

- ✓ True Modularity
- ✓ True Rightsizing
- ✓ True Green Power
- ✓ True On Line

# POWER+



Modular UPS System 10-100KVA



**GAMATRONIC™**

*Our Power Your Confidence*



## True Modularity

### Maximum Power Availability

Owing to its modular N+1 structure, Power+ guarantees load integrity and minimizes the possibility of load failure.

**MTBCF: 707,882Hrs**

### Minimum MTTR

Designed from the ground up for cost savings, Power+ is a completely modular solution. Each 10 KVA module is entirely self-contained and ready for hot-swapping – without complex and expensive stocks of components, subsystems, and spare parts.

## Ultrahigh Power Density

Weighing only 9kg and measuring vertically 2U, lightweight 10KVA Power+ modules are easily handled by the individual technician. Offering complete power system density of 2W/inch<sup>3</sup>, Power+ provides high power density with a space-saving footprint.

## Universal UPS

Power+ offers all the benefits and power of a universal UPS, including:

- Frequency: 50/60Hz
- Voltage: 380V;400V;415V
- Site configurable phases: 1/1; 3/1;3/3\*

\*1/1 & 3/1 phases are limited in capacity

## User Friendly

Designed for usability, modular Power+ offers:

- A user-friendly controller with all communication and control options easily accessible
- Intelligent battery handling that helps prolong battery life
- Simple maintenance procedures
- Notably quiet operation

### True Rightsizing

As opposed to costly and complex N+n solutions, Power+ is comprised of 10KVA building modules. Built to grow as business grows, modular Power+ enables purchase of the capacity required today, while expanding tomorrow by simple module addition.



## Integral Multi-System Parallel Connectivity

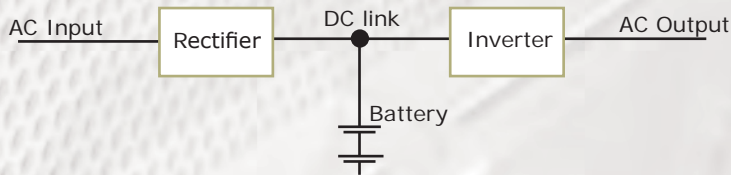
Power+ features optional built-in system parallel connectivity, enabling parallel-redundant connection of multiple systems up to 400KVA for data centers, industrial sites and large service operators that require the highest levels of resilience and availability.

### Decentralized Static Switch for Parallel Operation

In a parallel system configuration, Power+ systems operate in a decentralized mode, wherein all system internal static switches are synchronized. This ensures that all units can transfer to static switch bypass simultaneously, without the addition of external static switches – lowering expenses, and eliminating a significant potential point of failure.

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

According to IEC 62040-3



## True Online Batteries Double Conversion VFI Topology

Complying with IEC-62040-3 standards, highest classification VFI-SS-111, the Power+ features a galvanic battery connected between the rectifier output and the inverter input on a common DC link, resulting in:

- Maximum reliability
- No transfer time to battery mode
- No need for separate battery charger

## Lower TCO & High ROI

- SAVE ON purchasing & installation costs
- SAVE ON electricity costs
- SAVE ON maintenance costs
- SAVE ON cooling costs
- SAVE ON space costs
- SAVE ON upscaling costs
- SAVE ON generator costs

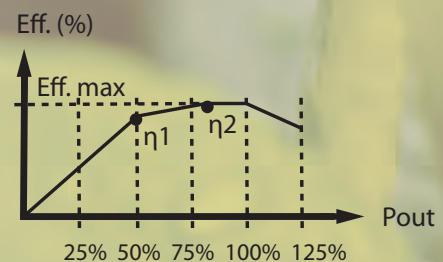
## True Green Power and High Efficiency

Power+'s UPS rightsizing enables significant reduction of energy loss, with efficiency directly influenced by load level.

Designed for highly-economical energy consumption, Power+ is a perfect fit in your data center and server room. Offering efficiency of up to 96%, a THDi of 3% on typical load, and input P.F 1 without harmonic filter, Power+ delivers:

- Significant energy savings
- Lower cooling costs
- Smaller generator sizing

Efficiency =  $P_{out}/P_{in}$



A typical 1+1 50kVA system operates at less than 50% load, therefore efficiency is low ( $\eta_1$ )  
An N+1 50kVA Power+ system operates at  $x/100 = 83.3\%$  load  
Conclusion: the efficiency of an N+1 redundant Power+ system is higher ( $\eta_2$ )

### Power with environmental integrity

Gamatronic understands that energy-savings is not only a matter of cost-savings, but also of social responsibility. Power protection solutions from Gamatronic are based on green, clean, and globally responsible energy technology that meets and exceeds power requirements - while minimizing environmental impact.

# Power+ Models

## Power+ Classic

Power+ Classic is an electrically and mechanically modular 10-100KVA UPS system, uniquely designed to grow flexibly as power requirements grow. Easily upgradable on-site through addition of plug-and-play 10KVA modules, Power+ offers the optimal combination of efficiency, economy, and usability – and boasts the industry’s lowest TCO (Total Cost of Ownership) and fastest ROI (Return on Investment).

Capacity (kVA)	10KVA	20KVA	30KVA	40KVA	50KVA	60KVA	70KVA	80KVA	90KVA	100KVA
Dimensions (mm)										
H	690	790	880	970	1070	1160	1250	1350	1440	1540
W	600 (external)									
D	690									
Weight (kg)	98	113	128	143	158	173	188	203	218	233



## Power+ 19"

Power+ 19" is a 10-20KVA rackmount solution, suitable for co-location in existing component cabinets.

Capacity	10kVA	20kVA
Dimensions		
H	4U / 177 mm	6U / 266 mm
W	19" / 483 mm	
D	600 mm	
Weight	20kg	32kg



POWER+ 19"

## Power+ RM

Power+ RM is a complete, end to end 19" 10-100KVA rackmount solution, ideal for datacenters, that includes UPS, MMBS (maintenance bypass), battery cabinet.

Built for high-density aesthetics as well as usability, Power+ RM is available in uniform and modern cabinets that integrate perfectly with existing data center design. Alternately, Power+ RM components may be easily housed in existing racks.



RM 100KVA :  
Power+ FS 10-100KVA; MMBS in Rack

RM 50KVA Comprehensive :  
Power+ FS 10-50KVA ; MMBS; Battery  
Cabinet 64x 20Ah in Rack

RM 50KVA Basic :  
Power FS 10-50KVA in Rack

Capacity (kVA)	10	20	30	40	50	60	70	80	90	100
Dimensions										
H	42U / 2,020 mm (external, including levers)									
W	19" / 600 mm (external)									
D	1,000 mm									
Weight, RM Basic (kg)	174	189	204	219	234	282	297	312	327	342
Weight, RM Comprehensive (kg)	347	362	377	392	407					

### Matching products :

Matching External Battery Cabinets :  
Battery cabinet 64 x 20 Ah in rack 42 U  
Battery cabinet 2 x 64 x 20 Ah in rack 42 U

Matching isolation transformers :  
Isolation transformer 50 kVA in rack 42 U  
Isolation transformer 100 kVA in rack 42 U

# Power+ Specifications

<b>POWER</b>										
Topology	True online battery, double-conversion VFI									
Construction	Modular: parallel hot-plugged modules; continuous operation									
<b>INPUT</b>										
Voltage	3 × 380/400/415 Vac +N +PE (5 wire system)									
Voltage range	-27 % and +20 %									
Current	3 × 15 A per module – no inrush current at startup									
Frequency	47 Hz ~ 63 Hz									
Power Factor	1									
THDI (%)	<5 %									
<b>OUTPUT</b>										
Rated Power	10 kVA / 8 kW to 100 kVA / 80 kW									
Frequency (in free-running mode)	50/60 Hz ±0.1 %									
Frequency tracking range	±0.5, ±1, ±2, ±3, ±4 Hz (selectable)									
Slew rate	1 Hz/sec									
Voltage	3 × 380/400/415 Vac (selectable) +N +PE									
Static Regulation	±1 %									
Regulation for unbalanced load	±1 % for 100 % unbalanced load									
Dynamic response to 100 % load step	±2 %, <1 ms recovery time									
Overload	110 % : 10 min; 125% : 60 s; 1000% :1 cycle									
Waveform	Sinusoidal									
THD	Less than 2 % for linear load									
Load CF (max)	6:1									
Ac-Ac efficiency (nominal)	Up to 96 %									
Dc-Ac efficiency (nominal)	Up to 98 %									
<b>BATTERIES</b>										
Dc nominal voltage	±432									
Quantity	64 × 12 V									
Type	Sealed, lead acid, rechargeable									
<b>GENERAL</b>										
Maximum power dissipation (Po=8 kW)	333 W (1136 BTU/h) for a single module									
Ambient temperature (°C)	-10 to +40 °C (operating) -20 to +60 °C (storage)									
Relative humidity	95 % max non-condensing									
Altitude (m)	1500 m without derating									
Enclosure	IP20									
Cooling system	Forced air: multi-fan with speed control									
<b>STANDARDS</b>										
EMC	IEC 62040-2, under EMC 2004/108/EC									
Design	IEC 62040-3									
Safety	IEC 62040-1, under LVD 2006/95/EC									
Low magnetic field radiation	EMF as per ICNIRP									
<b>DIMENSIONS</b>										
<b>One 10 kVA module (HxWxD)</b>	88 mm (2U) x 483 mm (19") x 455 mm									
<b>Weight</b>	9 kg									
<b>ACOUSTIC NOISE (@ 1.5 m from front of unit)</b>										
Noise (dBA) with half load	48	52	53	54	55	55.8	56.4	57	57.5	58
Noise (dBA) with full load	51	54	55	57	58	58.8	59.4	60	60.5	61

# Supplemental Products

## Internal Battery Cabinets and Batteries

Gamatronic's standard battery cabinets combine safety and flexibility with easy battery access.

Battery Capacity	Power+ Model	Dimensions (HxWxD) of each cabinet
64x 5 Ah Power+	Classic (up to 3 cab.)	6Ux563x685 mm
64 x 5 Ah 19"	Power+ 19" ( up to 3 cab.)	6Ux19"x685 mm
64 x 17/20 Ah	Power+ Classic	833x563x971.6 mm
64 x 17/20 Ah 19"	Power+ RM	19"x20Ux1000 mm

## External Battery Cabinets

Gamatronic's external battery cabinets may be delivered pre-built or in easily-assembled kit form to reduce shipping costs.

Battery Capacity	No. of Cabinets for POWER+ *	Dimensions (HxWxD) of each cabinet
64x17/20Ah	1 Pcs (each cabinet incl. 64 batt.)	1700x1121x300mm
64x24/26/38/40Ah	2 Pcs (each cabinet incl. 32 batt.)	1700x1121x300mm
64x65/90Ah	4 Pcs (each cabinet incl. 16 batt.)	1230x800x420mm

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

# Management

## Power+ Controller

All Power+ systems are supplied with an integral Power+ Controller that enables full remote UPS management through web access. This includes display of active alarms and alarm log access, automatic server shutdown, email alerts, and management of SNMP trap for interface with NMS software. Together with the optional external cellular modem, Power+ can also provide SMS alerts and enable remote cellular commands.

## WING

WING is a GSM cellular communication device, installed on UPS and DC systems, which provides SMS alerts of predefined system events to end users or control centers.

## G4 and G-Eye

Available for both manned and unmanned sites, the G4 and G-Eye Management and Monitoring Systems deliver user-friendly unit monitoring, control and management of physical UPS sites - including temperature and humidity, movement and doors, air conditioning units, servers, power devices , and more.

## PSM

PSM P+ is Windows-based shutdown software supported by WIN 2000/XP/2003, installed on a local PC and connected to P+ in the LAN. Shutdown of all Unix-based and Netware computers is supported through the master computer.

## GEMSi

Supporting both Gamatronic and a wide range of other power products, GEMSi (Gamatronic Element Management System) is a highly user-friendly application that provides real time remote monitoring and management of up to 1600 UPS control units at diverse and distributed sites.





## Power+ Applications

Modular and advanced, Power+ solutions are an excellent choice for:

• **Local Area Networks** • **Servers** • **Data Centers** • **Point of Sale Applications** • **Telecom Facilities** • **Medical Equipment** • **Industrial PLCs**

Visit our website at: [www.gamatronic.com](http://www.gamatronic.com)

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