



CLEANSOURCE® PLUS SMS SINGLE MODULAR UPS

60Hz | 480V | 333kW
FLYWHEEL TECHNOLOGY



CLEANSOURCE® PLUS SMS

SINGLE MODULAR UPS

Overview

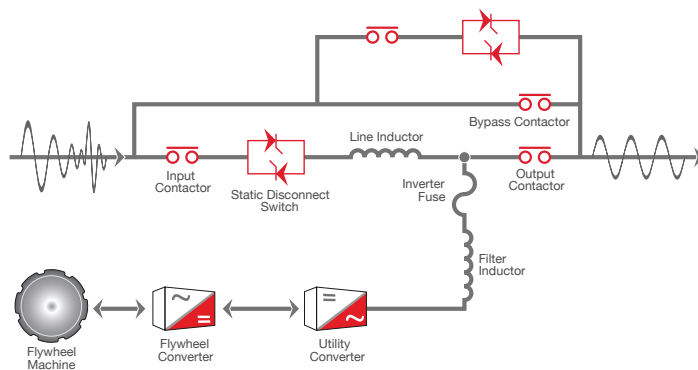
Active Power's Single Module System Flywheel UPS is the perfect combination of total cost of ownership, reliability and sustainability for any mission critical application.

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

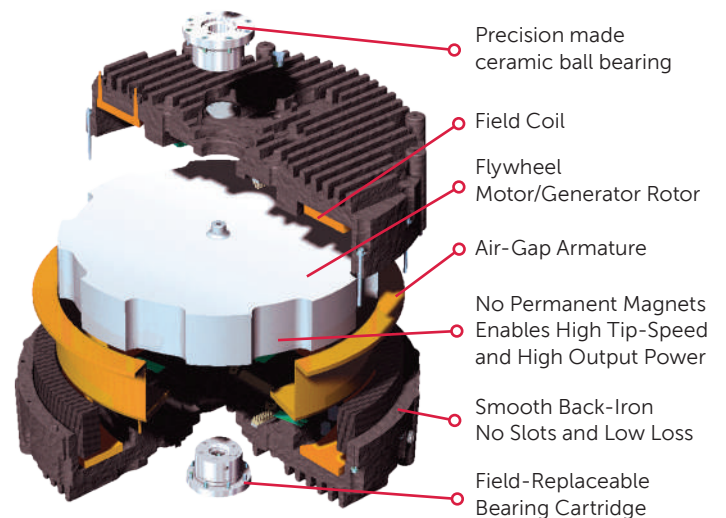
Parallel Online Architecture

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 9 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

40%

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

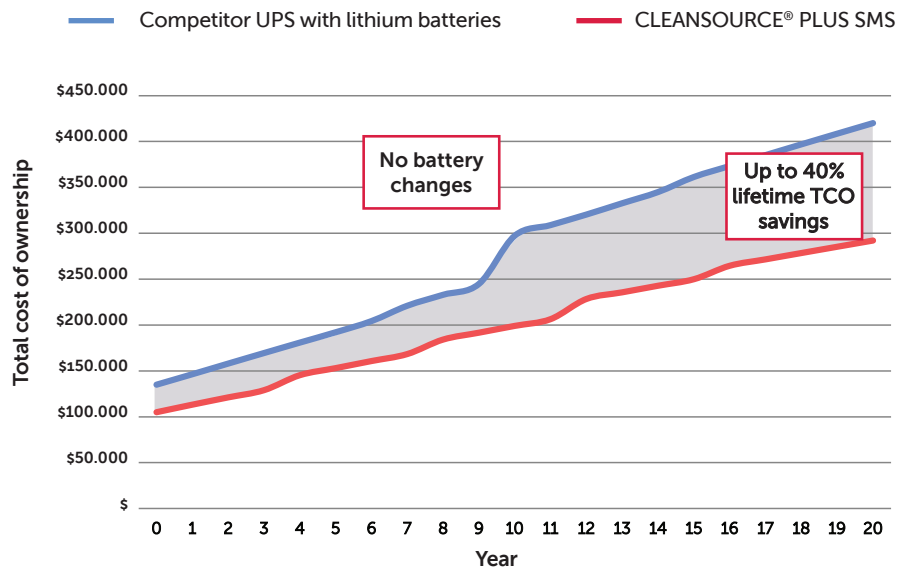
No need for dedicated cooling for batteries

► LOWER MAINTENANCE REQUIREMENTS

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

► NO BATTERY CHANGES

Integrated flywheel with 20-year life.



60Hz | 333kW | 480V

PRODUCT SPECIFICATIONS

RATING				
Maximum kVA	370			
Maximum kW	333			
INPUT				
Voltage ¹	480 VAC 3-phase, 3-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 (480 VAC)	413A			
Current – Max. Continuous	500A			
Current – Max. Non Continuous	525A			
Surge Withstand	Meets IEEE 587/ANSI C62.41			
Walk-in	1 to 15 seconds (programmable)			
Internal Back Feed Protection	Yes			
OUTPUT				
Voltage	480 VAC 3-phase, 3-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)			
Slew Rate	Adjustable from 0.2Hz/second to 3.0Hz/second			
Current – Nominal (480 VAC)	445A			
Overload Capability-Mains Operation	Cont:	105%		
	10 min:	<110%		
	5 min:	<125%		
	1 min:	<150%		
	10s:	<200%		
Immediate:	>200%			
UPS Load Efficiency – Energy Storage Online	25% 95.7%	50% 97.4%	75% 98%	100% 98.1%

ENERGY STORAGE		
Type	Integrated Steel Flywheel spinning at 10,000RPM	
Flywheel Run Time (% Load)	100%:	18s
	75%:	24s
	50%:	35s
	25%:	62s
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)
	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	5.8kW/19802BTU/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, 4 wire optional

² Design per UL891

³ EN 62040-3



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