



## CLEANSOURCE® PLUS SMS SINGLE MODULAR UPS

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60Hz | 400/415V | 250kW  
FLYWHEEL TECHNOLOGY



# CLEANSOURCE® PLUS SMS

## SINGLE MODULAR UPS

### Overview

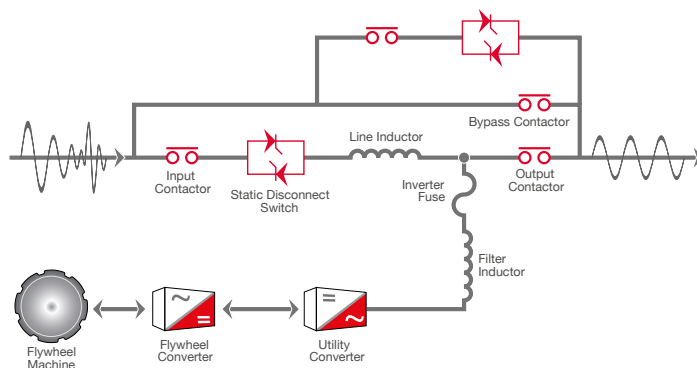
Active Power's Single Module System Flywheel UPS is the perfect combination of total cost of ownership, reliability and sustainability for any mission critical application.

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

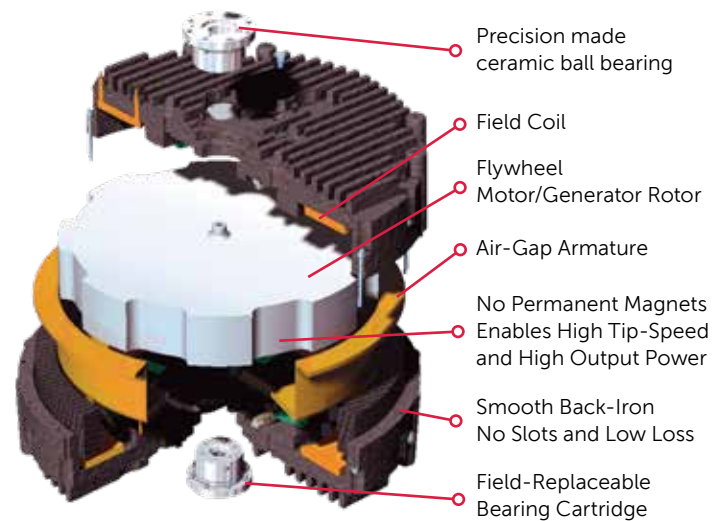
### Parallel Online Architecture

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 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

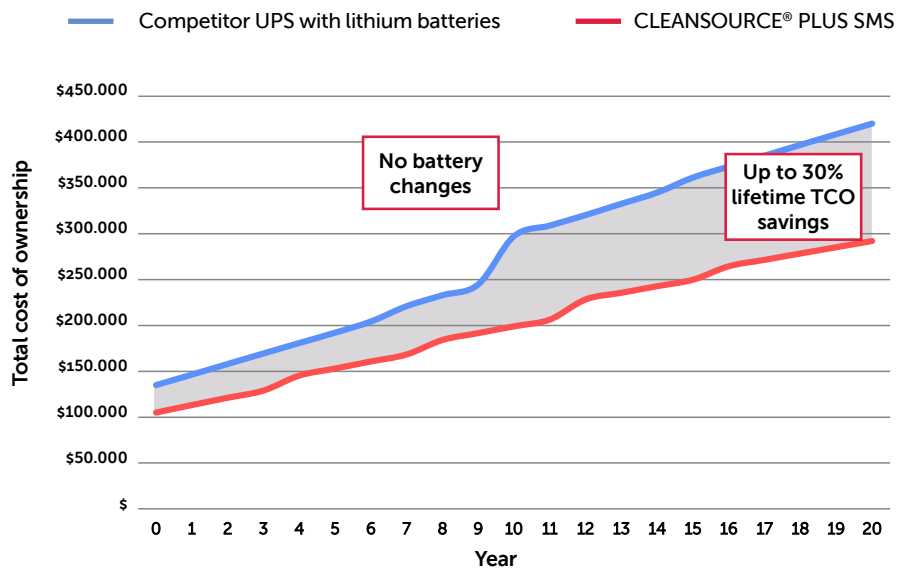
No need for dedicated cooling for batteries

### ► LOWER MAINTENANCE REQUIREMENTS

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

### ► NO BATTERY CHANGES

Integrated flywheel with 20-year life.



60Hz | 300kW | 480V

# PRODUCT SPECIFICATIONS

RATING				
Maximum kVA	275			
Maximum kW	250			
INPUT				
Voltage <sup>1</sup>	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 <sup>3</sup>	<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 <sup>3</sup>	<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 Efficiency – Energy Storage Online	25%	50%	75%	100%
	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 <sup>2</sup>	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		

<sup>1</sup> From grounded WYE source, 3 wire optional

<sup>2</sup> Design per UL891

<sup>3</sup> EN 62040-3



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