



CLEANSOURCE® PLUS SMS MODULAR UPS SYSTEMS

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



CLEANSOURCE® PLUS SMS SINGLE MODULAR UPS

Overview

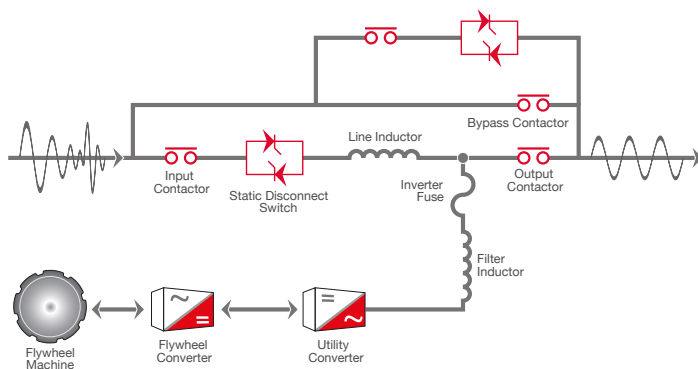
Active Power's Single Module System Flywheel UPS is the perfect combination of total cost of ownership, reliability and sustainability for any mission critical application.

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

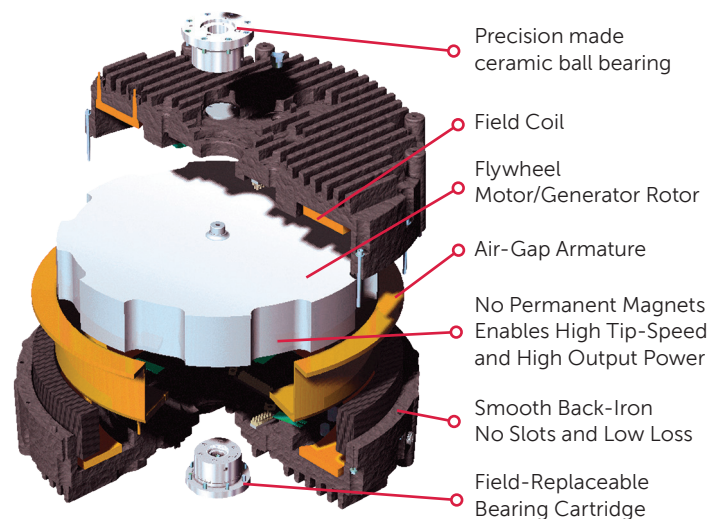
Parallel Online Architecture

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 facility, 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

MINIMISE 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

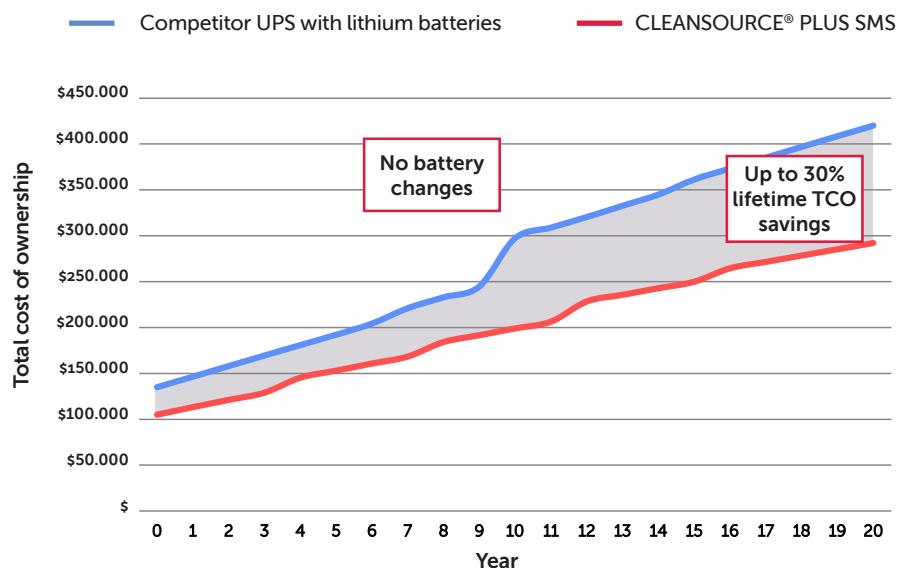
No need for dedicated cooling for batteries

► LOWER MAINTENANCE REQUIREMENTS

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

► NO BATTERY CHANGES

Integrated flywheel with 20-year life.



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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%
Efficiency - energy storage online		95.2%	97.3%	97.9%
				100%
				98.1%

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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