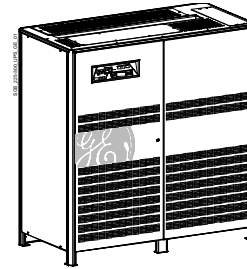




Technical Data Sheet

Digital Energy SG Series (225-300kVA)



GENERAL DATA				
Topology	True On-line double conversion			
Nominal output power at PF = 0.7 lag. to 0.8 lag.	kVA	225	300	
Overall efficiency	100% load, 0.8 PF :	%	92.4	92.7
	50% load, 0.8 PF :	%	92.7	93.1
Heat rejection at 100% load, 0.8PF and charged battery	BTU/hr	50,512	64,164	
	kW	14.80	18.80	
Cooling Air (77F - 86F / 25C - 30C)	CFM	2,541	3,228	
Audible noise level (at 5 ft.)	dB(A)	67	67	
Fault Current Rating	KAIC	50	50	
Operating temperature range	UPS :	32F - 104F (0C - 40C)		
	Battery :	68F - 77F (20C - 25C)		
		Higher temperatures shorten battery life		
Storage temperature range	UPS :	5F - 122F (-15C - +50C)		
	Battery : (VRLA)	32F - 104F (0C - 40C)		
		Storage time is 6 months at 77F (25C). Higher temperatures reduce battery storage time.		
Relative humidity		0-95%, non-condensing		
Maximum altitude	Without derating :	3281ft no derating		
	With derating :	4921ft/-5% 6562ft/-9% 8202ft/-14% 9843ft/-18%		
Enclosure	Type :	Indoor (IP20) and NEMA-PE-1		
	Safety :	Internal dead front construction		
	Cooling :	Forced Air (Redundant Fans)		
	Color :	White (RAL 9010)		
Installation	Rigging :	Suitable for handling by forklift		
	Mounting :	Floor mounting holes provided		
	Installation and maintenance access :	Front access required for normal maintenance		
	Conduit Access :	Top and Bottom standard		
Standards		UL 1778, IEC 62040, ISO9001, FCC Class A Optional		
Electrostatic discharge immunity		4kV contact / 8kV air discharge		
Configuration	Standard :	Stand-alone		
	Optional :	RPA - up to 8 units may be paralleled in any combination for redundancy or capacity		

RECTIFIER			
Configuration	Six thyristor, three phase bridge		
Input	Voltage :	480VAC, 3-phase, 4 wire + ground (-20% to +15% without battery discharge)	
	Frequency :	60Hz, +/-10% (54-66Hz)	
	Power factor :	0.8 lagging (typical)	
	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	
Data	Signature 5000 Model	225	300
Nominal input (100% load) (0.8 PF load, fully chrg'd bat.)	Current[A] :	282.3	375.2
	kVA :	234.6	311.8
	kW :	194.8	258.8
Maximum input (100% load) (0.8 PF load, max. chrg current)	Current[A] :	360.0	480.0
	kVA :	299.0	399.0
	kW :	245.0	319.0
Max. charge current	0.8 PF load :	60	80



Battery				
Battery compatibility	Lead-acid or NiCd, VRLA or flooded			
Number of cells	240 (lead-acid)			
Float voltage at 68F (20C)	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			
Data	Signature 5000 Model	225	300	
100% load, 0.66 PF lag.	kWB :	139.5	211.0	
100% load, 0.8 PF lag.	kWB :	191.6	255.8	
Maximum Discharge Current	[A]:	484	646	

Inverter				
Nominal output voltage	480VAC, 3-phase, 4 wire + ground			
Inverter bridge	IGBT technology and Space Vector Modulation			
Output Isolation transformer	Standard			
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 (IEC62040) :	3% THD maximum		
Crest factor capability	Greater than 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 0.8 PF for 10 minutes. 150% at 0.8 PF for 60 seconds			
Short circuit capability (on inverter)	700% of rated current for first 1.2 ms, followed by 220% for 100 ms, electronically limited			
Data	Signature 5000 Model	225	300	
Maximum Output Current @ 0.8pf	[A]:	270.0	360.0	

Bypass	
Input configuration	Common with rectifier (default) or dual input
Primary components	Full load rated static switch Back feed protection Internal maintenance bypass
Transfer limits	+/- 10% of nominal output voltage (adjustable)
Overload capability (on bypass)	110% continuous 200% for 5 minutes
Short circuit capability (on bypass)	1000% for 1/2 cycle (non-repetitive)

External Interface		
Alarm contacts (voltage-free)	Standard :	6 user defined contacts (form 'c')
	Optional :	12 user defined contacts (form 'c') (23 selectable signals include aux. Inputs 1 & 2)
Serial communication	RS-232	
Input signals	Emergency Power Off (user supplied n/c contact) Aux. input 1 * (default = On Generator) Aux. input 2 * (default = not defined) * Status displayed on LCD panel	



Front Panel Controls, Signals & Alarms



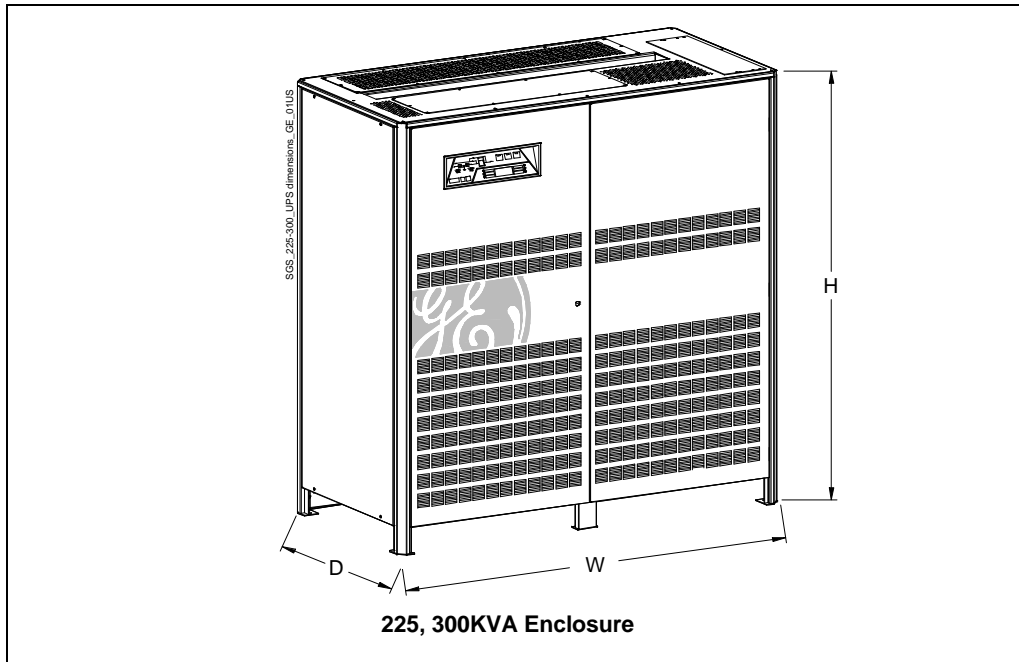
Mimic Diagram:	Represents the operational status of the UPS, with integrated LEDs and power flow indicators
Service Check LED:	Turns on when service is due or the internal manual bypass is active
Common Alarm:	Visual (LED) and audible signal active when any alarm condition is present
Stop Operation:	Visual (LED) and audible signal, activates approx. 3 minutes (adjustable) before complete and automatic load shutdown (due to a fully discharged battery or an over temperature condition with utility power not available)
Load Level / Battery Run Time:	Bar graph status indicator
LCD Display:	Display of UPS metering functions and event history (multi-language)
Push Buttons:	<ul style="list-style-type: none">- Inverter On- Inverter Off- Alarm Silence- Lamp Test- Load Off with protective cover

Optional Features

RPA	- Redundant Parallel Operation and Intelligent Energy Management
Input/Output Transformers	Available in external cabinets for isolation or voltage transformation
5th Harmonic Input Filter	- Integral to UPS cabinet. No additional cabinet required
External Maintenance Bypass	- Available in 2 or 3 breaker, panel mounted configurations.
Remote Status Panel	- Active mimic diagram w/ Stop Operation and Summary Alarms
Protection Software	- PC operated remote monitoring, control and diagnostics
SNMP	- Ethernet interface for network connection
FCC Filter	- Brings UPS into compliance with FCC, Class A Specifications
3 Wire Input Kit	Enables UPS to be fed from a Delta source for 3phase loads only.



Mechanical Data



UPS Rating (kVA)	Dimensions			Weight	
	Height	Width	Depth	UPS	Floor Loading
225	71"	65"	31.5"	2756 lbs	194 lbs/sq.ft
300	71"	65"	31.5"	3087 lbs	218 lbs/sq.ft

UPS Block Diagram

- 1..... Rectifier
- 2..... Inverter
- 3..... Static Bypass
- 4..... Maintenance Bypass
- 5..... Utility
- 6..... Load Output
- 7..... Battery
- 8..... Battery Contactor
- FB..... Battery Fuses or Circuit Breaker
- F in..... AC Input Fuses or Circuit Breaker
- Lb..... Battery Line
- L in..... Input Line
- L out..... Output Line

