



CLEANSOURCE® PLUS SMS SINGLE MODULE SYSTEM UPS

250kW | 400/415V

FLYWHEEL TECHNOLOGY



CLEANSOURCE® PLUS SMS

SINGLE MODULE SYSTEM UPS

Overview

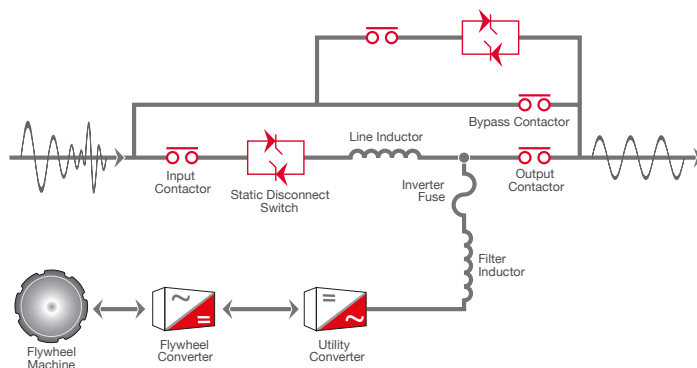
Active Power's Single Module System Flywheel UPS is the perfect combination of total cost of ownership, reliability and sustainability for any mission critical application.

Designed with highly predictable, battery-free energy storage, the Single Module System offers unmatched total cost of ownership for high availability organizations.

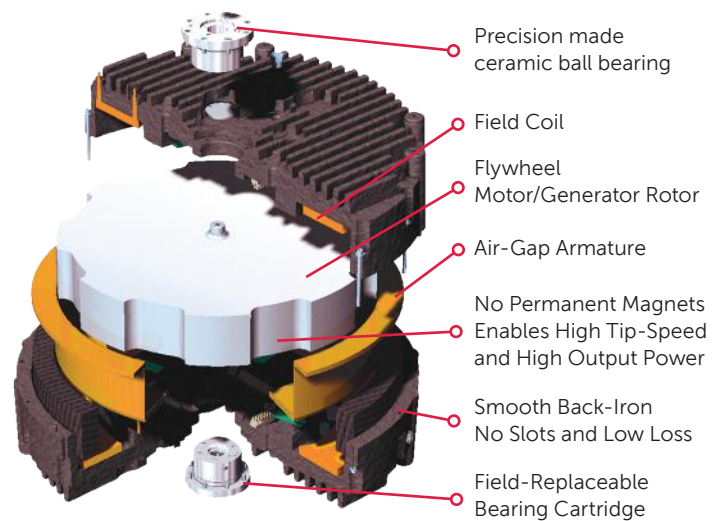
Parallel Online Architecture

The CLEANSOURCE® PLUS SMS is based on Active Power's Parallel Online Architecture which provides excellent isolation between input and output, while delivering Class 1 voltage regulation and dynamically cancelling effects of non-linear load harmonics.

This topology continuously provides online power protection to your data center, creating a clean sinusoidal output waveform and protecting critical operations against all nine IEEE power disturbances in a power dense, reliable, and energy-efficient package.



FLYWHEEL TECHNOLOGY



- ▶ STORES 6.2 MJ OF ENERGY
- ▶ UP TO 2 MINS. OF RUN-TIME (LOAD DEPENDENT)
- ▶ WIDE OPERATING TEMPERATURE RANGE FROM 32°F TO 104°F
- ▶ HIGH DENSITY, HIGH EFFICIENCY DESIGN

KEY BENEFITS AND FEATURES

- UP TO 98% EFFICIENT
- HALF THE SPACE OF LEGACY BATTERY-BASED UPS
- PARALLEL UP TO 8 SYSTEMS
- REDUNDANT FANS AND CONTROL POWER UNITS
- LOWER INSTALLATION COSTS
- LESS HEAT REJECTION
- LOWER COOLING REQUIREMENTS
- LOWER MAINTENANCE AND SERVICE
- COST-EFFECTIVE INSTALLATION
- COLOR LCD TOUCH SCREEN DISPLAY
- REMOTE MONITORING CAPABILITY
- BUILT-IN POWER FACTOR CORRECTION
- GENERATOR COMPATIBILITY
- DUAL INPUT (OPTIONAL)
- INTEGRATED MAINTENANCE BYPASS OPTION
- SEISMIC PROVISIONS – CONSULT FACTORY
- 20-YEAR DESIGN LIFE

40%

TCO SAVINGS

PERMANENT ENERGY STORAGE
UP TO 98% ENERGY-EFFICIENT
LESS EXPENSIVE TO INSTALL
AND COMMISSION

12x

LESS LIKELY TO FAIL

MOST RELIABLE ENERGY
STORAGE SYSTEM
MINIMIZE RISK AND DISRUPTION
FROM MAINTENANCE
AND REPLACEMENT

9x

LESS CARBON EMISSIONS

OVER 40% LESS CARBON
EMISSIONS OVER 20 YEARS TO
HELP YOU ACHIEVE YOUR
SUSTAINABILITY GOALS

CLEANSOURCE® PLUS SMS combines a competitive initial cost with lower ongoing operational expense – up to 40% lower than traditional UPS over 20 years. The result is a dramatic TCO benefit for your application, with net savings.

► SUPERIOR ENERGY EFFICIENCY

Over 96% efficient at 40% load.

► REDUCED COOLING NEEDS

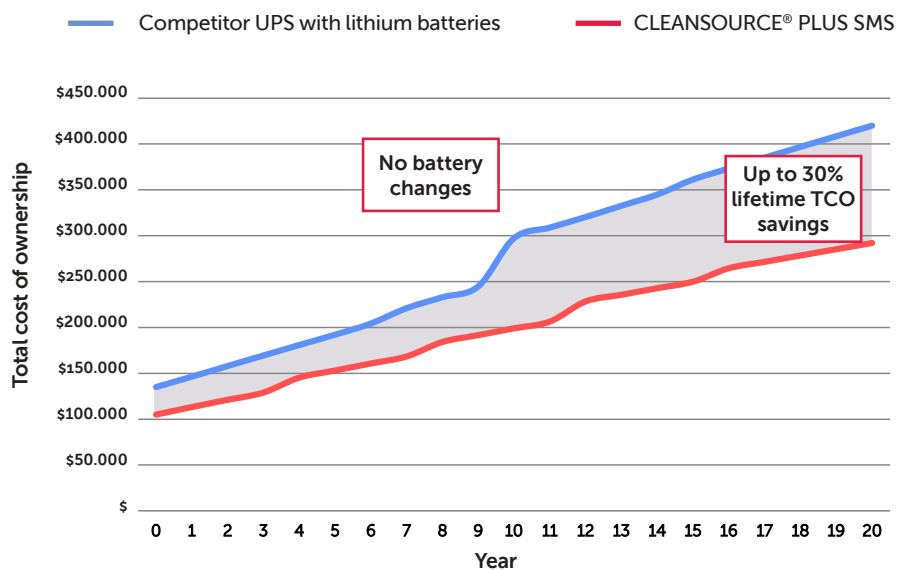
No need for dedicated cooling for batteries

► LOWER MAINTENANCE REQUIREMENTS

Routine annual check-up and bearing change every fourth year.

► NO BATTERY CHANGES

Integrated flywheel with 20-year life.



300kW | 480V

PRODUCT SPECIFICATIONS

RATING				
Maximum kVA		275		
Maximum kW		250		
INPUT				
Voltage ¹		400/415 VAC 3-phase, 4-wire plus ground		
Voltage Range		+10% / -15% (programmable)		
Frequency		60 Hz +/- 10% maximum (programmable) +/- 3% (default)		
Power Factor		0.99 at rated load and nominal voltage		
Harmonic Current Distortion	Linear load	<2% at 100% load		
	Non-linear ³	<8% at 100% load		
Current – Nominal (400 VAC)		375A		
Current – Nominal (415 VAC)		362A		
Current – Max. Continuous		450A		
Current – Max. Non Continuous		470A		
Surge Withstand		Meets IEEE 587/ANSI C62.41		
Walk-in		1 to 15 seconds (programmable)		
Internal Back Feed Protection		Yes		
OUTPUT				
Voltage		400/415 VAC 3-phase, 4-wire plus ground		
Voltage Regulation	Steady State	+/-1% for +/-10% input		
	Flywheel Mode	+/-1% steady state		
	Transient	+/-1% within 50 mSec for 100% load step		
Voltage Distortion ³		<1% linear loads and <5% for 100% non-linear loads		
Inverter		PWM with IGBT switching		
Frequency		60Hz (mains synchronized) (normal operation +/- 0.2% free running)		
Load Power Factor Range		0.7 lagging /0.9 leading without derating		
Slew Rate		Adjustable from 0.2Hz/second to 3.0Hz/second		
Current – Nominal (400 VAC)		397A		
Current – Nominal (415 VAC)		383A		
Overload Capability-Mains Operation		Cont:	105%	
		10 min:	<110%	
		5 min:	<125%	
		1 min:	<150%	
		10s:	<200%	
		Immediate:	>200%	
UPS Load	25%	50%	75%	100%
Efficiency – Energy Storage Online	92.8%	96.1%	97.1%	97.5%

ENERGY STORAGE		
Type	Integrated Steel Flywheel spinning at 10,000RPM	
Flywheel Run Time (% Load)	100%:	24.5s
	75%:	32s
	50%:	47s
	25%:	84s
Flywheel Recharge Time	<3 min (nominal) at 65kW	
GENERAL DATA		
Source Input	Single or Dual	
Parallel Capability	Yes, up to 8 systems	
Internal Static Bypass	Included	
Display	10-inch Color Touch Screen Graphical Display	
Withstand Capability ²	65kA	
Remote Monitoring	Yes (optional)	
External Customer Contacts	8 Input and 8 Outputs (programmable)	
Internal Maintenance Bypass	Yes (optional)	
ENVIRONMENTAL		
Audible Noise	<75 dBA at 1 meter	
Temperature	Operating	32 to 104° F (0 to 40°C)
Temperature	Storage	-13 to 158° F (-25 to 70°C)
Humidity	5% to 95% (non-condensing)	
Altitude	Up to 3,000ft (914m) 1.2°C derating for every 1,000ft above 3,000ft	
Emissions and Immunity	FCC Part 15 Class A, EN 62040-2	
Heat Rejection – Online	6.4kW/21,851BTU/hr	
PHYSICAL DATA		
Height	78.0in/1,981mm	
Width	58.6in/1,488mm	
Depth	34.1in/865mm	
Weight	4,598.8lbs/2,086kg	
Cable Entry	Top or Bottom	
SAFETY		
UL/cUL 1778 and CAN/CSA 22.2 No.107.1 Listed		

¹ From grounded WYE source, 3 wire optional

² Design per UL891

³ EN 62040-3



Active Power Inc. 2128 West Braker Lane, Austin, TX 78758

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