



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 MULTI-MODULE SYSTEM UPS

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.

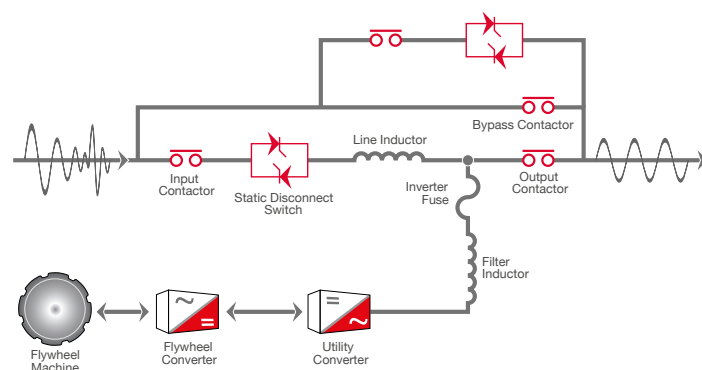
This field-proven technology is based on a highly fault tolerant IGBT architecture designed to protect all critical loads, such as data centers, industrial processes and health care applications. Stored energy will provide ride-through up to 2 minutes depending upon configuration, making the CLEANSOURCE®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

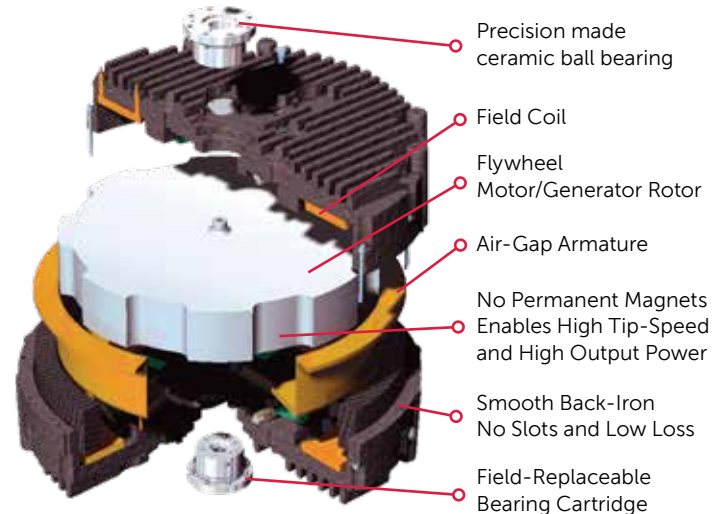
Parallel Online Architecture

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

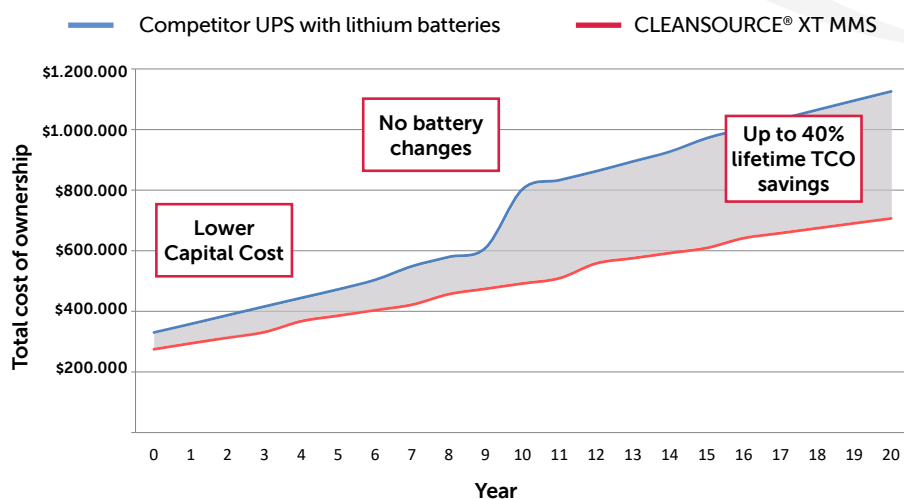
No need for dedicated cooling for batteries

► 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. 10 min 5 min 1 min 10s lmd.		105% <110% <125% <150%		<200%		>200%			
Efficiency – Energy Storage Online		97%											
ENERGY STORAGE													
Type		Integrated Steel Flywheel spinning at 10,000RPM											
Flywheel Run Time (% Load)				100% 75% 50% 25%		27s 36s 52s 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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