



CLEANSOURCE[®] UPS MULTI-MODULE SYSTEMS

G-Series (225 - 450 kW)

Z-Series (225 - 900 kW)



40%
TCO Savings



12x
Less Likely
to Fail



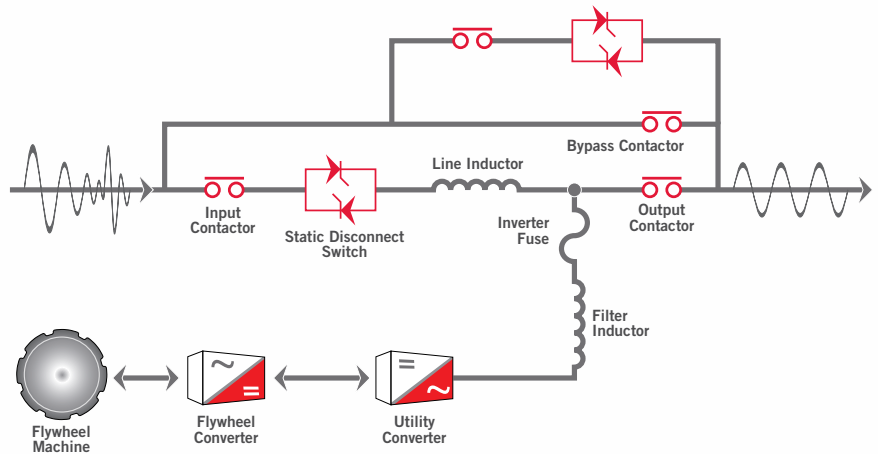
9x
Less Carbon
Emissions

CLEANSOURCE UPS MULTI-MODULE SYSTEMS

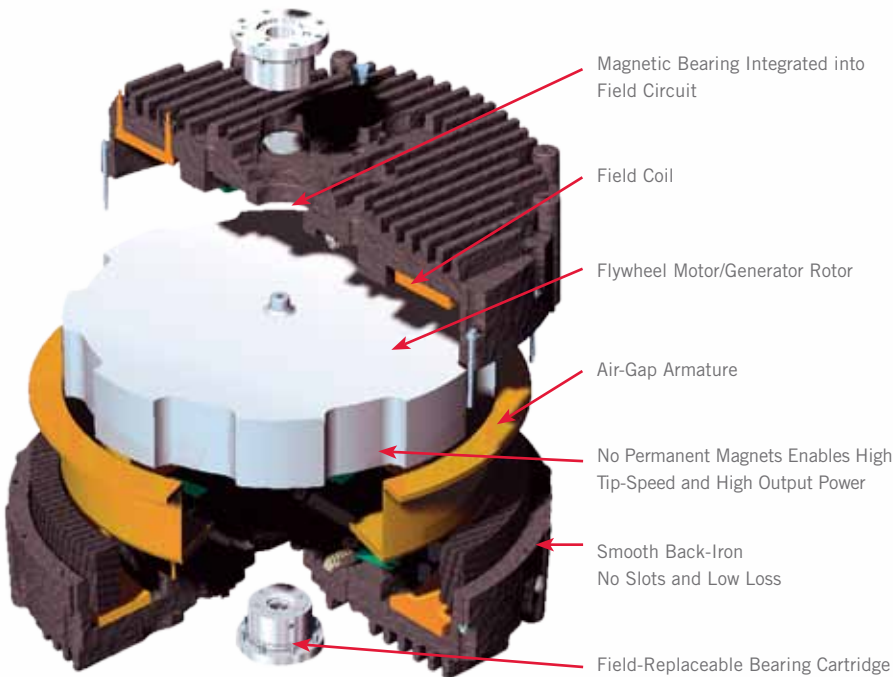
CleanSource UPS Multi-Module System (MMS) offers a wide range of modular and redundant backup power systems from 225 kW to 900 kW. The built-in flywheel energy storage takes up less than half the footprint of battery based systems, delivers efficiency up to 98% and lowers total cost of ownership by up to 40% over the life of the product. This field proven technology is based on a highly fault tolerant IGBT architecture designed to protect all critical loads, such as data centers, industrial processes and healthcare applications. Active Power's CleanSource UPS MMS can also be expanded into multi-megawatt configurations with paralleling capability for capacity and redundancy.

PARALLEL ONLINE ARCHITECTURE

The CleanSource UPS MMS 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



KEY BENEFITS AND FEATURES

- Half the space of legacy battery based UPS
- Up to 98% efficient
- Field expandable
- 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 and integrated maintenance
- bypass option
- Seismic provisions (optional)
- 20-year design life

Stores 4.3 MJ of energy • Up to 1 minute of runtime (load dependent)
Wide ambient temperature range – 0°C – 40°C • High density, high efficiency design

MODULAR & SCALABLE ARCHITECTURE

CleanSource UPS Z Series 900 kW



CleanSource G and Z Series UPS systems are inherently modular and redundant, allowing customers to expand the system as needed to increase power capacity or add redundancy. Each system consists of an input / output cabinet (IOC), a system cabinet (SC), capability to connect up to four 225 kW multi module units (MMU) and built-in top or bottom wireway for cable routing.

- CleanSource G Series UPS can be configured up to 450 kW N+1
- CleanSource Z Series UPS can be configured up to 675 kW N+1 or 900 kW

PARALLEL MULTI-MODULE SYSTEMS



CleanSource G or Z Series UPS can also be paralleled to create multi-megawatt deployments for large applications. Up to 7 systems can be paralleled together using Active Power's paralleling hub and network cabling.

CLEANSOURCE® UPS PRODUCT LINE

Multi-Module Systems: G-Series (225-450 kW)

Multi-Module Systems: Z-Series (225-900 kW)

| MODEL | UPS 250iG | | UPS 500iG | | UPS 250Z | UPS 500Z | UPS 750Z | UPS 1000Z | | |
|-------------------------------------|---|--------|------------------------|------|---|------------------------|------------------------|------------------------|--------|---------|
| RATING | | | | | | | | | | |
| Maximum kVA | 250 | | 500 | | 250 | 500 | 750 | 1000 | | |
| Maximum kW | 225 | | 450 | | 225 | 450 | 675 | 900 | | |
| INPUT | | | | | | | | | | |
| Voltage ¹ | 380/400/415 VAC 3-phase, 4-wire plus ground | | | | 380/400/415 VAC 3-phase, 4-wire plus ground | | | | | |
| Voltage Range | +10% / -15% (programmable) +/- 10% (default) | | | | +10% / -15% (programmable) +/- 10% at 380 VAC | | | | | |
| Frequency | 50 Hz +/- 10% maximum (programmable) +/- 3% (default) | | | | 50 Hz +/- 10% maximum (programmable) +/- 3% (default) | | | | | |
| Power Factor | 0.99 at rated load and nominal voltage | | | | 0.99 at rated load and nominal voltage | | | | | |
| Harmonic Current Distortion | | | | | | | | | | |
| Linear Load | <3% at 100% load | | | | <3% at 100% load | | | | | |
| Non-Linear Load ² | <5% at 100% load | | | | <5% at 100% load | | | | | |
| Current - Nominal (380 VAC) | 358A | | 709A | | 355A | 709A | 1064A | 1419A | | |
| Current - Nominal (400 VAC) | 340A | | 674A | | 337A | 674A | 1011A | 1348A | | |
| Current - Nominal (415 VAC) | 328A | | 650A | | 325A | 650A | 974A | 1299A | | |
| Current - Maximum Continuous | 400A | | 800A | | 400A | 800A | 1200A | 1600A | | |
| Current - Maximum Non-Continuous | 420A | | 840A | | 420A | 840A | 1260A | 1680A | | |
| Surge Withstand | Meets IEEE 587/ANSI C62.41 | | | | Meets IEEE 587/ANSI C62.41 | | | | | |
| Walk-In | 1 to 15 seconds (programmable) | | | | 1 to 15 seconds (programmable) | | | | | |
| OUTPUT | | | | | | | | | | |
| Voltage | 380/400/415 VAC 3-phase, 4-wire plus ground | | | | 380/400/415 VAC 3-phase, 4-wire plus ground | | | | | |
| Voltage regulation | | | | | | | | | | |
| Steady state | +/-1% for +/-10% input | | | | +/-1% for +/-10% input | | | | | |
| Flywheel mode | +/-1% steady state | | | | +/-1% steady state | | | | | |
| Transient | +/-1% within 50 mSec for 100% load step | | | | +/-1% within 50 mSec for 100% load step | | | | | |
| Voltage distortion ³ | | | | | | | | | | |
| | <3% linear loads and <5% for 100% non-linear loads | | | | <3% linear loads and <5% for 100% non-linear loads | | | | | |
| Frequency | 50Hz (mains synchronized) (normal operation +/- 0.2% free running) | | | | 50Hz (mains synchronized) (normal operation +/- 0.2% free running) | | | | | |
| Slew Rate | Adjustable from 0.2Hz/second to 3.0Hz/second | | | | Adjustable from 0.2Hz/second to 3.0Hz/second | | | | | |
| Current - Nominal (380 VAC) | 380A | | 761A | | 380A | 761A | 1141A | 1521A | | |
| Current - Nominal (400 VAC) | 361A | | 723A | | 361A | 723A | 1084A | 1445A | | |
| Current - Nominal (415 VAC) | 348A | | 696A | | 348A | 696A | 1045A | 1393A | | |
| Overload Capability-Mains Operation | | | | | | | | | | |
| | Continuously | 10 Min | 2 Min | 30s | Immediate | Continuous | 10 Min | 2 Min | 30 Sec | 10 mSec |
| | 105% | 125% | 150% | 200% | >200% | 105% | 125% | 150% | 200% | >200% |
| UPS Efficiency ³ | 97% | | | | 98% | | | | | |
| ENERGY STORAGE | | | | | | | | | | |
| Type | Integrated Steel Flywheel spinning at 7,700 RPM | | | | Integrated Steel Flywheel spinning at 7,700 RPM | | | | | |
| Flywheel Runtime (% Load) | | | | | | | | | | |
| | 100% | 75% | 50% | 25% | 100% | 75% | 50% | 25% | | |
| | 15s | 19s | 28s | 52s | 15s | 19s | 28s | 52s | | |
| Flywheel Recharge Time ⁴ | < 2 min (nominal) at 75kW / 3 min (programmable) at 30kW | | | | < 2 min (nominal) at 75kW / 3 min (programmable) at 30kW | | | | | |
| GENERAL | | | | | | | | | | |
| Parallel Capability | Yes, up to 7 systems | | | | Yes, up to 7 systems | | | | | |
| Internal Maintenance Bypass Panel | Yes (optional) | | | | No (external only) | | | | | |
| N+1 Redundant Module | Yes (optional) | | | | Yes (optional) | | | | | |
| OSHPD Seismic Rated | No | | | | Yes (optional) | | | | | |
| ENVIRONMENTAL | | | | | | | | | | |
| Audible Noise | <72 dBA at 1 meter | | | | <72 dBA at 1 meter | | <75 dBA at 1 meter | | | |
| Operating Temperature | 0 to 40° C | | | | 0 to 40° C | | | | | |
| Storage Temperature | -25 to 70° C | | | | -25 to 70° C | | | | | |
| Humidity | 5% to 95% (non-condensing) | | | | 5% to 95% (non-condensing) | | | | | |
| Altitude | Up to 1,000m / 1.2° C derating for every 300m above 1,000m | | | | Up to 1,000m / 1.2° C derating for every 300m above 1,000m | | | | | |
| Emissions and Immunity | EN 62040-2 | | | | EN 62040-2 | | | | | |
| Heat Rejection- Online | 5.8kW / 19,946 BTU/hr | | 11.7kW / 39,893 BTU/hr | | 5.8kW / 19,946 BTU/hr | 11.7kW / 39,893 BTU/hr | 17.5kW / 59,839 BTU/hr | 23.4kW / 79,786 BTU/hr | | |
| PHYSICAL DATA | | | | | | | | | | |
| Height (without wireway or DC bus) | 1,981 mm | | 1,981 mm | | 1,981 mm | 1,981 mm | 1,981 mm | 1,981 mm | | |
| Width | 3,226 mm | | 4,318 mm | | 3,226 mm | 4,318 mm | 5,410 mm | 6,502 mm | | |
| Depth | 865 mm | | 865 mm | | 865 mm | 865 mm | 865 mm | 865 mm | | |
| Weight | 2,892 kg | | 4,933 kg | | 3,063 kg | 5,103 kg | 7,144 kg | 9,185 kg | | |
| Cable Entry | Top or Bottom | | | | Top or Bottom | | | | | |
| Safety | EN 62040-1-1 | | | | EN 62040-1-1 | | | | | |

¹ From grounded WYE source

² EN 62040-3

³ DC energy storage offline

⁴ kW recharge value is per flywheel



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