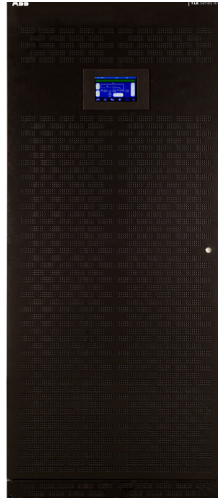


# SG Series IEC

## Reliable and efficient standalone UPS for critical applications



The SG Series is one of the best performing, most reliable and most versatile three-phase UPS systems available to those who need critical power protection. This true online double conversion UPS exploits its network integration software and communication connectivity to provide comprehensive, easy-to integrate power protection for almost any IT environment. The SG Series operates in VFI-mode, which maximizes load protection at any time. Instead of standard filters, the UPS runs an innovative control algorithm on the

IGBT rectifier to ensure the delivery of clean power in a most efficient manner.

ABB's unique RPA™ technology (redundant parallel architecture) allows units to work in parallel, thus further increasing reliability and uptime. Through their complete life cycle, all ABB UPS systems are fully supported by service teams that provide world-class, 24/7 preventive and corrective services, training and application expertise.

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### High efficiency

- Up to 94.6 percent in double conversion mode and up to 99 percent in eBoost mode
- eBoost operation minimizes losses and can save annual power and cooling costs
- The PurePulse IGBT rectifier keeps your supply network clean and compact by shrinking the circuit breaker, cabling and generator

### Low cost of ownership

- Optimal performance for a wide range of power
- Excellent dynamic response in case of pulsating load
- Scalable paralleling technique reduces operating footprint and increases system reliability by eliminating the need for external paralleling equipment

### High performance and availability

- Enhanced output performance that protects and supplies even the most sensitive IT loads with a lagging-leading power factor (0.9) without derating
- Excellent dynamic performance and low output voltage distortion
- Inverter zig-zag isolation transformer provides outstanding short-circuit capability and load galvanic separation

### Easy installation and configuration flexibility

- True front access for operation and maintenance
- reduces mean time to repair (MTTR)
- The redundant parallel architecture delivers reliability, redundancy and scalability
- Up to six UPS frames can be paralleled

# SG Series IEC

## Product features

### Input performance

#### PurePulse™ - IGBT rectifier clean input

PurePulse is an innovative control algorithm applied to the IGBT rectifier (available for models from 10 to 500 kVA). This current source rectifier assures an input total harmonic distortion (THDi) of less than 2 percent at full and partial loads and draws a pure sinusoidal waveform from the mains.

#### Robust rectifier for a wide input range

The wide AC input voltage and frequency window avoids unnecessary battery discharge even when operating from an unstable AC source (for example, a diesel generator).

#### Programmable soft start

The programmable soft start allows the rectifier to ramp up in a programmable period (0-15 s), thus eliminating inrush current. This feature reduces the need to oversize the input power system (gensets, feeder cables and overcurrent devices).

### Output performance

#### THDU

The SG Series has very low output voltage THD, even with 100 percent unbalanced or 100 percent nonlinear loads connected.

#### Overload capabilities

The SG Series UPS has a robust inverter capable of delivering 150 percent overload for 1 min and 125 percent for 10 min, thus ensuring power protection continuity for applications requiring start-up overcurrent and for temporary peak loads.

#### Voltage regulation

Because the SVM and the zig-zag transformer enable the inverter to react very quickly under step-load conditions, the UPS has very tight voltage regulation during step loads and 100 percent phase-to-neutral (Ph-N) load imbalances.

#### Short-circuit capability

The SG Series inverter supplies 2.7 and 4.0 times (for 200 ms) the nominal current for ph-ph and ph-N/PE short-circuit respectively, ensuring the proper selectivity of the protection devices (fuses and breakers).

#### Zig-zag output transformer

The zig-zag transformer enables the UPS to run with heavily unbalanced loads while supplying full kVA output capacity at 100 percent nonlinear load.

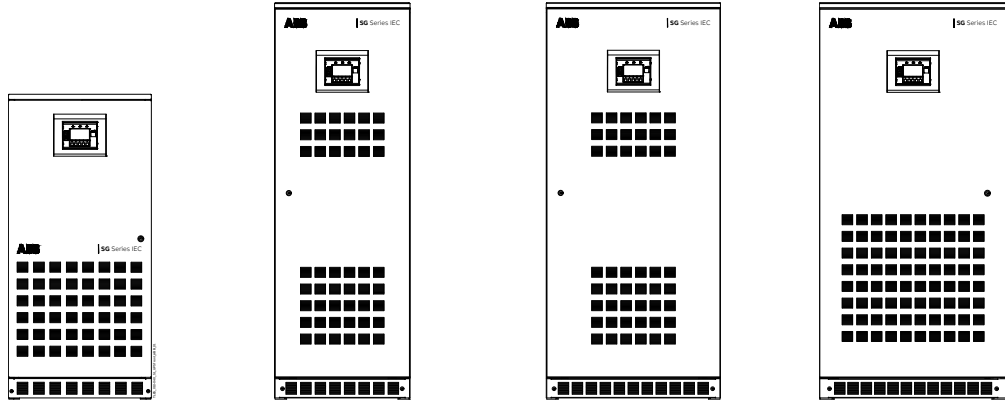
#### SG Series power capability

- No derating required to supply resistive and capacitive loads (0.9)
- Suitable for modern power supply application with unity or capacitive power factor, crest factor up to 3:1

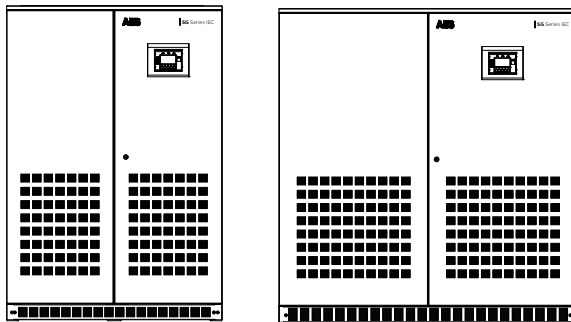


# SG Series

## Available models



Cabinet type	10 - 40 kVA	60 - 80 kVA	100 - 120 kVA	160 kVA
Dimensions w x h x d (mm)	680 x 1450 x 800	650 x 1900 x 850; 835 x 1900 x 850	835 x 1900 x 850	900 x 1900 x 850
Weight in kg (without battery)	290 - 420	550 - 630	860	1050



Cabinet type	200 - 300 kVA	400 - 500 kVA
Dimensions w x h x d (mm)	1300 x 1900 x 850	1800 x 1900 x 950
Weight in kg (without battery)	1220 - 1560	2190 - 2470

### Key features

- eBoost technology for high efficiency - up to 99 percent
- Up to 94.6 percent efficiency
- PurePulse IGBT rectifier: clean input <2 percent THDi
- Output power factor: 1.0 (10-40 kVA), 0.9 (60-600 kVA)
- True front access design
- Small footprint
- Inverter zig-zag isolation transformer
- Extremely low output voltage distortion
- Superior battery management
- Intelligent energy management integrated (IEMi)
- Backfeed protection
- Built-in maintenance bypass
- Parallelable up to six units

# SG Series

## Technical specification

<b>General data</b>						
System power range	10 – 40 kVA	60 – 80 kVA	100 – 120 kVA	160 kVA	200 – 300 kVA	400 – 500 kVA
Active power / frame	10/15/20/30/40 kW	54 / 72 kW	90 / 108 kW	144 kW	180/ 225 / 270 kW	360 / 450 kW
Output power factor	0.9 lead – 0.6 lag					
Topology	Online double conversion					
UPS type	Standalone, transformer-based					
Parallel configuration	Up to 6 units in parallel with Redundant Parallel Architecture (RPA)					
<b>Input</b>						
Nominal input voltage	3 x 380/400/415 V + N					
Voltage tolerance	340-460 V					
Input distortion THDi	<3%					
Frequency	50/60 Hz					
Frequency range	45-66 Hz					
Power factor	>0.99					
Walk-in / soft start	Yes					
<b>Output</b>						
Rated output voltage	3 x 380/400/415 V + N					
Voltage tolerance	+/-1% static, +/-3% dynamic, +/-3% unbalanced load					
Voltage distortion THDU	<2% linear load, <3% nonlinear load (EN 62040)					
Frequency	50/60 Hz					
Overload capability	150% 1 min, 125% 10 min					
Output short circuit capability	2.7*In(Ph-N) / 4*In(Ph-Ph) for 200 ms					
Crest factor	<3:1					
<b>Efficiency</b>						
Overall efficiency	Up to 92.3%	Up to 91.9%	Up to 92.1%	Up to 94.2%	Up to 94.6%	Up to 94.2%
In eco-mode (eBoost) configuration	Up to 98%	Up to 97.9%	Up to 97.9%	Up to 98.4%	Up to 98.5%	Up to 98.7%
<b>Environment</b>						
Storage temperature	UPS: -25 °C +55 °C					
Operating temperature	0-40 °C					
Humidity	Max. 95% (non-condensing)					
Altitude configuration	Up to 1000 m with no derating, at 1500 m:-2.5%/ 2000 m:-5%/ 2500 m:-7.5%/ 3000 m:-10% (EN/IEC 62040-3)					
<b>Communications</b>						
HMI	Multilingual graphic display (LCD)					
Relay contractors	6 voltage-free contacts for 27 programmable alarms					
Input signals	EPO, Gen-ON (emergency power supply ON, n/o contact), 1 auxiliary signal (settable functionality)					
Communication ports	RS232, SNMP (Modbus IP, RS232, RS485 & BacNet IP)					
<b>Electrical / Mechanical</b>						
Degree of protection	IP20					
Color	10-120 kVA RAL 9003 (white), 160-500 kVA RAL 9005 (black)					
Cable entry	Bottom (top optional)					
Back-feed protection	Built-in as standard					
Serviceability	Fully front serviceable					
Ventilation	From front to top					
Audible noise	<65 dB(A)	63 dB(A)	63 dB(A)	69 dB(A)	69 dB(A)	69 dB(A)
<b>Batteries</b>						
Type	VRLA batteries, vented lead-acid batteries, wet batteries, NiCd, flywheel					
DC floating voltage	409-436 V					
<b>Standards</b>						
Safety	IEC / EN 62040-1					
Electromagnetic compatibility (EMC)	IEC / EN 62040-2					
Performance	IEC / EN 62040-3					
Product certification	CE marking					
Manufacturing	ISO 9001					
<b>Weight, dimensions</b>						
Weight (Kg)	290-420	550-630	860	1050	1220-1560	2190-2470
Dimensions w x h x d (mm)	680x1450x800	650x1900x850	835x1900x850	900x1900x850	1300x1900x850	1800x1900x950