



EMERGENCY LIGHTING INVERTER

Power Wave 4

60 to 500 kVA, Three Phase

True Galvanic isolation design

The ultimate UPS solution – providing uninterrupted power and protection against noise, lightning, and leakage current.

Designed to protect against a floating neutral

Ensures the safety of personnel and UPS.

Advanced digital signal processing

Increased reliability and efficiency through the use of DSP, IGBT and advanced switching components.



Green Mode Operation

Hybrid design, customer selectable for green mode (fast transfer less than 2ms.).

Modular design for ease of troubleshooting and maintenance

Quick change components speed repairs and cut down time.

Redundant Multi-CPU design allows the software and hardware to work together as a team

This results in the highest reliability possible.

The most intelligent and safe battery test circuitry available today

- No risk of AC output failure during test of failed batteries
- Maximizes battery bank protection when leakage or a ground fault is present

Battery Exerciser

User selectable

Hi-Tech fan speed control

Increases fan life expectancy while reducing audible noise

Individualized inverter support on each phase

Maintains specified characteristics, even with 100% unbalanced load.

Intelligent, fully temperature compensated battery charger

- Prolongs battery life
- Selectable high charging capacity for large capacity extended backup time battery banks

Optimum design for heat dissipation

The control and power circuits are separated to reduce operating temperature for high reliability under adverse operating conditions.

Battery Power start feature

The unit can be started with or without the AC mains using battery power alone eliminating large surge currents.

A selection of optional accessories to meet your particular needs are available

- Remote control panel
- 3-Phase PC monitoring software
- Battery monitoring module
- 3-Phase SNMP card
- Emergency Power Off Switch
- Input harmonic filter – reduces T.H.D. (Total Harmonic Distortion) of the input current



Listed to
UL1778 and UL924

Applications

Production Facility
Testing Lab
Telecommunications
Industrial
Government
Public Building
Schools
Healthcare
Cruise & Cargo Ship
Banking
Printing Facility



Power Wave 4 Specifications

Power Rating: 60, 80, 100, 120, 160 kVA

(also available upon request 200, 240, 300, 400, 500 kVA)

Input Voltage: 208Y/120V or 480Y/277VAC (-15% to +15%)

Output Voltages: 208Y/120V or 480Y/277VAC

Output Frequency (Inverter Operation): 60 Hz \pm 1 Hz

Voltage Regulation: \pm 1% at 100% unbalanced load

Output Voltage Wave Form: Sine-Wave <2% THD.

Crest Factor: 3:1 Typical

Surge Protection: The UPS will protect itself and the load against surges as defined in ANSI/IEEE C62.41 Categories A and B.

Isolation: True galvanic isolated

Battery: Sealed maintenance-free VRLA or Long Life Battery (available upon request)

Recharge Time: Varies per KVA and conforms to UL924.

Environmental:

Humidity: 0 - 90% (non-condensing)

Operating Temperature: UPS: 0° to 40°C. (32° - 104°F)

Battery: 20° to 30°C. (68° - 86°F) higher temperature batteries are available for special order

Storage Temperature: -20° to 60°C. (-4° - 140°F) electronics only.

Altitude: Up to 5,000 ft

Inverter Cabinet (Off-white color):

60kVA: 34"W x 63"H x 31.5"D

80-160kVA: 55.5"W x 63"H x 31.5"D

200-300kVA: 86.5"W x 63"H x 31.5"D

400kVA: 133"W x 71"H x 39.5"D

500kVA: 178"W x 71"H x 39.5"D

Battery Cabinet (Matte Black color):

51"W x 70"H x 30.5"D

Battery	Sealed Lead Acid VRLA	NICAD
No. of batteries	29	271 Cells
Voltage Range	295 - 410V	285 - 415V
Low Batt Volt (warning)	320VDC	305VDC
Low Batt Shut Down	295VDC	285VDC
Boost Charge	402VDC	415VDC
Float Charge	390VDC	410VDC

KVA/KW	Input - Output Voltages	MODEL NUMBERS	DC Voltage	BTU/ Hr	**Weights (lbs)	
					UPS	Each Battery Cab (#) of cab
60 / 48	208/120 - 208/120 480/277 - 480/277	PW060B05ATT3 PW060H09ATT3	348	11942 11942	1724	4822 (2)
					1724	
80 / 64	208/120 - 208/120 480/277 - 480/277	PW080B05ATT3 PW080H09ATT3	348	15695 15695	2276	4040 (3)
					2276	
100 / 80	208/120 - 208/120 480/277 - 480/277	PW100B05ATT3 PW100H09ATT3	348	18425 18425	2984	3345 (3)
					2984	
120 / 96	208/120 - 208/120 480/277 - 480/277	PW120B05ATT3 PW120H09ATT3	348	22178 22178	3138	4929 (3or4)
					3138	
160 / 128	208/120 - 208/120 480/277 - 480/277	PW160B05ATT3 PW160H09ATT3	348	29684 29684	3868	4874 (4)
					3868	
* 200 / 160	208/120 - 208/120 480/277 - 480/277	PW200B05ATT3 PW200H09ATT3	348	39238 39238	5746 5746	*
* 240 / 192	208/120 - 208/120 480/277 - 480/277	PW240B05ATT3 PW240H09ATT3	348	44356 44356	6229 6229	*
* 300 / 240	208/120 - 208/120 480/277 - 480/277	PW300B05ATT3 PW300H09ATT3	348	55616 55616	7293 7293	*
* 400 / 320	208/120 - 208/120 480/277 - 480/277	PW400B05ATT3 PW400H09ATT3	348	78476 78476	9061 9061	*
* 500 / 400	208/120 - 208/120 480/277 - 480/277	PW500B05ATT3 PW500H09ATT3	348	98948 98948	10166 10166	*

* Units are available only upon request.

STANDARD FEATURES

- 6 pulse or 12 pulse controlled rectifier (12 pulse for 80 kVA & up)
- Input main circuit breakers
- Data and events LCD display
- Built-in Transient Voltage Surge Suppressor
- EMI suppression
- PWM methodology (DSP)
- Isolation transformer at output for True galvanic isolation
- Modular design to facilitate ease and speed of service
- Cold start function: UPS can be started with battery power only without an AC source
- Green Mode Operation
- Multi-CPU design: Several CPUs are employed in control circuit and critical functions are designed with parallel redundancy for added reliability
- Protection against misuse: circuit breaker on/off sensor, and power supply sensor, the user cannot cause UPS damage by operator error.
- Intelligent charger: UPS will automatically recharge with temperature compensation.
- Intelligent battery test
- Redundant power supply
- RS-232 / RS-485 for various accessory options
- External Shutdown- two pairs of terminals for UPS shut down
- DB9 Connection-4 of RS-485 & 1 of RS-232:
The following are some connection examples of optional modules
 - CNR21 (RS-232): UPSCOM- Software for PC Monitoring, SNMP card
 - CNR9 (RS-485): DCMAN- Battery Monitoring Module
 - CNR10 (RS-485): UPSCAN- Remote Control Panel
 - CNR12,13,14,15,17,18,19 (RS-485): UPSCALL- Auto Dialing Module
 - CNR11: for transferring RS-485 into RS-232

OPTIONS

- Remote control panel UPSCAN™
- Software for PC monitoring UPSCAN™
- Auto dialing module UPSCAN™
- Battery Monitoring module DCMAN™
- Output Circuit Breaker
- Battery Exerciser
- 8 Dry contacts: INVON,OVL,FAULT, SS, BYPASS, BACK-UP, BATL, COM.

Specifications are subject to change without prior notification.

