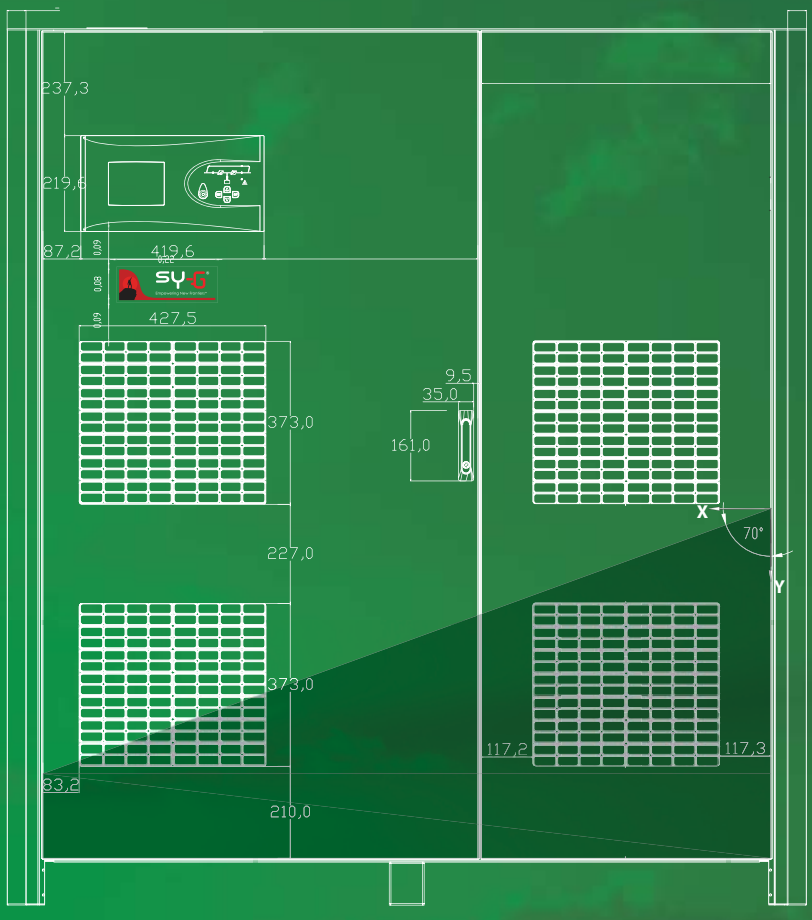
SY-G®

Empowering New Frontiers™



ON-LINE UPS
VIRTUOSO SERIES
10 KVA - 250 KVA

www.sy-g.com

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FEATURES:

- Three Level Rectifier & Inverter Technology
- Output Power Factor 1 (kVA=KW)
- On Line-Double Conversion Technology (Class VFI-SS-111)
- IGBT PWM Rectifier & Inverter Technology
- DSP Control
- High Efficiency up to 96%
- Low Input Current THD (<3%)
- High Input Power Factor (>0.99)
- Dual Input
- Optional DC/DC Charger/Booster
- Wide Input Voltage Range (Optional)
- Advanced Battery Management
- Short Circuit and Overload Protection
- Paralellable Modules up to 8 units
- 500 Real Time Event Log with Detailed Parameters
- Static & Manual Bypass Operation
- Overload and Short Circuit Protection
- Small Footprint and Easy Maintenance
- Advanced Communication Capabilities
- Perfect Generator Compatibility

BENEFITS:

- High uptime
- High efficiency with energy-saving ECO mode
- Low distortion to utility power
- Extends battery lifespan
- Operating cost savings
- Small footprint and ease of maintenance
- User-friendly and programmable
- Scalability and redundancy
- Parallel ready

Greater Power Higher Efficiency

Virtuoso Series uninterruptible power supply (UPS) with Innovative 3 Level Technology is a true on-line double conversion, three-phase UPS system that provides one of the highest-level energy efficiencies in the industry.

Three Level UPS Series

With its latest three level inverter & rectifier design, Virtuoso Series brings the newest power conversion technology and delivers efficiency up to 96% at 50-75% load operation, which is the most common operating range. This ultra-high system efficiency provides considerable cost savings in comparison to the traditional transformer-less UPS's with 93% efficiency.

High Efficiency & Low Total Cost of Ownership

Virtuoso Series consumes less energy to supply the loads thanks to its high efficiency up to 96%. High Efficiency rate provides:

• Reduced energy loss • Reduced electricity usage and air conditioning requirements • Reduction in operating cost of UPS

DSP Power Factor Corrected IGBT Rectifier

IGBT based power factor correction technology provides Input Power Factor close to 1 (≥0.99) and keeps Input Current Total Harmonic Distortion (THDi) less than 3%, that helps to avoid the disturbance.

Digital Control System

All of the control functions for Virtuoso Series UPS including power-on, start-up control, input stage power factor control, battery charging and boosting control, output stage ac voltage regulation and shutdown control, can be done by using a single DSP control board.

Low Input Current THD

(THDi) less than 3% avoids the disturbance to connected loads.

High Input Power Factor

0.99 Input power factor ensures clean and sinusoidal input current. The high input power leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.

High Output Power factor 1

Output Power factor of 1 (kVA=kW) rate provides up to 25% more active power than a traditional UPS. Suitable for modern power supply application with unit or capacitive power factor (e.g. new servers generation) without any reduction in active power from 1 leading to 1 lagging.

Dual Input Operation

Virtuoso Series can operate with either single or dual power inputs. Dual Input feature increases availability by allowing UPS to be connected to two separate power sources. In dual configuration, the rectifier is fed from utility (main source) and the static and maintenance by-pass are fed from a secondary source.

Advanced Battery Management

Virtuoso Series guarantees enhanced battery life and maximizes battery performance, life span and reliability through intelligent precision charging. Temperature Compensated Battery Charging monitors performing measurement of external and internal battery temperature and adjusting the charge current rate accordingly.

Advanced battery management provides real-time information about battery capacity and back up time, this information can be seen on LCD panel. The UPS tests the batteries at adjustable periods without switching off the system, the test periods can be set by users.

EPO (Emergency Power Off)

EPO function is designed to switch off the UPS in emergency conditions (fire, flood, etc.). The system will turn off the rectifier, inverter and will stop powering the load immediately (including the inverter and bypass) also the battery stops charging or discharging.

Static & Manual (Maintenance) Bypass

Virtuoso Series includes standard static and manual bypass. Static bypass provides safe failure to mains if the UPS is overloaded or develops a fault condition. Where EMI filters are used to help to neutralize spikes and electrical noise, the load may be routed through bypass to provide further protection.

Manual bypass function is intended only for maintenance work, this bypass supply is incorporated into the Virtuoso design. Manual bypass is used to power down the UPS without interrupting the power to the load. With this feature, it is completely safe for the technical personnel to work on the faulty UPS.

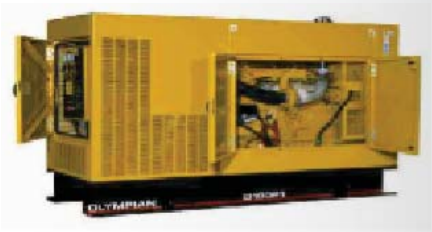
Auto Restart

When the main and bypass sources fail, the UPS draws power from the battery system to supply the load until the batteries are depleted. When UPS will reach its end of discharge, it will shut down. The UPS will automatically restart and enable output power:

- After utility power is restored
- After the "Auto Start Delay Time" is expired (the default delay is 5 minutes).

Perfect Generator Compatibility

Virtuoso Series is perfectly compatible with diverse sources, especially with generators. When generator power is used, thanks to its robust IGBT rectifier, it ensures clean, uninterrupted power to protected equipment. With high input power, factor performance of Virtuoso Series it is enough to choose generator with power only 20% higher rated than the UPS. Virtuoso Series has the ability to adjust power walk-in from 5 to 15 seconds, along with reduced input current distortion.



Reverse Energy Tolerance for Regenerative Loads

Virtuoso Series can be used with regenerative loads, such as synchronous motors. The regenerative loads pump the energy back to mains, traditional UPS systems burn this feedback energy and this causes lower efficiency. Virtuoso Series UPS with IGBT rectifier are able to absorb intermittent load generated power. Additionally, this reverse power tolerance permits execution of important system operations like closed transition transfers of the UPS load directly to an engine generator source.

Flexibility

Virtuoso Series is compatible with a wide range of applications. Flexibility achieved through many choices, including type of battery, single or multi-unit configuration, accessories and options.

- Frequency converter mode
- Optional temperature sensor for external battery cabinets (to assist the recharge voltage compensation)
- Additional battery chargers to optimize charge time
- Separated bypass
- Optional backfeed protection
- Isolation transformers to vary neutral connectivity in the event of separate power sources or for galvanic isolation between input and output
- Battery cabinets of different sizes and capacities, for providing extended runtimes.

Advances User Interface

Virtuoso Series has large and user-friendly 320 x 240 touch panel LCD display that provides operating information in four different languages. Thanks to this advanced touch panel LCD display, all parameters of working device can be monitored and controlled. UPS is capable of recording up to 500 events.

Parallel Operation

Virtuoso Series features easy and simple scalability and redundancy. It is ready to grow with your business demands. Different power rated units and any number of UPS can be connected in parallel.

Power Increase: The UPS's can be connected in parallel to increase total capacity of the system. If one of the devices goes out of order, the critical loads are transferred to by-pass.

Parallel Operation Features:

- Internal standard parallel microprocessor for all models.
- Up to 8 units parallelable
- Parallel connection with ring cable
- Optional Loop BUS connection
- Autosensing disconnected parallel cable
- Equal current share with DSP control
- Easy power upgrade without any interruption
- All parallel systems can be controlled from the front panel of one unit
- Full synchronization of parallel units
- Isolated parallel operation card
- Static by-pass for all units

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MODELS	SA3P10LML	SA3P15LML	SA3P20LML	SA3P30LML	SA3P40LML	SA3P50LML	SA3P60LML	SA3P80LML	SA3P100LML	SA3P125LML	SA3P150LML	SA3P200LML	SA3P250LML
Phase	Three Phase In / Three Phase Out												
Capacity	10KVA/10KW	15 KVA/15KW	20KVA/20KW	30KVA/30KW	40KVA/40KW	50KVA/50KW	60KVA/60KW	80KVA/80KW	100KVA/100KW	125KVA/125KW	125KVA/125KW	200KVA/200KW	250KVA/250KW
INPUT													
Input Nominal Range	120/208 VAC; 3P+N+G												
Input Voltage Range	-15% + 18% Optional -37% +22%												
Input Power Factor	At Full Load ≥ 0.99												
Input Frequency Range	45 - 65 Hz (Selectable)												
Rectifier	Three Level IGBT Technology												
Total Harmonic Distortion (THDi)	<3%												
OUTPUT													
Output Voltage Range	120 / 208 VAC; 127/ 220 VAC 3P+N+G ±1%												
Output Frequency Range	50/60 Hz ± 0.5% Synchronous with the Network												
	50/60 Hz ± 0.2% Battery Mode												
Total Harmonic Distortion (THDv)	Linear Load < 2% ; Non-Linear Load < 5%												
Crest Factor (CF)	3:1												
Efficiency	96%, Eco Mode 98%												
Inverter	Three Level IGBT Technology, Pure Sine Wave												
Overload Capacity	At 125% Load 10min; at 150% Load 1min												
Recovery	0% - 100% - 0% Load, Maximum Output Tolerance 5%, 1% Back to Band <40ms												
BATTERY													
Quantity (12V DC VRLA)	2X17												
Type of battery	2X34X9AH	External, Maintenance free sealed batteries											
COMMUNICATION & MANAGEMENT													
Communication Ports	RS-232 (standard), SNMP (optional), RS-485 (optional)												
Communication Cards	SNMP (Optional) , ModBus (Optional)												
Protocols	SEC, TELNET												
Compatibility	Supports Windows® 2000/2003/XP/Vista/2008, Windows®7, Linux, Unix, and MAC												
Display	320 x 240 Touch Panel LCD Graphic Display												
Dry Contacts	Optional												
GENERAL													
Dimensions (WxDxH) (mm)	490x805x1190			763x771x1555		810x820x1705		830x870x1800			1480x850x1790		
Net Weight (kg)	107	118	125	260	270	350	355	450	485	650	700	850	1350
Running Temperature	For UPS 0°C - 40°C For Battery 0°C - 25°C												
Storage Temperature	For UPS 15°C - 45°C For Batteries -10°C - 60°C												
Humidity	0-95%												
Protection Class	IP20												
Chassis	Anti-Static Paint Protection												
Alarms	500 Event Log												
Parallel Operation	Parallel Power Increase up to 8pcs.												
EPO (Emergency Power Off)	Standard												
Isolation Transformer	Optional												
STANDARDS & CERTIFICATIONS													
Quality	ISO 9001 ; ISO 14001 ; ISO 18001												
Compliance	EN62040 -3 (VFI-SS-111); EN62040 - 2 ; EN62040 -1 ; EN60950 ; CE												

Product specifications are subject to change without further notice.

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Distributed By:

100 SE 2nd St., Suite 2600. Miami, FL 33131. USA | + (1-786) 871-7360 | www.sy-g.com