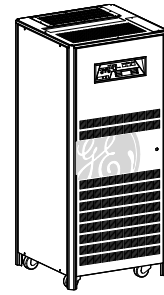




GE
Critical Power



Technical Data Sheet SG Series (50-80kVA)

GENERAL DATA			
Topology	True On-line double conversion		
Nominal output power at PF = 0.7 lag. to 0.8 lag.	kVA	50	80
System efficiency	100% load, 0.8 PF :	%	91.8
	50% load, 0.8 PF :	%	92.5
Heat rejection at 100% load, 0.8PF and charged battery	BTU/hr	12,201	19,005
	kW	3.57	5.56
Cooling Air (77°F - 86°F / 25°C - 30°C)	CFM	544	847
Audible noise level (at 5 ft.)	dB(A)	60	63
Fault Current Rating			
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 6 months at 77°F (25°C) (Note : 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 :	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 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, 3 wire + ground (NOTE 1) +/-15% ; (no battery discharge at -20%)		
	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	SG Series (kVA)	50	80	
Nominal input (100% load) (0.8 PF load, fully chrg'd bat.)	Current[A] :	65.5	104.7	
	kVA :	54.5	87.0	
	kW :	43.6	69.5	
Maximum input (100% load) (0.8 PF load, max. chrg current)	Current[A] :	81.0	125.0	
	kVA :	67.0	104.0	
	kW :	50.2	80.8	
Max. charge current	0.8 PF load :	15	25	

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	SG Series (kVA)	50	80	
100% load, 0.8 PF lag.	kWB:	42.3	67.7	
Maximum Discharge Current	[A]:	100	159	

Inverter				
Nominal output voltage		480VAC, 3-phase, 4 wire + ground (NOTE 1)		
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 (per IEC 62040) :	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	SG Series (kVA)	50	80	
Maximum Output Current @ 0.8pf [A]		60.1	96.2	

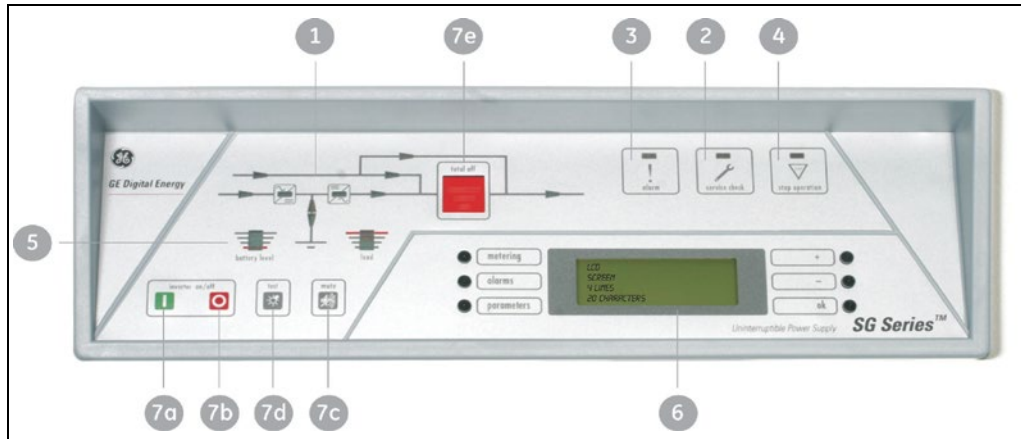
NOTE 1: The Bypass input must be 480V/277V, 3-Phase, 4-Wire, WYE, plus ground, fed from a grounded-WYE electrical system.



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



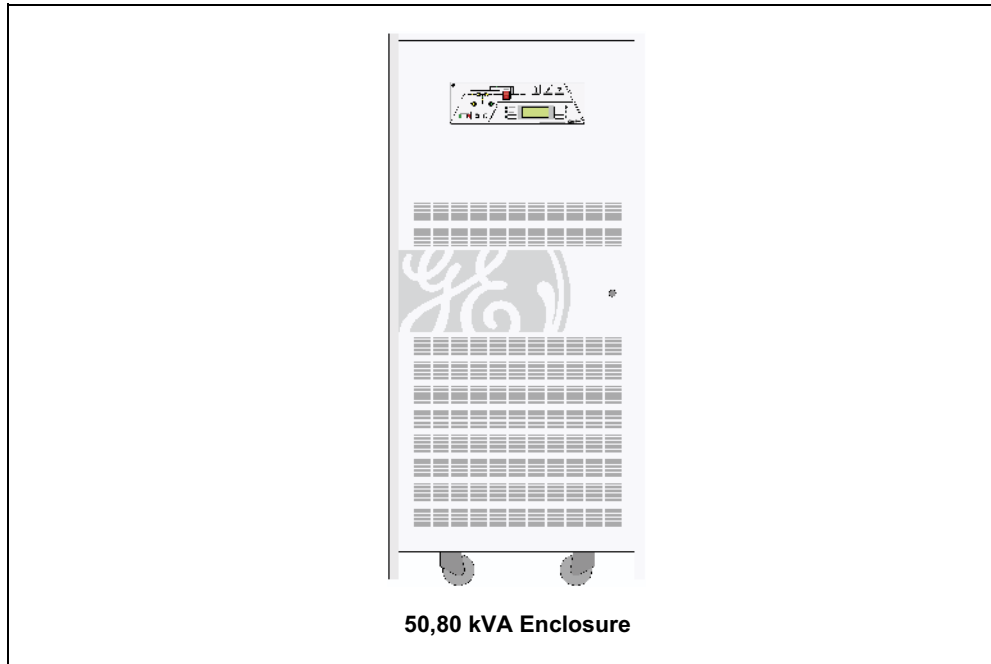
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|------------------------------------|--|
| (1) Mimic Diagram: | Represents the operational status of the UPS, with integrated LEDs and power flow indicators |
| (2) Service Check LED: | Turns on when service is due or the internal manual bypass is active |
| (3) Common Alarm: | Visual (LED) and audible signal active when any alarm condition is present |
| (4) 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 normal power not available) |
| (5) Load Level / Battery Run Time: | Bar graph status indicator |
| (6) LCD Display: | Display of UPS metering functions and event history (multi-language) |
| (7) Push Buttons: | (7a) - Inverter On
(7b) - Inverter Off
(7c) - Alarm Silence
(7d) - Lamp Test
(7e) - Load Off with (protective cover) |

Optional Features

- | | |
|-----------------------------|--|
| RPA™ | - Redundant Parallel Operation and Intelligent Energy Management (IEM) |
| 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 Communication | - Ethernet interface for network connection |
| FCC Filter | - Brings UPS into compliance with FCC, Class A Specifications |



Mechanical Data



UPS Rating (kVA)	Dimensions			Weight	
	Height	Width	Depth	UPS	Floor Loading
50	71"	31.50"	31.50"	1257 lbs	239 lbs/sq.ft
80	71"	31.50"	31.50"	1489 lbs	283 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

