

# Liebert® APS™

5-20 kVA UPS

Flexible, efficient modular UPS for row-based applications



*AVAILABILITY. FLEXIBILITY. EFFICIENCY.*

# A Modular Power Protection Solution for Today and the Future

Provide mission-critical availability while reducing costs and maintaining flexibility for the future with the Liebert® APS™ UPS, a modular power protection solution for 5 – 20kVA applications.

- Reliability
- Flexibility
- Economy
- Efficiency

## Low TCO

With the Liebert APS, you can maintain flexibility for the future and ensure the availability of your critical systems– all without sacrificing cost or energy efficiency.

Additional features to help lower costs include:

- **Industry-leading efficiency:**
  - **91.5-92%** efficiency: 200-240V in/out transformer-free systems.
  - **90-91%** efficiency: 200/100-240/120V in/out transformer-free systems.
  - **88.5-89.9%** efficiency: transformer-based systems.
- **Scalability** that allows you to cost-effectively add power capacity or battery modules as needed.
- **Modular batteries, controls and power components** to help reduce maintenance costs with user replacement.
- **Two year hassle-free factory warranty program** for repair or replacement of your Liebert APS UPS.
- **Module-level redundancy** eliminates the expense of purchasing and planning for any additional cabinets.
- **Reduced installation time and cost** because units are shipped in modules and on site assembly is easy and simple
- **Everything you need for efficiency and availability in one box:** power modules, batteries, maintenance bypass, and distribution in a single, small-footprint cabinet.
- **Integral battery monitoring** with temperature compensated charging to prolong battery life and help reduce replacement costs.



## Reliability and Serviceability

At the core of your business sits your data center and the services running in it. 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** (N+2/20kVA) enhances reliability and provides multiple layers of power 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 in the system.
- **Configurable** design allows you to customize the Liebert APS UPS for 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.
- **Internal wrap-around maintenance bypass and Frame-level bypass with independent controls in separate assembly** provide higher reliability and availability.



The Liebert APS UPS can be installed on raised floors, traditional flooring, or in rack enclosures.

## Low TCO for Today, Flexibility for the Future

FlexPower core hardware assemblies enable quick and easy capacity increases

Hot-swappable FlexPower assemblies and battery modules may be added without powering down connected equipment.



### Flexibility

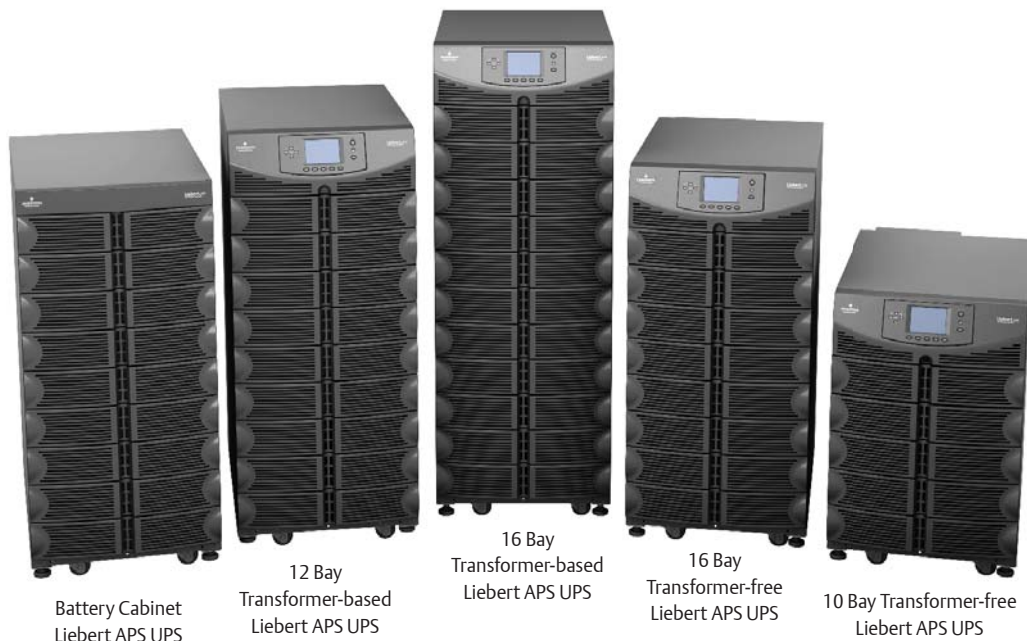
What is the key to your business' success in the future? Being able to adapt efficiently and effectively as the needs of your users and core business power requirements change. It's about managing uncertainty, equipment density and capacity. The Liebert® APS™ UPS helps you stay ready for what's next:

- **Capacity on demand** with FlexPower™ core modules that allow you to change capacity as needed 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 other solutions in this size range.
- **Isolated and non-isolated models** to provide the right solution for your power protection needs.
- **Integrated distribution PODs** allow selection of a variety of distribution options to meet application requirements.
- **Trellis™ platform connectivity**, so the Liebert APS can easily be integrated with this robust, real-time data center optimization solution.
- **Three Liebert Intellislot® ports** allow integration and communication with a variety of infrastructure management solutions, leading to better power optimization and visibility.
- **Optional matching external battery cabinets** provide longer battery run times to protect against sustained power issues.
- **Installation Flexibility** – use on raised floors, traditional flooring, or in rack enclosures.
- **Large input voltage window**, which minimizes transfer to battery and increases battery life; low line transfer can range down to 110v.

### Service Solutions to Keep You Up and Running

To enhance the availability and trouble-free operation of your Liebert APS UPS, Emerson Network Power offers a range of optional service programs, including:

- **Included two year warranty** includes onsite repair.
- **Start-up** by factory-trained engineers to ensure proper installation and operation.
- **Customer resolution center** provides direct access to our engineers, whenever you need them.



## Liebert® APS™ UPS

Parameters	Units	10 Bay	16 Bay	12 Bay	16 Bay	10 Bay	16 Bay	
		Xfmr-free		Xfmr-based		Xfmr-free dual inverter		
Frame Rating	kVA	15	20	15	20	15	20	
	kW	13.5	18	13.5	18	13.5	18	
<b>General &amp; Environmental</b>								
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						
<b>Mechanical</b>								
	Units	10 Bay	16 Bay	12 Bay	16 Bay	10 Bay	16 Bay	
Width	mm (in)	440 (17)	440 (17)	440 (17)	440 (17)	440 (17)	440 (17)	
Depth	mm (in)	800 (32)	850 (34)	800 (32)	850 (34)	800 (32)	850 (34)	
Height	mm (in)	695 (27)	970 (38)	1060 (42)	1240 (49)	695 (27)	970 (38)	
Weight (frame rating populated)	Unit weight	kg (lbs)	256.3 (565)	317.5 (700)	360.6 (795)	417.3 (920)	256.3 (565)	317.5 (700)
	Shipping weight	kg (lbs)	274.4 (605)	335.7 (740)	378.7 (835)	435.4 (960)	274.4 (605)	335.7 (740)
<b>Environmental</b>								
	Units							
Operating temperature	°C (°F)	0 - 40 (32 - 104)						
Relative humidity	%	0 - 95%, non-condensing						
Altitude	m (ft)	3000 (10000) @ 25°C (77°F)						
Efficiency (AC-AC)	%	91.8-92.0	91.6-92.0	88.5-89.9	88.6-89.7	90.4-91.0	90.0-91.0	
Nominal heat dissipation	BTU/Hr (max)	4208	5747	5528	7965	4904	6768	
<b>Input Data</b>								
	Units							
Nominal input voltage	VAC	200/208/220/230/240; Single Phase				200/100, 208/120, 220/110, 230/115, 240/120; Single Phase		
		380/400/415; 3 Phase						
Input voltage range	VAC	The input voltage range based on the output loading, refer to User Manual						
Power factor	Cos	Single-phase input, > 0.99; three-phase input, > 0.95		Single-phase input, > 0.99				
Input frequency range	Hz	40 to 70 auto-sensing						
<b>Battery Module</b>								
	Units							
Battery capacity	W	36W @ 15min-rate to 1.67V per cell @ 25°C (77°F)						
Backup time (full load)	minutes	5 (for non-redundant system which has equal number of battery strings and power modules)						
Maximum charge current (full load)	Amps	Power module internal charger: 1.8A / Charger module: 10A						
Nominal voltage	VDC	144						
Recharge time	Hrs	< 5 to 90% capacity (PM internal charger with 1:1 ratio of PM to Battery Strings)						
<b>Output Data</b>								
	Units							
Output voltage	VAC	200/208/220/230/240; Single Phase		100/100/173/200,110/110/190/220, 115/115/199/230, 120/120/208/240; Single Phase		200/100, 208/120, 220/110, 230/115, 240/120; Single Phase		
Voltage regulation	%	±3						
Voltage stability (100% step load)	%	±7						
Voltage Recovery time	ms	≤ 60						
Voltage distortion	%	≤ 3, linear load						
		≤ 5, non-linear load		≤ 7, non-linear load		≤ 5, non-linear load		
Output frequency	Hz	50/60						
Output overload capability	%	< 104% continuous						
		105% - 130% for 1 min						
		131% - 150% for 10 sec						
		151% - 200% for 1 sec						
						> 201% for 250 msec		

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