



CLEANSOURCE® XT MMS MULTI-MODULE SYSTEM UPS

480V | FLYWHEEL TECHNOLOGY

G-SERIES 250kW TO 500kW | Z-SERIES 250kW TO 2000kW



CLEANSOURCE® XT MMS MULTI-MODULE SYSTEM UPS

Overview

CLEANSOURCE® XT MMS Modular UPS System offers a wide range of modular and redundant back-up power systems from 250kW to 2000kW.

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.

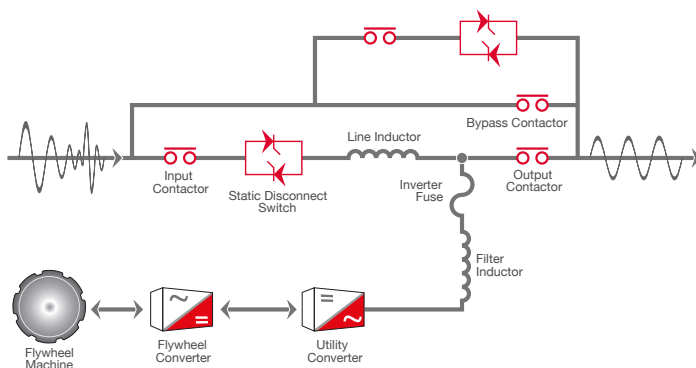
This field-proven technology is based on a highly fault tolerant IGBT architecture designed to protect all critical loads, such as data centers, industrial processes and health care applications. Stored energy will provide ride-through up to 2 minutes depending upon configuration, making the CLEANSOURCE® XT MMS a clear alternative to modular static UPS systems reliant on battery storage.

The CLEANSOURCE® XT MMS Modular UPS System has more than enough energy storage for diesel starting and synchronization, even when paralleling generating sets. Elimination of batteries saves space and weight, reduces site testing and maintenance and removes the need for routine replacement after a few years of service life.

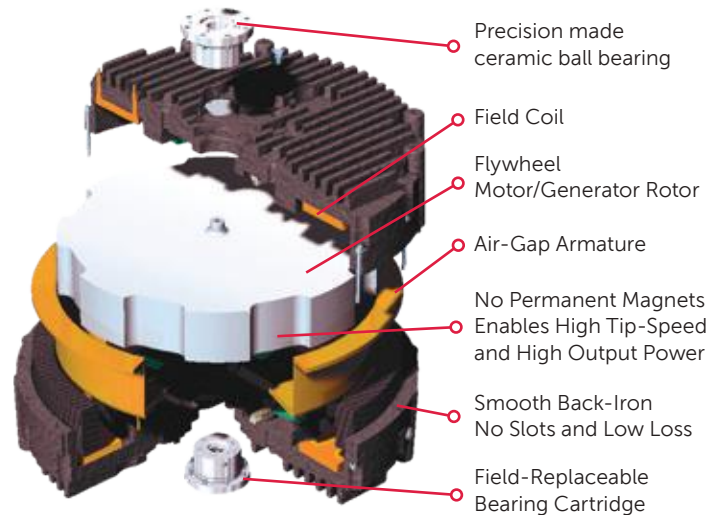
Parallel Online Architecture

The CLEANSOURCE® XT MMS Modular UPS 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 operation, 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
- ◉ FIELD EXPANDABLE
- ◉ REDUNDANT FANS AND CONTROL POWER UNITS
- ◉ LOWER COOLING REQUIREMENTS
- ◉ LOWER MAINTENANCE AND SERVICE
- ◉ COST-EFFECTIVE INSTALLATION
- ◉ COLOUR LCD TOUCH SCREEN DISPLAY
- ◉ REMOTE MONITORING
- ◉ BUILT-IN POWER FACTOR CORRECTION
- ◉ GENERATOR COMPATIBILITY
- ◉ DUAL INPUT AND INTEGRATED MAINTENANCE
BYPASS OPTION
- ◉ SEISMIC PROVISIONS – CONSULT FACTORY
- ◉ 20-YEAR DESIGN LIFE
- ◉ 250kW BUILDING BLOCKS EXPANDABLE TO 2MW

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

90% LESS CARBON USED IN UPS MANUFACTURE
OVER 40% LESS CARBON EMITTED OVER 20 YEARS

CLEANSOURCE® XT MMS 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

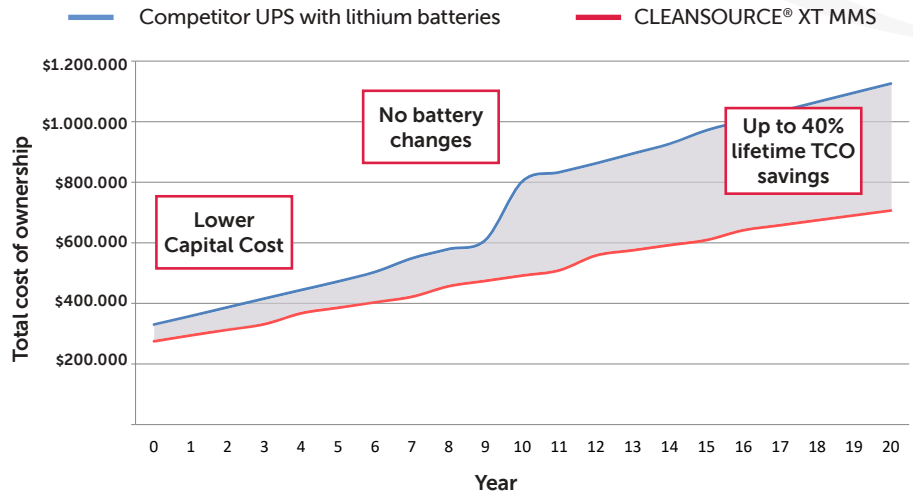
No need for dedicated cooling for batteries

▶ LOWER MAINTENANCE REQUIREMENTS

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

▶ NO BATTERY CHANGES

Integrated flywheel with 20-year life.



Modular and Scalable Architecture

CLEANSOURCE® XT MMS G and Z Series UPS are modular and capable of multiple redundancy levels. Customers may readily expand their systems in line with their own growth needs by adding further modules over time. Each system consists of an input/output cabinet (IOC), a system cabinet (SC) and the ability to connect up to four 250kW modules with built-in wireway. In total, 8 modules can operate in a single system, providing up to 2000kW of high efficiency, battery-free UPS power. CLEANSOURCE® XT MMS G Series UPS can be configured up to 500kW N+1. CLEANSOURCE® XT MMS Z Series UPS can be configured up to 2000kW.



250kW TO 2000kW | 480V

PRODUCT SPECIFICATIONS

MODEL	XT 250 G	XT 500 G	XT 250 Z	XT 500 Z	XT 750 Z	XT 1000 Z		
RATING								
Maximum kVA	275	550	275	550	825	1100		
Maximum kW	250	500	250	500	750	1000		
INPUT								
Voltage ¹	480 VAC 3-phase, 3-wire plus ground (4 wire optional)							
Voltage Range	+10% / -15% (programmable)							
Frequency	60Hz +/- 10% maximum (programmable) +/- 3% (default)							
Power Factor	0.99 at rated load and nominal voltage							
Harmonic Current	Linear load	<2% at 100% load						
Distortion	Non-linear	<8% at 100% load						
Current – Nominal (480 VAC)	312A	623A	311A	623A	934A	1245A		
Current – Max. Continuous	400A	800A	400A	800A	1200A	1600A		
Current – Max. Non-Continuous	420A	840A	420A	840A	1260A	1680A		
Surge Withstand	Meets IEEE 587/ANSI C62.41							
Walk-in	1 to 15 seconds (programmable)							
OUTPUT								
Voltage	480 VAC 3-phase, 3-wire plus ground (4-wire optional)							
Voltage Regulation	Steady State	+/-1% for +/-10% input						
	Flywheel Mode	+/-1% steady state						
	Transient	+/-1% within 50 mSec for 100% load step						
Voltage Distortion ²	<1% linear loads and <5% for 100% non-linear loads							
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)	331A	662A	331A	662A	992A	1323A		
Overload Capability-Mains Operation			Cont. 105%	10 min <110%	5 min <125%	1 min <150%	10s <200%	Imd. >200%
Efficiency – Energy Storage Online	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	< 3 min (nominal) at 65kW							
GENERAL								
Internal Maintenance Bypass Panel	Yes (optional)			No (external only)				
N+1 Redundant Module	Yes (optional)							
OSHPD Seismic Rated	Consult factory							
ENVIRONMENTAL								
Audible Noise	<80 dBA at 1 metre							
Operating Temperature	32 to 104°F (0 to 40°C)							
Storage Temperature	-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 (304m) above 3,000ft (914m)							
Emissions and Immunity	FCC Clas A, EN 62040-2							
Heat Rejection – Online	6.4kW / 21,851BTU/Hr	12.8kW / 43,701BTU/Hr	6.4kW / 21,851BTU/Hr	12.8kW / 43,701BTU/Hr	19.2kW / 65,552BTU/Hr	25.6kW / 87,402BTU/Hr		
PHYSICAL DATA								
Height	78.0in/1,981mm Excl. Wireway. 96.0in/2,438mm Inc. Wireway							
Width	127.0in/3,226mm	170in/4,318mm	127.0 in / 3,226 mm	170 in / 4,318 mm	213.0 in / 5,410 mm	256.0 in / 6,502 mm		
Depth	34.0in/865mm	34.0in/865mm	34.0in/865mm	34.0in/865mm	34.0 in / 865 mm	34.0 in / 865 mm		
Weight	6,375lbs / 2,892 kg	10,875 lbs / 4,933 kg	6,750 lbs / 3,063 kg	11,250 lbs / 5,103 kg	15,750 lbs / 7,144 kg	20,250 lbs / 9,185 kg		
Cable Entry	Top or Bottom							
Safety	UL/cUL 1778 and CAN/CSA 22.2 No.107.1 Listed							

¹ From grounded WYE source

² EN 62040-3

³ kW recharge value is per flywheel.



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