shown here include the all the power and battery modules required, but the modules ship separately on most models. The Liebert APS is also a build-to-order product that can be fully-configured at the factory. For configure-to-order solutions, please contact your local Vertiv office and a product expert will guide you through this process.

APS Series	Input	Output	Max Capacity
AS3	208V, 3-Wire (L-L-G)	208/120V	15kVA N+1
AS4	208V, 3-Wire (L-L-G)	208/120V	20kVA N+1
AS5	208/120V 4-Wire (L-L-N-G)	208/120V	15kVA N+1
AS6	208/120V 4-Wire (L-L-N-G)	208/120V	20kVA N+1

AS3 & AS4 Series



15 kVA, 12 Bay, Xfmr-based
17.3 W x 31.5 D x 41.7 H inches
(440 W x 800 D x 1060 H mm)

20 kVA, 16 Bay, Xfmr-based
17.3 W x 33.5 D x 48.8 H inches
(440 W x 850 D x 1240 H mm)

20 kVA, 16 Bay, Xfmr-free
17.3 W x 33.5 D x 38.2 H inches
(440 W x 850 D x 970 H mm)

15 kVA, 10 Bay, Xfmr-free
17.3 W x 31.5 D x 27.4 H inches
(440 W x 800 D x 695 H mm)



AS5 & AS6 Series

FlexPower™ Module Options

FlexPower™ Modules allow for quick and easy power capacity upgrades to Liebert APS systems, in 5kVA / 4.5kW increments. The modules are hot-swappable, and can be installed without taking the Liebert APS unit offline.

Model Number	Description
APS5KPWRMOD1	5kVA/4.5kW Power Module for AS5 & AS6 series Liebert APS systems
APS5KPWRMOD2	5kVA/4.5kW Power Module for AS1, AS2, AS3, and AS4 series Liebert APS systems



What's Included

- UPS
- Power and Battery Modules
- Quick Start Guide
- UPS with quick start guide
- IS-UNITY-DP Networking Card
- Pre-installed casters and leveling feet
- Removable LCD Display

Battery and Battery Charger Modules



Liebert® APS Battery Module
APSBATMODCU includes 2 battery modules, or 1 complete battery string. each complete string uses 2 bays in the Liebert APS.



Liebert® APS Charger Module
10A battery charger that operates in parallel with the chargers integrated in each Power module. To increase runtime in the Liebert APS, this 10A charger should be used when battery string to power module ratio is greater than 3:1.

Standard Configuration Selection Guide

Model Number	Power Capacity	Scalable to (kVA/kW)	Input Connection	Output Connection	Full-Load Runtime (min)	Half-Load Runtime (min)
AS3A0NCUGNNXLKB*	5kVA / 4.5kW	15 / 13.5 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	5.0	14
AS3A0NCVGNNXLKB	5kVA / 4.5kW	15 / 13.5 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	15	38
AS3B0NCVGNNXLKB	10kVA / 9.0kW	15 / 13.5 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	5.0	15
AS3B0NCYGNNXLKB	10kVA / 9.0kW	15 / 13.5 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	21	51
AS3C0NCWGNNXLKB	15kVA / 13.5kW	15 / 13.5 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	5.0	15
AS3C0NCXGNNXLKB	15kVA / 13.5kW	15 / 13.5 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	8.0	22
AS4A0NCUGNNXLKB*	5kVA / 4.5kW	20 / 18.0 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	5.0	14
AS4A0NCVGNNXLKB	5kVA / 4.5kW	20 / 18.0 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	15	37
AS4B0NCVGNNXLKB	10kVA / 9.0kW	20 / 18.0 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	5.0	15
AS4B0NCYGNNXLKB	10kVA / 9.0kW	20 / 18.0 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	21	51
AS4C0NCWGNNXLKB	15kVA / 13.5kW	20 / 18.0 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	5.0	15
AS4C0NCJGNNXLKB	15kVA / 13.5kW	20 / 18.0 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	15	39
AS4D0NCXGNNXLKB	20kVA / 18.0kW	20 / 18.0 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	5.0	15
AS4D0NCJGNNXLKB	20kVA / 18.0kW	20 / 18.0 N+1	Hardwire (L-L-G)	Hardwire Optional PODs	10	26
AS5A0NCUGNNXLKB*	5kVA / 4.5kW	15 / 13.5 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	5.0	15
AS5A0NCVGNNXLKB	5kVA / 4.5kW	15 / 13.5 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	15	40
AS5B0NCVGNNXLKB	10kVA / 9.0kW	15 / 13.5 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	5.0	15
AS5B0NCXGNNXLKB	10kVA / 9.0kW	15 / 13.5 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	16	41
AS5C0NCWGNNXLKB	15kVA / 13.5kW	15 / 13.5 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	5.0	16
AS6A0NCUGNNXLKB*	5kVA / 4.5kW	20 / 18.0 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	5.0	15
AS6A0NCVGNNXLKB	5kVA / 4.5kW	20 / 18.0 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	15	40
AS6B0NCVGNNXLKB	10kVA / 9.0kW	20 / 18.0 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	5.0	16
AS6B0NCWGNNXLKB	10kVA / 9.0kW	20 / 18.0 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	10	27
AS6B0NCYGNNXLKB	10kVA / 9.0kW	20 / 18.0 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	21	53
AS6C0NCWGNNXLKB	15kVA / 13.5kW	20 / 18.0 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	5.0	16
AS6C0NCJGNNXLKB	15kVA / 13.5kW	20 / 18.0 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	16	41
AS6D0NCXGNNXLKB	20kVA / 18.0kW	20 / 18.0 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	5.0	16
AS6D0NCJGNNXLKB	20kVA / 18.0kW	20 / 18.0 N+1	Hardwire (L-L-N-G)	Hardwire Optional PODs	10	27

Notes

1. Models denoted with * will ship with power and battery modules pre-installed. All other models will include one power and battery module pre-installed, with additional modules shipped separately.
2. Models 10kVA and up can be configured to N+1 redundancy with a 5kVA/4.5kW De-rate to unit capacity.
3. For applications requiring runtime exceeding the values within this table, please contact your local Vertiv office for a configure-to-order solution.

Power Output Distribution (POD) Options

Liebert® APS AS3 and Liebert® APS AS5 Series can support 1 POD, Liebert® APS AS4 and Liebert® APS AS6 Series can support up to 2 PODs. Each POD provides multiple output receptacles and is designed for easy installation.

POD Model Number	Output Connections
PD2-101	(8) 5-15/20R T-slot, (2) L6-30R
PD2-102	(4) 5-15/20R T-slot, (4) L6-20R
PD2-103	(4) 5-15/20R T-slot, (4) L6-30R
PD2-104	(4) 5-15/20R T-slot, (2) L6-30R, (2) L6-20R
PD2-105	(4) 5-15/20R T-slot, (2) L5-30R, (2) L5-20R
PD2-106	(4) L5-20R, (4) L6-20R
PD2-107	(4) L5-20R, (4) 5-15/20R T-slot
PD2-108	(2) L6-30R, (2) L6-20R
PD2-109	(2) L14-30R
PD2-200	(4) IEC320-C19, (4) IEC320-C13
PD2-201	(2) IEC320-C19, (8) IEC320-C13
PD2-202	(12) IEC320-C13
PD2-204	(4) IEC320-C13, (2) IEC309-32A







Vertiv™ Maintenance Bypass Cabinet Option

Suitable for use with all Vertiv™ 5-20kVA single phase UPS.
Integrated lock out/tag out arm for maximum site and personnel safety.

MBC Model Number	Dimensions	Input	Output
VMBC-20KMVRT4U	16.9W x 21.6D x 6.8H (in) 430W x 549D x 173H (mm)	Hardwired (L-L-N-G)	3x L14-30R, Hardwired, Optional PD2 POD

Intellislot Card Options

Each Liebert® APS UPS comes with the IS-UNITY-DP card pre-installed, with 2 additional empty Intellislot ports, accepting any of the below networking cards.

Model Number	Description
IS-UNITY-SNMP	SNMP Network communications for interfacing to Network and Building Management Systems
IS-UNITY-DP	Network communications and Environmental Sensor Support
IS-RELAY	Provides relay signals for connection to customer's hardwire terminal block

Mounting Kit Options

Each Liebert APS UPS include factory-installed casters and levelling feet. They can also be rack mounted with the optional rack mounting kit. The rack mount kit comes with ramps to allow the Liebert APS to roll into the bottom of the rack.



Model Number	Application	Model(s) Supported	Style	Description
APSRACKKIT	4-Post Rack	AS3, AS5, and, AS6 Series APS	Shelf & Bracket	Includes all necessary hardware to mount the Liebert® APS UPS in a 600mm wide 4-Post rack. Included with the kit is a shelf, two sets of ramps, rackmount brackets, and a bezel.

Power Startup Service - Power and Battery modules installation and Start-up Only

- Expands the Liebert APS warranty to include on-site parts and labor for the full two-year warranty period
- Startup of new UPS performed by Vertiv factory trained technician
- Services performed Monday thru Friday 8-5 pm or 7 X 24, excluding national holidays within the 48 contiguous states and Hawaii
- The site trip includes the following services for each UPS system:
  - UPS integration (frame + power module(s) + battery module(s))
  - Non powered inspection
  - UPS electrical and operational checkout
  - Full parts and labor for any work required on the UPS
  - Customer operation training at time of start-up
    NOTE: UPS frame must be installed and hardwired by customer with a certified electrician.
- **Start-up Plus:** Adds 1 full Preventive Maintenance (PM) visit during the standard warranty period

Installation and Startup Only	Standard		Plus	
Equipment Model / Type	**M-F, 8-5**	**7x24**	**M-F, 8-5**	**7x24**
All Liebert® APS UPS Models	SUAPSXXMF	SUAPSXX24	SUPAPSXXMF	SUPAPSXX24

Power Assurance Package Summary — 5-year On-site Emergency Response

- Full-service five (5) year contract term commencing upon the start-up date
- On Site Service Support
- Includes all above "Power Startup Services" and 5-year On-site services
- Services performed 7 X 24, excluding national holidays within the 48 contiguous states
- One Preventive Maintenance visit after 3rd year scheduled by the customer (excluding national holidays)
- 100% parts coverage, including internal batteries, POD and web card
- 100% labor and travel coverage 7 days/week, 24 hours/day
- 24-Hour Customer Resolution Center via 1-800-LIEBERT
- Access to Customer Services Network portal

LIFE™ Services includes above plus:

- Continuous Monitoring, Expert Analysis, and Proactive Response

Power Assurance Package Options

Bundled Start-up Service AND 5-Year On-site Emergency Response	Standard	With LIFE Services
Equipment Model / Type	**Part Number**	**Part Number**
Liebert® APS AS3 & AS5 Series	PAPAPS-15K	PAPAPS-15KLF
Liebert® APS AS4 & AS6 Series	PAPAPS-20K	PAPAPS-20KLF

Liebert® APS UPS Technical Specifications

	AS3 Series	AS4 Series	AS5 Series	AS6 Series
Description	12-Bay, w/ Xfmr	16-Bay, w/ Xfmr	10-Bay, Transformer-free	16-Bay, Transformer-free
Frame Rating	15 kVA / 13.5 kW	20 kVA / 18 kW	15 kVA / 13.5 kW	20 kVA / 18kW
Mechanical W x D X H				
Dimension mm (in)	440 x 800 x 1060 (17 x 32 x 42)	440 x 850 x 1240 (17 x 34 x 49)	440 x 800x 695 (17 x 32 x 27)	440 x 850 x 970 (17 x 34 x 38)
Max Weight (frame fully populated)				
Unit weight kg (lbs)	360.6 (795)	417.3 (920)	256.3 (565)	317.5 (700)
Shipping weight kg (lbs)	378.7 (835)	435.4 (960)	274.4 (605)	335.7 (740)
Environmental				
Operating temperature	0°C - 40°C (32°F - 104°F)			
Relative humidity	0 - 95%, non-condensing			
Altitude	3,000m (10,000ft) @ 25°C (77°F)			
Efficiency	88.5 AC - 89.9 AC	88.6 AC - 89.7 AC	90.4 AC - 91.0 AC	90.0 AC - 91.0 AC
Nominal heat dissipation	5528 BTU/Hr (max)	7965 BTU/Hr (max)	4904 BTU/Hr (max)	6768 BTU/Hr (max)
Input Data				
Default Input Voltage	208 VAC	208 VAC	208/120 VAC	208/120 VAC
Configurable Input Voltage	200/208/220/230/240 VAC	200/208/220/230/240 VAC	200/100, 208/120, 220/110, 230/115, 240/120 VAC	200/100, 208/120, 220/110, 230/115, 240/120 VAC
Input Power Factor	> 0.99	> 0.99	> 0.99	> 0.99
Input frequency range	40 Hz to 70 Hz auto-sensing			
Output Data				
Default Output Voltage	120/208VAC	120/208VAC	120/208VAC	120/208VAC
Configurable Output Voltage	100/100/173/200, 110/110/190/220, 115/115/199/230, 120/120/208/240 VAC	100/100/173/200, 110/110/190/220, 115/115/199/230, 120/120/208/240 VAC	200/100, 208/120, 220/110, 230/115, 240/120 VAC	200/100, 208/120, 220/110, 230/115, 240/120 VAC
Voltage regulation	±3%	±3%	±3%	±3%
Voltage stability (100% step load)	±7%	±7%	±7%	±7%
Voltage Recovery time	≤ 3%, linear load ≤ 7%, non-linear load	≤ 3%, linear load ≤ 7%, non-linear load	≤ 3%, linear load ≤ 5%, non-linear load	≤ 3%, linear load ≤ 5%, non-linear load
Output frequency	60Hz default; 50/60Hz user-configurable			
Output overload capability	< 104% continuous; 105% - 130% for 1 min; 131% - 150% for 10 sec; 151% - 200% for 1 sec; > 201% for 250 msec			
Compliance				
Conducted and radiated EMC levels	IEC/EN/AS 62040-2 Cat 2, CISPR22 Class A, FCC Part 15 Class A			
Compliant safety standards	IEC/EN/AS 62040-1:2008, UL 1778 4th Ed and CSA 22.2 No. 107.1		UL 1778 4th Ed and CSA 22.2 No. 107.1	
Compliant immunity standards	IEC/EN/AS 61000-4-2, 3, 4, 5, 6			
Environmental	WEEE and ROHS2 (6 by 6), REACH Compliant			
Battery Module				
Battery capacity	36W @ 15min-rate to 1.67V per cell @ 25°C (77°F)			
Backup time (full load)	5hrs (for non-redundant system which has equal number of battery strings and power modules)			
Maximum charge current (full load)	Power module internal charger: 1.8A / Charger module: 10A			
Nominal voltage	144 VDC	144 VDC	144 VDC	144 VDC
Recharge time	< 5 to 90% capacity (PM internal charger with 1:1 ratio of PM to Battery Strings)			

Build-to-order systems are available, please contact your local Vertiv office for details.



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