



Our Power, Your Confidence

# POWER+

**Modular UPS System**  
**3 x 208V**  
**10kVA to 100kVA**  
**Hot Swap Plug-In Module**

- ▶ True On-line
- ▶ Parallel
- ▶ Redundant
- ▶ Double-conversion
- ▶ Modular
- ▶ Green and clean power
- ▶ High efficiency



## The Next Generation UPS System



Power+ is a state-of-the-art modular UPS system based on the *true on-line battery* topology. The Power+'s modular design makes scalability simple; its high power density provides the benefits of a small footprint and low heat dissipation. The Power+'s rich management and communication capabilities include remote monitoring and control over the Internet or via cellphone. Its hybrid static switch ensures high reliability and compliance with IEC standards.

**RoHS**  
Compliant





## The UPS That Grows With Your Business

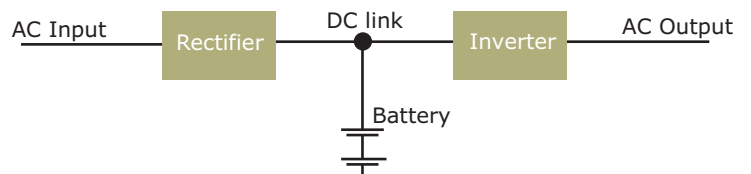
Power+ is a true modular, user-upgradeable system. As load increases you can insert up to a total of ten 10 kVA hot-swap plug-in modules, each weighing only 9 kg. The Power+ can be configured in parallel for N+1 or N+2 redundancy.

## True On-Line Battery

The Power+ inverter complies with the IEC-62040-3 standard by its ability to take its input power from either the ac input (via the rectifier) or the battery, and supply power to the load. The rectifier is software-controlled to recharge the battery and maintain it in a charged condition. The battery is galvanically connected between the rectifier output link and the inverter input on a common DC link (see diagram on the right).

### Double Conversion True On-Line Battery (VFI)

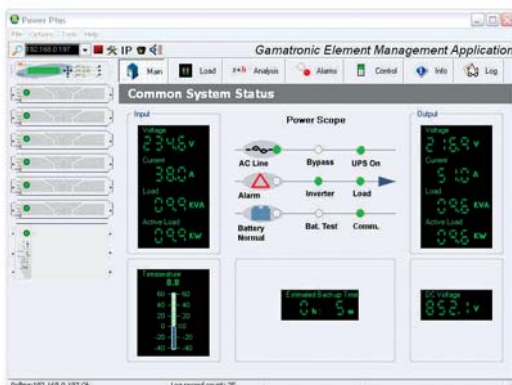
According to IEC 62040-3



## Parallel POWER+ Systems

Connecting two or more POWER+ units in a parallel configuration provides increased reliability and greater output power capacity. POWER+ units equipped with the optional parallel kit share the load evenly and make the POWER+ parallel modular architecture even more dependable. Parallel POWER+ units can be configured with decentralized static switches or a centralized static switch. Either arrangement ensures zero downtime even during maintenance procedures.

PSM-POWER+ main screen



## Applications

- ▶ Local Area Networks
- ▶ Servers
- ▶ Data centers
- ▶ Industrial PLCs
- ▶ Industrial Processes
- ▶ Cach registers
- ▶ Emergency Devices (lights/alarms)
- ▶ Telecom facilities
- ▶ E-business

# Specifications

Topology	True Online Battery, Double Conversion VFI										
Construction	Modular parallel hot-plugged modules, continuous operation										
<b>INPUT</b>											
Voltage	3 X 208V+N+G										
Voltage Range	-25%÷ +15%										
Current	Max. 28A per phase for a single module, no inrush current at startup										
Frequency	47-63Hz										
Power Factor	0.99										
THDI	5% at full load										
<b>OUTPUT</b>											
Rated Power	10kVA/8kW to 100kVA/80kW										
Frequency Tracking Range	± 0.5,±1,±2,±3,±4Hz (selectable)										
Frequency (in free-running mode)	50/60Hz ±0.1%										
Slew Rate	1Hz/sec										
Voltage	3 X 208V+N (adjustable)										
Static Regulation	± 1%										
Regulation for Unbalanced Load	±1% for 100% unbalanced load										
Dynamic Response to 100% Load Step	± 2%										
Overload	110% for 10 min.;125% for 60 sec.;1000% for 1 cycle										
Waveform	Sinusoidal										
THD	Less than 2% for linear load										
Load CF (max)	4:1										
AC-AC Efficiency (nominal)	Up to 94%										
DC-AC Efficiency (nominal)	Up to 97%										
<b>BATTERIES</b>											
DC-Link Voltage	±160V to ±216V										
Number of Batteries	32 x 12V										
<b>GENERAL</b>											
Maximum Power Dissipation (Po=8KW)	510W (988 BTU) for a single module										
Ambient Temperature	-10 <sup>o</sup> to +40 <sup>o</sup> (operating); -20 <sup>o</sup> to +60 <sup>o</sup> (storage)										
Relative Humidity	95% max non-condensing										
Altitude	1500m w/o derating										
Enclosure	IP20										
Cooling	Forced - multi-fan with speed control										
<b>STANDARDS</b>											
EMC	IEC 62040-2, FCC part 15/B										
Safety	UL 1778; IEC 62040-1-1										
Design	IEC 62040-3										
Low Magnetic Field Radiation	EMF as per ICNIRP										
<b>DIMENSIONS</b>											
<b>10kVA Module</b> (H x W x D)	88mm (2U) x 483mm (19") x 470mm										
Weight	9.8kg										
<b>POWER<sup>+</sup> System</b> (incl. STSW and base modules)											
Model	10kVA	20kVA	30kVA	40kVA	50kVA	60kVA	70kVA	80kVA	90kVA	100kVA	
Dimensions (cm)	H	69	78	88	97	106	125	135	144	153	163
	W	60									
D	71					109					
	Weight (kg)	84	99	114	129	144	164	179	194	209	224
<b>ACOUSTIC NOISE</b> (@1.5m from front of unit)											
Noise (dBA) half load	48	52	53	54	55	55.8	56.4	57	57.5	58	
Noise (dBA) full load	51	54	55	57	58	58.8	59.4	60	60.5	61	

\*All specifications are subject to change without prior notice

## POWER+ UL 208V Operation Modes

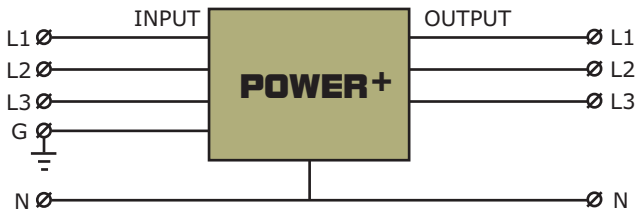
Every **POWER+** UPS module can operate in the following modes.  
Switching from mode to mode is made through the controller menus and wiring.

	Phases (in/out)	Input/Output voltage	Input current	Output power	Input wiring	Output Current @PF=0.8
Option 1	3/3	3x120V+N (3x 208V)	3x23.6A	10kVA/8kW	L1, L2, L3, N + G	3x28A
Option 2	2/2	2x120V+N (1x208V)	2x26.5A	7.5kVA/6kW	L1, L2, N + G	2x31A
Option 3	2/2	2x120V+N (1x240V)	2x26.5A	7.5kVA/6kW	L1, L2, N + G	2x31A

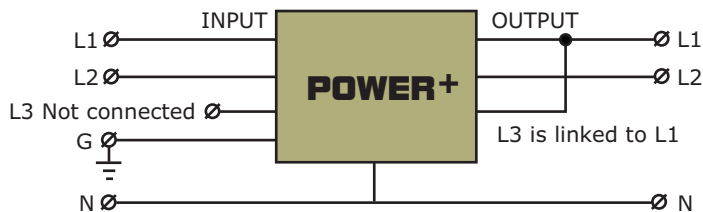
\* Ph to Ph voltage (Ph to N is 120v)

\*\* In two phase configurations L1 is linked with L3 for phase one on input, while L2 is the second input phase. For output it's L1 linked with L3, and L2 is the second phase. Both output phases [L1+L3]out and [L2]out provide same current, while two input phases [L1+L3]in and [L2]in will have different currents.

Option 1



Options 2,3



### Remarks

- ▶ Several 120 and 180 degrees in/out phase angle configurations available
- ▶ Two or three phase in/out operation modes
- ▶ Symmetrical or non-symmetrical input phase currents configurations
- ▶ Output currents are symmetrical in all modes
- ▶ In some configurations the total UPS module power is de-rated
- ▶ Options 4 and 5 have the same output current, but different power, because of different phase to phase voltage at 120 and 180 degrees phase angles
- ▶ Provided power and current values should be multiplied by the number of UPS modules in P+ unit, i.e. 30kVA P+ 3/3 will provide 28A\*3=84A per phase

# POWER+ VERSIONS

## POWER+ Free Style

**True On-line double-conversion modular UPS for a 19" rack, 50kVA-100kVA**

This is a 19" variant of the Power+ UPS, which can be inserted in any standard 19" rack, available in two configurations: 50kVA (5 Power+ modules), with a height of 20U and 100kVA (10 Power+ modules), with a height of 30U.



## POWER+ SA

**Stand-alone True On-Line double-conversion UPS**

A stand-alone 10kVA version of the Power+ UPS, in a unique light and compact design, weighing only 21 kg.



## POWER+ Battery Cabinets



Our new standard battery cabinet combines safety and flexibility with easy battery access. The cabinet can be ordered assembled, or in kit format to reduce shipping costs.

Battery Capacity	No. of Cabinets for POWER+*	Dimensions (DxWxH) mm of each cabinet
32x17/20Ah	1 Pcs	243x740x1300
32x24/26/38/40Ah	1 Pcs	300x970x1700
32x65/90Ah	2 Pcs (each cabinet includes 16 batteries)	420x800x1100

\*Cabinets can be installed side by side or back to back

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