ACTIVEPOWER

CleanSource® UPS
Multi-Module Systems

Predictable, continuous and efficient power systems engineered for organizations with zero tolerance for downtime.

intelligently EFFICIENT

inherently RELIABLE

economically GREEN

Active Power CleanSource®

Systems & Components

Turnkey Systems

You can rely on Active Power for a complete critical power protection system, including a UPS designed and built to your specifications with switchgear incorporated into a streamlined, space-saving package. The switchgear is connected internally to the UPS, providing an attractive, space-efficient solution.

GenSTART™

We can help you source and integrate any critical power system component from engine systems to switchgear and everything in between, including Active Power's GenSTART starting module.

Service & Monitoring

Active Power provides expert assessment, implementation, maintenance and support during every phase of your critical power system deployment and operation. PowerService plans, ranging from basic recommended scheduled maintenance and support to priority dispatch and on-site parts, provide complete lifecycle support for your Active Power solution.

Active Power also provides a variety of system visibility and management tools to improve your awareness of power-related events and ultimately increase your power system reliability.

Active Power's proprietary CleanSource View™ (CSView) monitoring and control software enables real-time system visibility from virtually anywhere.

intelligently EFFICIENT

COMPACT FOOTPRINT

Active Power systems protect up to twice the power in half the space. The flywheel takes up less than half the footprint of a legacy battery-based system leaving additional room for revenue-generating equipment.

LOWER TOTAL COST OF OWNERSHIP

Up to 98% efficiency and simple and predictable operation - only available in flywheel energy storage systems - provides for a low maintenance schedule. You get a life-cycle cost without expensive surprises.

inherently RELIABLE

FIELD PROVEN

With more than 2,600 flywheels operating in systems deployed on six continents in some of the world's harshest conditions, CleanSource UPS has been proven over and over again.

FAULT TOLERANT UPS

The IGBT based UPS architecture provides for a rugged and highly fault tolerant system that stands up to the toughest load and utility grid conditions.

MODULAR AND REDUNDANT

CleanSource UPS is inherently redundant and modular. The systems are expandable to multi-megawatt configurations with paralleling for either capacity or integrated redundancy.

economically GREEN

CleanSource UPS is the most energy efficient UPS in the world - both environmentally friendly and delivered to your economic advantage. When you lose less energy you use less energy, saving money on power bills and reducing your carbon footprint.

FACTORY INSTALLED EQUIPMENT

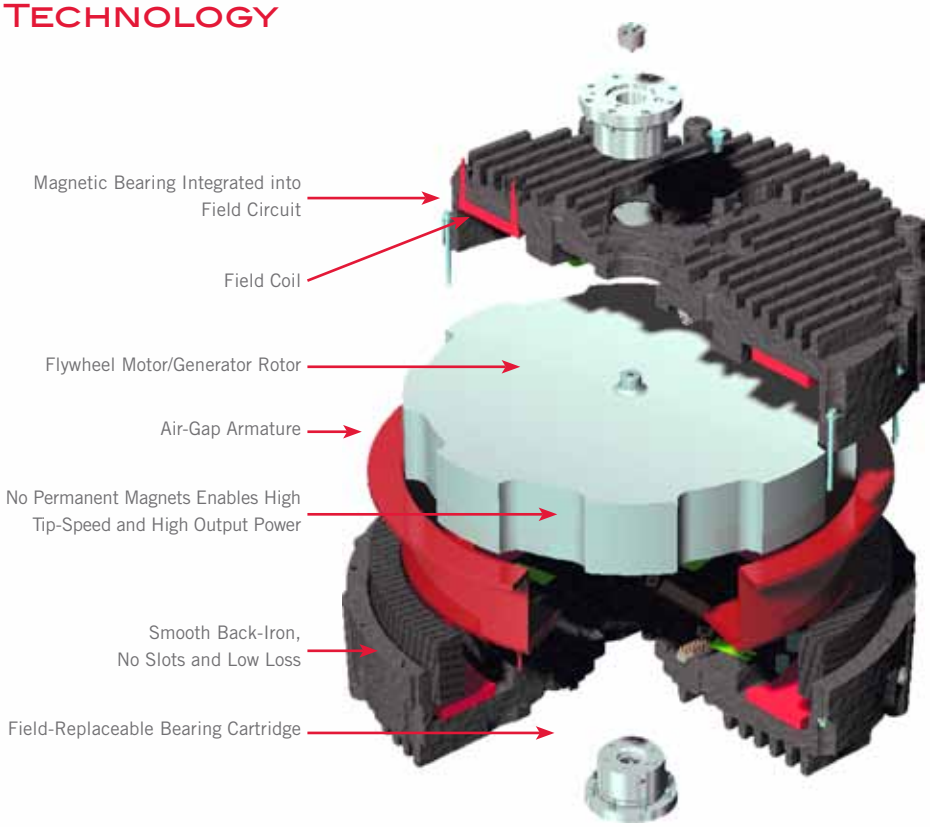
Standard

- CSView™ – advanced real-time monitoring
- 10" full color touch-screen operator interface
- IGBT-based UPS technology
- Superior power conditioning
- Flywheel energy storage
- High-speed voltage regulation
- High overload capacity
- Static bypass circuit
- Redundant cooling fans
- Redundant control power
- Power factor correction
- Intelligent self-diagnostics
- Serial connections
- Back-feed protection
- Harmonic cancellation

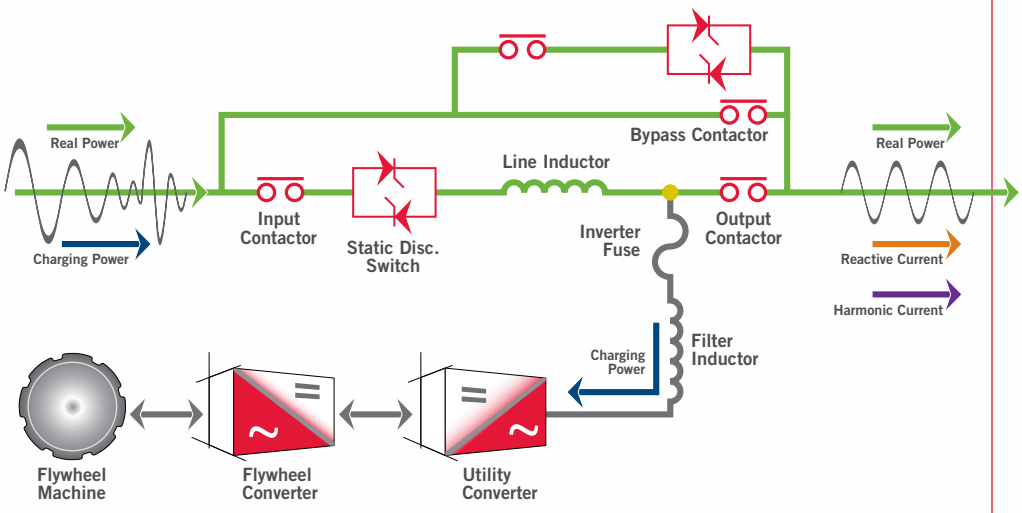
Optional

- Remote SNMP/MODBUS monitoring capability
- Remote status panel
- Seismic provisions
- Separate bypass input
- Redundant flywheel and UPS
- External synchronization input
- GenSTART™ Generator Start Power
- Field expandable

CleanSource Flywheel Motor-Generator Technology



Parallel Online Architecture



System Features

- *Rugged, on-line and fault-tolerant UPS*
- *Most efficient UPS architecture*
- *Handles multi-load characteristics*
- *Cost-effective lifecycle cost*
- *Modular, scalable and redundant architecture*
- *Field expandable*
- *Predictable flywheel energy storage*
- *20-year design life*
- *Low service and maintenance*
- *Smallest available footprint*
- *Rapid recharge time*
- *Predictive failure analysis*
- *10" color LCD touch-screen display*
- *Wide operating temperature range*
- *Remote and local monitoring*
- *Fault compartmentalization*
- *Simple and cost-effective installation*
- *Multi-vendor generator and switchgear compatibility*
- *Field-proven reliability*
- *No hazardous waste material*

Standard Ride-Through Times

100%	14 seconds
75%	19 seconds
50%	28 seconds
25%	52 seconds

CleanSource® UPS Product Line

Multi-Module Systems 600 G-Frame: Modular and expandable UPS optimized for applications up to 600 kVA. Features internal maintenance bypass panel for maximum space and cost efficiency.

Multi-Module Systems 1200 Z-Frame: Modular and expandable UPS supporting up to 1200 kVA in a single system. Full paralleling support for larger applications.

MODEL	UPS 300G	UPS 600G	UPS 300Z	UPS 600Z	UPS 900Z	UPS 1200Z
RATING						
Maximum kVA	300	600	300	600	900	1200
Maximum kW	240	480	240	480	720	960
INPUT						
Voltage[1]	480 VAC 3-phase, 3-wire plus ground (4-wire optional)		480 VAC 3-phase, 3-wire plus ground (4-wire optional)			
Voltage Range	+10% / -15% (programmable)		+10% / -15% (programmable)			
Frequency	60 Hz +/- 10% maximum (programmable) +/- 3% (default)		60 Hz +/- 10% maximum (programmable) +/- 3% (default)			
Power Factor	0.99 at rated load and nominal voltage		0.99 at rated load and nominal voltage			
Harmonic Current Distortion						
Linear Load	<3% at 100% load		<3% at 100% load			
Non-Linear Load	<8% at 100% load		<8% at 100% load			
Current - Nominal (480 VAC)	302	599	302	599	898	1,198
Current - Max. Continuous	400	800	400	800	1,200	1,600
Current - Max. Non-Continuous	420	840	420	840	1,260	1,680
Surge Withstand	Meets IEEE 587/ANSI C62.41		Meets IEEE 587/ANSI C62.41			
Walk-In	1 to 15 seconds (programmable)		1 to 15 seconds (programmable)			
OUTPUT						
Voltage[1]	480 VAC 3-phase, 3-wire plus ground		480 VAC 3-phase, 3-wire plus ground			
Voltage regulation						
Steady state	+/-1% for +/-10% input		+/-1% for +/-10% input			
Flywheel mode	+/-1% steady state		+/-1% steady state			
Transient	+/-1% within 50 mSec for 100% load step		+/-1% within 50 mSec for 100% load step			
Voltage distortion[2]	<3% linear loads and <5% for 100% non-linear loads		<3% linear loads and <5% for 100% non-linear loads			
Frequency	60Hz (mains synchronized) (normal operation +/- 0.2% free running)		60Hz (mains synchronized) (normal operation +/- 0.2% free running)			
Slew Rate	Adjustable from 0.2Hz/second to 3.0Hz/second		Adjustable from 0.2Hz/second to 3.0Hz/second			
Current - Nominal (480 VAC)	361	723	361	723	1,084	1,445
Overload Capability-Mains Operation	Continuous Up to 105% / 10 Min 125% / 2 Min 150% / 30 Sec 200% / 10 mSec >200%		Continuous Up to 105% / 10 Min 125% / 2 Min 150% / 30 Sec 200% / 10 mSec >200%			
UPS Efficiency[4]	97%	98%	97%	98%		
Environmental						
Audible Noise	<72 dBA at 1 meter		<72 dBA at 1 meter		<75 dBA at 1 meter	
Temperature						
Operating	32 to 104° F (0 to 40° C)		32 to 104° F (0 to 40° C)			
Storage	-13 to 158° F (-25 to 70° C)		-13 to 158° F (-25 to 70° C)			
Humidity	5% to 95% (non-condensing)		5% to 95% (non-condensing)			
Altitude[3]	Up to 3,000 feet (914 meter)		Up to 3,000 feet (914 meter)			
Emissions and Immunity	FCC Class A, Subpart J of Part 15/ EN 62040-2		FCC Class A, Subpart J of Part 15/ EN 62040-2			
Heat Rejection- Online[5]						
kW	8.7	12.3	8.7	12.3	18.4	24.6
BTU/Hr	29,612	41,983	29,612	41,983	62,975	83,967
PHYSICAL DATA						
Height	96.0 in 2,438 mm	96.0 in 2,438 mm	96.0 in 2,438 mm	96.0 in 2,438 mm	96.0 in 2,438 mm	96.0 in 2,438 mm
Width	127.0 in 3,226 mm	170.0 in 4,318 mm	127.0 in 3,226 mm	170.0 in 4,318 mm	213.0 in 5,410 mm	256.0 in 6,502 mm
Depth	34.0 in 865 mm	34.0 in 865 mm	34.0 in 865 mm	34.0 in 865 mm	34.0 in 865 mm	34.0 in 865 mm
Weight	6,375 lbs 2,892 kg	10,875 lbs 4,933 kg	6,750 lbs 3,063 kg	11,250 lbs 5,103 kg	15,750 lbs 7,144 kg	20,250 lbs 9,185 kg
Cable Entry	Top or Bottom		Top or Bottom			
Safety	UL 1778 Listed CUL CAN/CSA 22.2 No. 107.1 Listed		UL 1778 Listed CUL CAN/CSA 22.2 No. 107.1 Listed			

[1] Optional 4-wire
[2] EN 62040-3
[3] Derate operating temperature for higher elevations
[4] DC energy storage offline
[5] DC energy storage online

ACTIVE POWER

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