



CLEANSOURCE® PLUS SMS MODULAR UPS SYSTEMS

50Hz | 300kW | 380/400/415V
FLYWHEEL TECHNOLOGY



CLEANSOURCE® PLUS SMS SINGLE MODULAR UPS

Overview

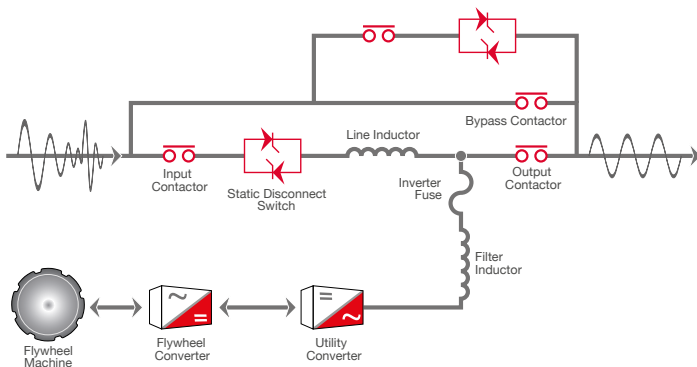
Active Power's Single Module System Flywheel UPS is the perfect combination of total cost of ownership, reliability and sustainability for any mission critical application.

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

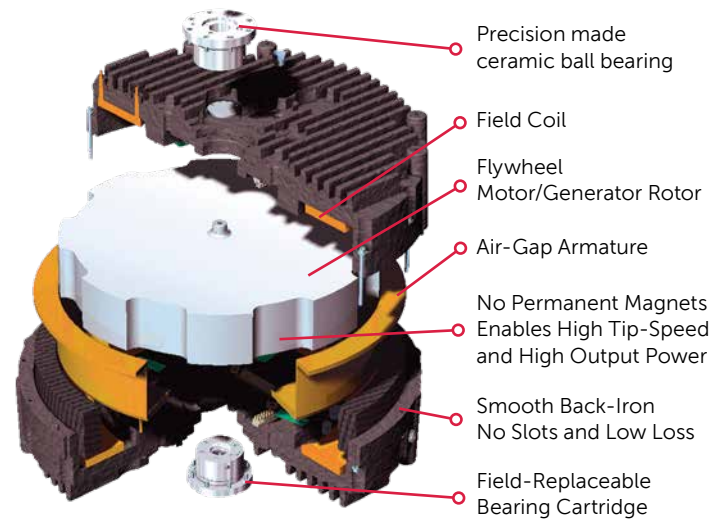
Parallel Online Architecture

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 0°C TO 40°C
- ▶ 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
- ⦿ COLOUR 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
- ⦿ GENSTART OPTION

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

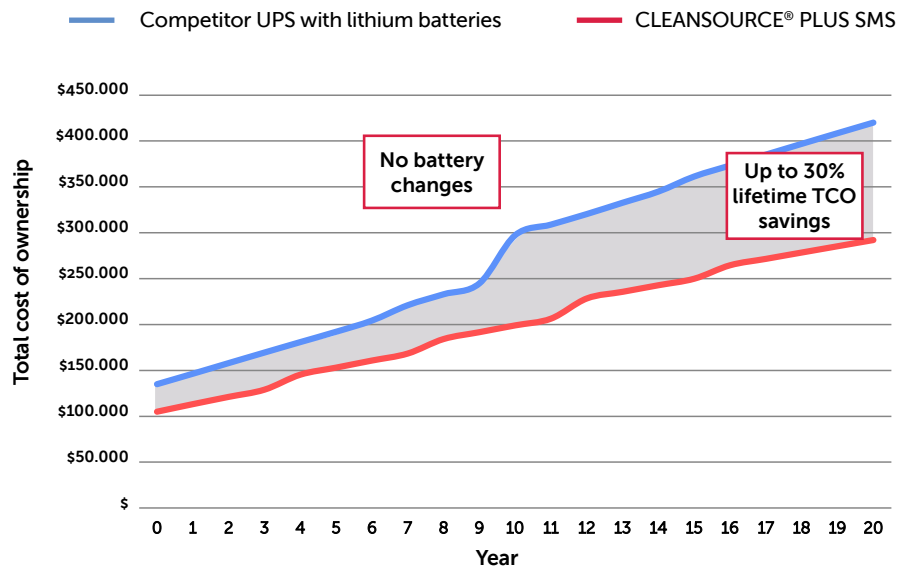
No need for dedicated cooling for batteries

► LOWER MAINTENANCE REQUIREMENTS

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

► NO BATTERY CHANGES

Integrated flywheel with 20-year life.



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PRODUCT SPECIFICATIONS

RATING				
Maximum kVA	333			
Maximum kW	300			
INPUT				
Voltage ¹	380/400/415V VAC 3-phase, 4-wire plus ground			
Voltage Range ²	+10% / -15% at 400/415V (programmable)			
Frequency ³	50 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 ⁴	<8% at 100% load		
Current – Nominal (380 VAC)	472A			
Current – Nominal (400 VAC)	449A			
Current – Nominal (415 VAC)	432A			
Current – Max. Continuous	530A			
Current – Max. Non Continuous	560A			
Surge Withstand	Meets IEEE 587/ANSI C62.41			
Walk-in	1 to 15 seconds (programmable)			
Internal Back Feed Protection	Yes			
OUTPUT				
Voltage	380/400/415 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 ⁴	<1% linear loads and <5% for 100% non-linear loads			
Inverter	PWM with IGBT switching			
Frequency	50Hz (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 (380 VAC)	506A			
Current – Nominal (400 VAC)	481A			
Current – Nominal (415 VAC)	464A			
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	93.6%	96.2%	96.7%	97.6%

ENERGY STORAGE		
Type	Integrated Steel Flywheel spinning at 10,000RPM	
Flywheel Run Time (% Load)	100%:	20s
	75%:	27s
	50%:	39s
	25%:	73s
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 Colour Touch Screen Graphical Display	
Withstand Capability	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	EN 62040-2	
Heat Rejection – Online	7.4 kW / 25,265BTU/hr	
PHYSICAL DATA		
Height	78.0in/1,981mm	
Width	58.6in/1,488mm	
Depth	34.1in/865mm	
Weight	4,799,4lbs/2,177kg	
Cable Entry	Top or Bottom	
SAFETY		
EN 62040-1		

¹ From grounded WYE source

² +/-10% at 380VAC

³ 60Hz available

⁴ EN 62040-3



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