



CLEANSOURCE® XT MMS **MULTI-MODULE SYSTEM UPS**

380/400/415V | FLYWHEEL TECHNOLOGY

G-SERIES 225kW TO 450kW | Z-SERIES 225kW TO 1800kW



CLEANSOURCE® XT MMS MODULAR UPS SYSTEMS

Overview

CLEANSOURCE® XT MMS Modular UPS System offers a wide range of modular and redundant back-up power systems from 225kW to 1800kW.

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.

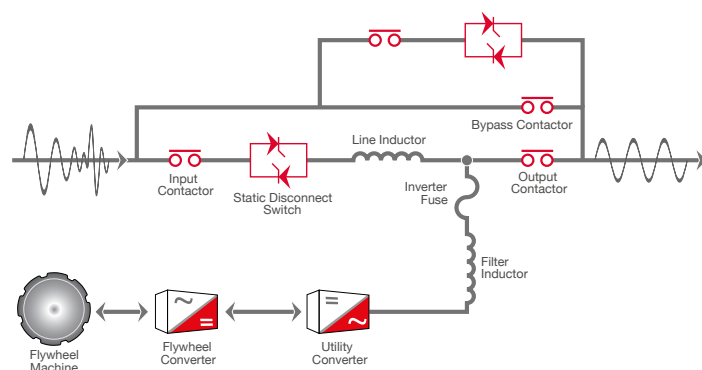
This field-proven technology is based on a highly fault tolerant IGBT architecture designed to protect all critical loads, such as data centers, industrial processes and health care applications. Stored energy will provide ride-through up to 2 minutes depending upon configuration, making the CLEANSOURCE®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

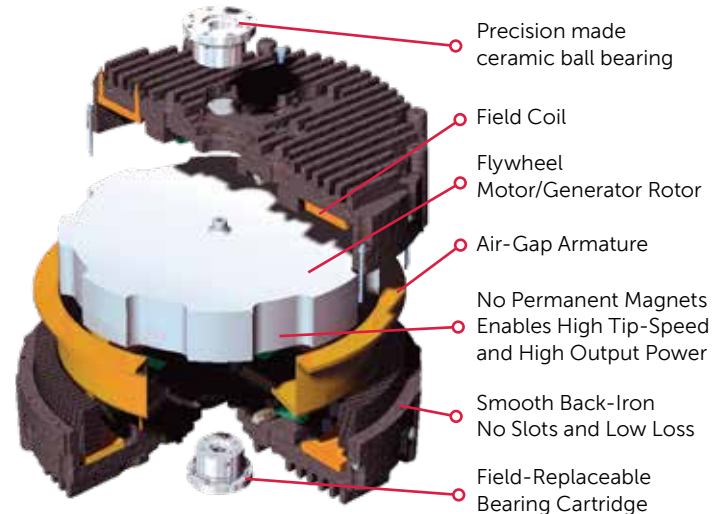
Parallel Online Architecture

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
- ⦿ 225kW BUILDING BLOCKS EXPANDABLE TO 1.8MW

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

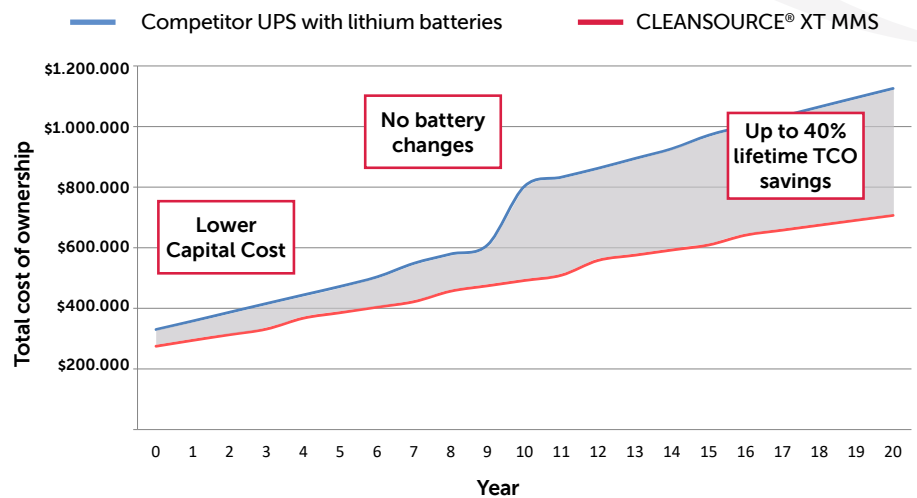
No need for dedicated cooling for batteries

► 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 225kW modules with built-in wireway. In total, 8 modules can operate in a single system, providing up to 1800kW of high efficiency, battery-free UPS power. CLEANSOURCE® XT MMS G Series UPS can be configured from 450kW N+1. CLEANSOURCE® XT MMS Z Series UPS can be configured from 1800kW.



225kW TO 1800kW | 380/400/415V

PRODUCT SPECIFICATIONS

MODEL	XT 225 G	XT 450 G	XT 225 Z	XT 450 Z	XT 675 Z	XT 900 Z	
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						
Voltage Range ²	+10% / -15% (programmable)						
Frequency	50/60Hz +/- 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 ³	<8% at 100% load					
Current – Nominal (380 VAC)	356A	712A	356A	712A	1068A	1423A	
Current – Nominal (400 VAC)	338A	676A	338A	676A	1014A	1352A	
Current – Nominal (415 VAC)	326A	652A	326A	652A	978A	1303A	
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	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 ³	<1% linear loads and <5% for 100% non-linear loads						
Frequency	50/60Hz (mains synchronized) (normal operation +/- 0.2% free running)						
Slew Rate	Adjustable from 0.2Hz/second to 3.0Hz/second						
Current – Nominal (380 VAC)	380A	760A	380A	760A	1140A	1519A	
Current – Nominal (400 VAC)	361A	722A	361A	722A	1083A	1443A	
Current – Nominal (415 VAC)	348A	696A	348A	696A	1043A	1391A	
Overload Capability-Mains Operation	Cont. 105%		10 min <110%	5 min <125%	1 min <150%	10s <200%	lmd. >200%
Efficiency – Energy Storage Online	97%						
ENERGY STORAGE							
Type	Integrated Steel Flywheel spinning at 10,000RPM						
Flywheel Run Time (% Load)	100% 27s		75% 36s	50% 52s	25% 94s		
Flywheel Recharge Time ⁴	< 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	6.9kW / 23,558BTU/Hr	13.9kW / 47,457BTU/Hr	6.9kW / 23,558BTU/Hr	13.9kW / 47,457BTU/Hr	20.8kW / 71,014BTU/Hr	27.8kW / 94,913BTU/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	156.0 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	EN 62040-1						

¹ From grounded WYE source

² +/-10% at 380VAC

³ EN 62040-3

⁴ kW recharge value is per flywheel.



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