



CLEANSOURCE® PLUS SMS SINGLE MODULAR UPS

60Hz | 300kW | 480V
FLYWHEEL TECHNOLOGY



CLEANSOURCE® PLUS SMS

SINGLE MODULAR UPS

Overview

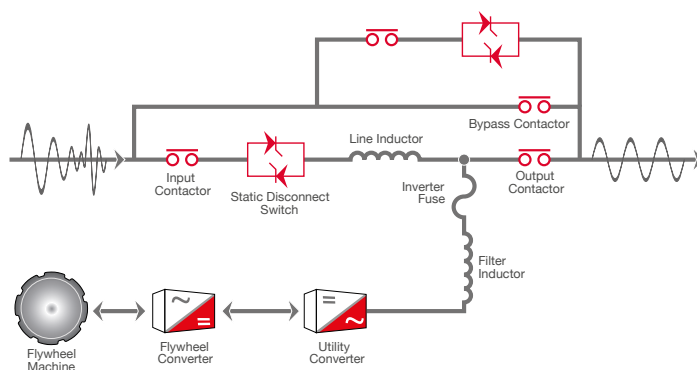
Active Power's Single Module System Flywheel UPS is the perfect combination of total cost of ownership, reliability and sustainability for any mission critical application.

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

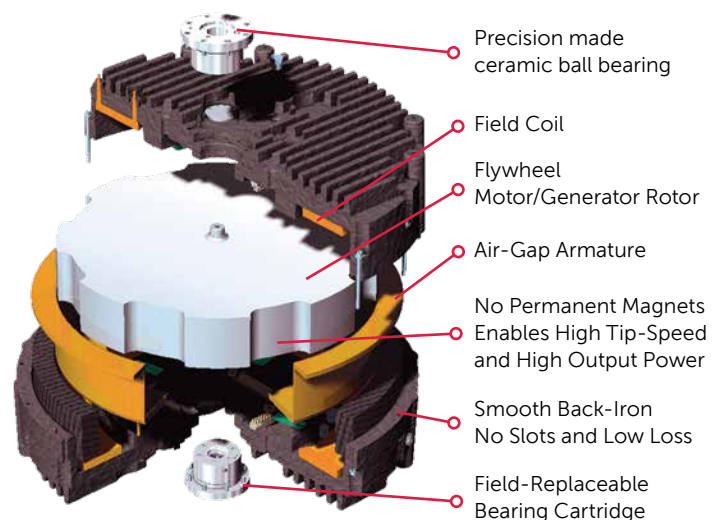
Parallel Online Architecture

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

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

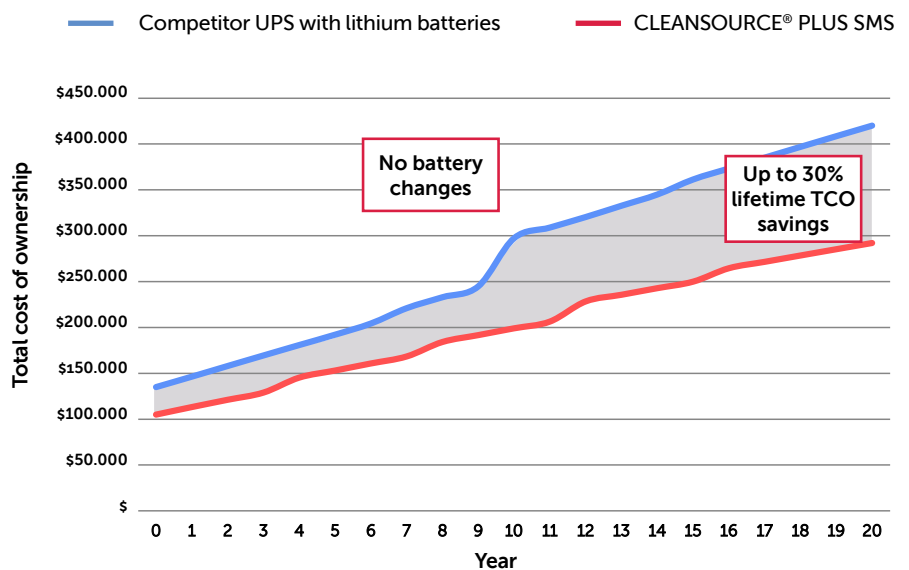
No need for dedicated cooling for batteries

► 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 | 333 | | | |
| Maximum kW | 300 | | | |
| 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) | 372A | | | |
| 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 | 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) | 400A | | | |
| 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% 95.0% | 50% 97.3% | 75% 98.0% | 100% 98.3% |

| 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 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 | 5.2kW/17754BTU/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



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