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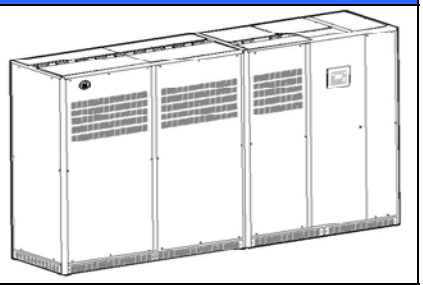
Technical Data Sheet - 750kVA UL Listed

SG Series Uninterruptable Power Supply
750kVA UL listed with eBoost™



General Data

Topology		True On-Line Double Conversion			
Nominal output power at PF =0.9 pf lead to lagging		750kVA / 675 kW			
System Efficiency in Double Conversion operating mode @0.9 pf lagging load, nominal voltage/frequency, energy storage disconnected		25% load	50% load	75% load	100% load
6 pulse Rectifier with 5th Filter		92.8%	94.3%	94.3%	93.8%
6 pulse Rectifier with 5th and 11th Filter		92.8%	94.3%	94.3%	93.7%
12 pulse Rectifier with out 11th Filter		91.0%	93.0%	93.0%	92.8%
12 pulse Rectifier with 11th Filter		91.0%	93.0%	93.0%	92.7%
System Efficiency in eBoost Operating mode @0.9 pf lagging load, nominal voltage/frequency, energy storage disconnected		25% load	50% load	75% load	100% load
with 6 pulse Rectifier		96.7%	98.3%	98.7%	98.7%
with 12 pulse Rectifier		96.1%	98.0%	98.5%	98.6%
Heat rejection in Double Conversion operating mode @0.9 pf lagging load, nominal voltage/frequency, energy storage disconnected	25% Load	50% Load	75% Load	100% Load	
6 pulse Rectifier with 5th Filter	44'674	69'609	104'413	152'237	BTU/hr
	13.1	20.4	30.6	44.6	kW
6 pulse Rectifier with 5th and 11th Filter	44'674	69'609	104'413	154'857	BTU/hr
	13.1	20.4	30.6	45.4	kW
12 pulse Rectifier with out Filter	56'947	86'679	130'019	178'696	BTU/hr
	16.7	25.4	38.1	52.4	kW
12 pulse Rectifier with 11th Filter	56'947	86'679	130'019	181'374	BTU/hr
	16.7	25.4	38.1	53.2	kW
Heat rejection in eBoost Operating mode @0.9 pf lagging load, nominal voltage/frequency, energy storage disconnected	25% Load	50% Load	75% Load	100% Load	
with 6 pulse Rectifier	19'650	19'916	22'456	30'336	BTU/hr
	5.8	5.8	6.6	8.9	kW
with 12 pulse Rectifier	23'367	23'502	25'911	32'703	BTU/hr
	6.8	6.9	7.6	9.6	kW
Max Cooling Air (77°F - 86°F / 25°C - 30°C)	9157 CFM				
Audible noise level (at 5 ft./1.52Mts)					
Double Conversion Operating Mode	75 dB(A)				
eBoost Operating Mode	60 dB(A)				
Operating temperature range					
UPS	32°F - 104°F (0°C - 40°C)				
Battery	68°F - 77°F (20°C - 25°C)				
	(Note: Higher temperatures shorten battery life)				
Storage temperature range					
UPS	5°F - 122°F (-15°C to +50°C)				
Battery	32°F - 104°F (0°C - 40°C)				
(VRLA)	Storage time is 3 months at 77°F (25°C) (consult factory for higher times)				
	(Note: Higher temperatures reduce battery storage time)				
Relative humidity	0-95%, non-condensing				
Maximum Altitude	3281 (1000) (no derating)				ft (M)
	4921 (1500)	6562 (2000)	8202 (2500)	9843 (2500)	ft (M)
	-5%	-9%	-14%	-18%	Derating

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Enclosure					
Type :	Indoor (IP20) and NEMA PE 1				
Safety :	Internal dead front construction				
Cooling :	Forced Air (Redundant Fans)				
Color :	Black (RAL 9005)				
Installation					
Rigging :	Suitable for handling by forklift				
Mounting :	Floor mounting holes provided				
Installation and maintenance access :	Front access required for normal maintenance				
Conduit Entry :	Top and Bottom standard				
Standards	UL 1778, IEC 62040, ISO9001				
Electrostatic discharge immunity	4kV contact / 8kV air discharge				
Configuration					
Standard :	Stand-alone				
Optional :	Redundant Parallel Architecture (RPA) - up to 6 units may be paralleled in any combination for redundancy or capacity				
Short Circuit Current Rating	UPS is designed for installation in an electrical system up to 65kA fault current (100kA optional)				
NOTE 1: The Bypass input must be fed from a grounded-WYE electrical system. refer factory for 3-wire operation on bypass input. The load cannot use neutral unless the bypass input feeder includes neutral.					
Rectifier					
Configuration	6-Pulse Thyristor, Three phase bridge				
	12-Pulse Thyristor, Three Phase (optional)				
Input					
Voltage :	480VAC, 3-phase, 3 wire + ground (NOTE 1)				
Voltage Tolerance:	(-15% to +10% without battery discharge)				
Frequency :	60Hz, +/-5% (57-63Hz)				
Rectifier Type & Filter Configuration:	Power Factor (Typical)	Harmonic Current Distortion			
6 pulse Rectifier w/ 5th filter:	0.93 lagging	< 7% THD			
6 pulse Rectifier w/ 5th & 11th filters:	0.96 lagging	< 5% THD			
12 pulse Rectifier no filter:	0.82 lagging	< 9% THD			
12 pulse Rectifier w/ 11th filter:	0.86 lagging	< 4% THD			
Inrush current :	Limited by soft-start circuit				
Power walk-in :	30 seconds (Adjustable)				
Output Voltage Tolerance :	+/- 1%				
DC ripple voltage :	+/- 1%				
DC ripple current :	Max. 5% of battery capacity expressed in amps				
UPS configurations Vs. current limits		6 Pulse with 5th Filter	6 Pulse with 5th & 11th Filter	12 Pulse with 11th Filter	12 Pulse w/o Filter
Nominal input (100% Linear Load)	Current[A] :	919	900	1032	1082
(0.9 pf lagging Load, fully chrg'd bat.)	kVA :	764	747	857	900
	kW :	726	726	737	737
Maximum input (100% Linear Load)	Current[A] :	1103	1080	1245	1306
(0.9 pf lagging load, max. chrg current)	kVA :	917	898	1034	1085
	kW :	871	871	890	890
Max. charge current	A:	220	220	220	220

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Battery		
Battery compatibility	Lead-acid or NiCd, VRLA or flooded	
Number of cells	240 (lead-acid)	
Float voltage at 68°F (20°C)	540VDC	
Minimum discharge voltage	396VDC (adjustable)	
Recharge time for 30 minute battery	10 times the discharge time	
Battery ground fault detection	Standard	
Automatic and manual battery test	Standard	
100% load, 0.8 PF lag	632 kWB	
100% load, 0.9 PF lag	710 kWB	
Maximum Discharge Current	1793 A	
Inverter		
Nominal output voltage	480VAC, 3-phase, 4 wire + ground (NOTE 1)	
Inverter bridge	IGBT technology and Space Vector Modulation	
Output Isolation transformer	Standard (Delta‖Zig Zag)	
Output waveform	True sine wave	
Output voltage tolerance		
Static :	+/- 1%	
Load step 0% - 100% - 0% :	+/- 3%, recovering to within +/- 1% in 1 cycle	
Load step 0% - 50% - 0% :	+/-2%, recovering to within +/- 1% in 1 cycle	
100% unbalanced load (Ph-N) :	+/- 3%	
Output Voltage Distortion		
100% linear load :	2% THD maximum	
100% non-linear load (per IEC 62040-1) :	3% THD maximum	
Crest factor capability	≤3:1	
Output neutral rating	200%	
Phase displacement		
100% balanced load :	120° +/- 1%	
100% unbalanced load :	120° +/- 2%	
Output frequency (Free running)	60Hz +/- 0.01%	
Synchronized with utility :	+/- 4% (adjustable from 57.6Hz to 62.4Hz)	
Overload capability (on inverter)	125% at 0.9 PF for 10 minutes	
	150% at 0.9 PF for 30 seconds	
Short circuit Capability (on inverter)	700% of rated current for first 1.2 ms, followed by 220% for 100 ms, electronically limited	
Maximum Output Current @ 0.9pf lagging load	902 A	
Static Bypass		
Input configuration	Common with rectifier (default) or dual input	
Input wiring configuration	same as Load side	
Configuration	Full load continuous rated static switch	
	Backfeed protection	
	Backfeed protection + Semiconductor fuse for clearing fault currents	
Transfer limits	+/- 10% of nominal output voltage (adjustable)	
Overload capability (on bypass)	110% continuous	
	200% for 5 minutes	
Short circuit capability (on bypass)	2000% for 1/2 cycle (non-repetitive)	
eBoost™ Operating Mode		
Input wiring configuration	480VAC, 3-phase, 4 wire + ground (NOTE 1)	
Output waveform	Continuously monitored	
Transfer time (static bypass to Inverter)	<4ms (typical)	
Transfer limits		
Steady-state RMS tolerance	+/-20 Vrms (adjustable)	
Instantaneous voltage distortion (with respective to Normal Sine wave)	Magnitude	+/-75Vp
	Duration	500µs (adjustable)
Steady-state frequency tolerance	+/-3 Hz	
Instantaneous phase shift	0.15 radians (8.5 Deg)	

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External Interface	
Alarm contacts (voltage-free)	
Standard :	6 user defined contacts (form 'C') (1A / 24V DC)
Optional :	12 user defined contacts (form 'C') (1A / 24V DC)
	(23 selectable signals include aux. Inputs 1 & 2)
Communication - Optional	RS-232 / SNMP / MODBUS
Input signals	Emergency Power Off (user supplied N.C. contact)
	Aux. input 1 * (default = On Generator)
	Aux. input 2 * (configurable)
	* Status displayed on LCD panel
Front Panel Controls, Signals & Alarms	
	
Mimic Diagram	Represents the operational status of the UPS on Home Page of LCD
Operation LED	Visual (LED) when load is on inverter OR load is on bypass
	BLINK during service check
Alarm LED	Visual (LED) and audible signal, activates approx. 3 minutes
Warning LED	Visual (LED) and audible signal active when any alarm condition is
	BLINK when alarm is active and not acknowledged
Load Level / Battery Run Time	Bar graph status indicator on Home Page of LCD
	Load level in %, Battery run time in min.
Multilanguage Graphic LCD	Display of UPS metering functions , event history, configuration of
	supports 14 Languages (Chinese, Czech, Dutch, English, Espanola, Francais, German, Italiano, Polish , Portuguese, Russian, Slovensko, Soumi, Swedish)
Push Buttons	-Inverter On
	-Inverter Off
	-Total Off with protective cover
Optional Features	
RPA	-Redundant Parallel Operation & Intelligent Energy Management Integrated (IEMi)
eBoost™ (Patented) Operating Mode	-High Efficiency Operating Mode for Single and Multi module applications
RPA Cable Saver Inductor	-Simplify Parallel Systems installation & Improve current sharing
Dual Input	-Integral to UPS cabinet. No additional cabinet required
12 Pulse Rectifier	-With phase shifted isolation transformer inside UPS cabinet
11th Harmonic Input Filter	-Integral to UPS cabinet. No additional cabinet required
Input/Output Transformers	-Available in external cabinets for isolation or voltage transformation
External Maintenance Bypass	-Available in external cabinet or as a part of output switchgear cabinet
Remote Status Panel	-Active mimic diagram w/ Stop Operation and Summary Alarms
Protection Software	-PC operated remote monitoring, control and diagnostics
SNMP Communication	-Ethernet interface for network connection

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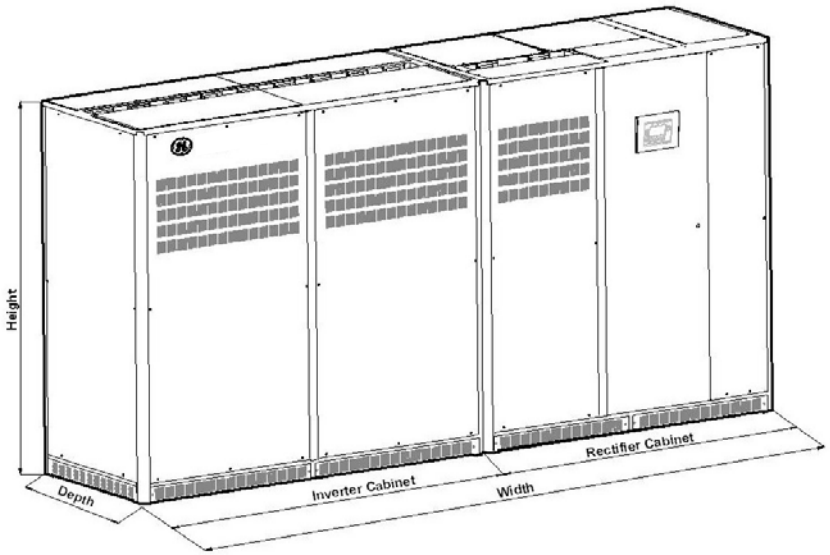
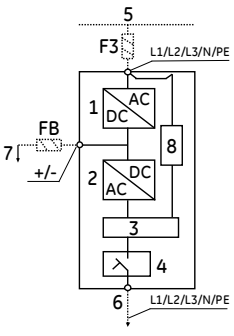
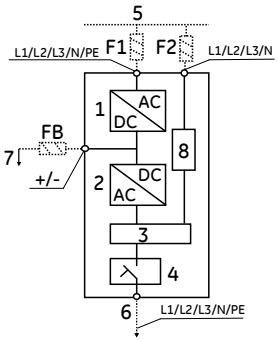
Mechanical Data



750 kVA Enclosure

	Dimensions (inches / mm)			
	Rectifier	Inverter		
	Width (W)		Depth (D)	Height (H)
with 6 & 12 pulse Rectifier :	66.9 / 1700	79.5 / 2020	35.4 / 900	76.8 / 1950
Configuration	Weight (lbs./ Kg)		floor load (lbs./sq ft / Kg/sq m)	
	Rectifier	inverter	Rectifier	inverter
6 pulse Rectifier with 5th filter	3468 / 1573	6332 / 2872	211 / 1028	324/1580
6 pulse Rectifier with 5th & 11th filter	3607 / 1636	6332 / 2872	219 / 1069	324/1580
12 pulse Rectifier with out filter	5002 / 2269	6332 / 2872	304 / 1483	324/1580
12 pulse Rectifier with 11th filter	5141 / 2332	6332 / 2872	312 / 1524	324/1580

UPS Block Diagram

	Standard Configuration	With Separate Bypass Mains
1.....Rectifier		
2.....Inverter		
3.....Static Bypass		
4.....Load switch		
5.....Utility		
6.....Load Output		
7.....Battery		
8.....RPA Cable Saver Inductor (optional)		
FB.....Battery Fuses or Circuit Breaker		
F1, 2, 3.....AC Input Fuses or Circuit Breaker		

Notes

Notes

Notes

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