

Reliable Backup for Healthcare

ESS400 ENERGY STORAGE SYSTEM








Hybrid SuperCapacitors

Musashi's Hybrid SuperCapacitor (HSC) products deliver unparalleled high-power density energy storage to meet the diverse needs of a wide range of healthcare applications.

Reliable power backup is essential for medical facilities to ensure patient safety and regulatory compliance. The ESS400 paired with a 3-phase UPS enables seamless generator transfer, reduces costs, and saves space while supporting the requirements of sensitive medical equipment. It offers a lifespan of more than 15 years and 100K-cycles, eliminating costly power upgrades while meeting growing peak power demands.

Benefits for Healthcare Applications

-  **Reliable Backup** for healthcare facilities
-  **Compatible with NFPA99-Compliant** stand-by generators that support load within 10 seconds during power disruption
-  **Paired with a 3-Phase UPS**, the ESS400 enables transfer to generator in seconds
-  **Eliminate Batteries** to save space & cost; safeguards emergency power for medical IT infrastructure, imaging equipment, and critical loads
-  **Peak Power Support** for medical imaging equipment



High Power Density

Saves space in your facility or enclosure



Long Product Life

More than 15 years; even in the most challenging environments



Wide Temperature Range

0- 40°C



High Cycle Life

Achieve up to 100K+ full discharge/recharge cycles



Safe and Reliable

No thermal runaway; UL1973; IBC, HCAI (OSHDP) Seismic



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**GO
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ESS400

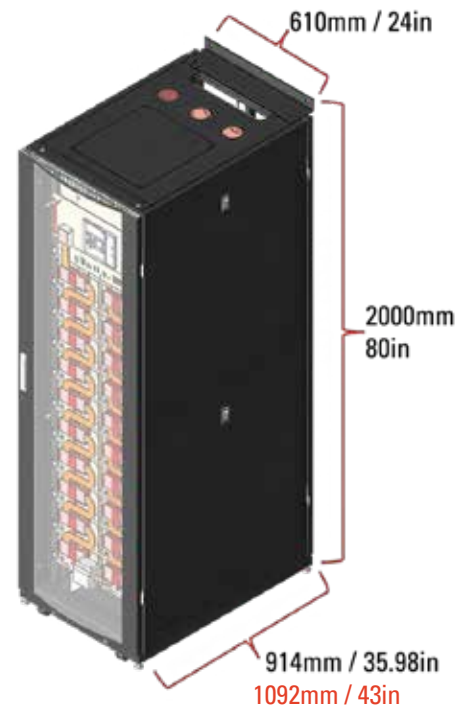
ENERGY STORAGE SYSTEM

Specification Overview

	ITEM	DESCRIPTION
Basic Parameters	Cell Type	Hybrid SuperCapacitor
	Nominal Voltage	480Vdc
	Maximum Voltage	594Vdc
	Minimum Voltage	384Vdc
	Maximum Charging Current	285A
	Maximum Discharge Current	1033 A
	Discharge Duration (@333kW)	33 seconds
	Maximum Power Output	400 kW
	Cycle Life	>100,000 @ 100% DOD; >400,000 @ 80% DOD
	Communication Interface	Modbus TCP, Dry Contact
	Protection	Over/under temp., over/under voltage, short circuit, communication failure
Design Life	15+ years	
Environment	Certifications & Testing	UL 810A, UL 1973, UL 9540A, RoHS
	IP Level	IP 20
	Storage Temperature	0- 40°C (10- 30°C recommended)
	Operating Temperature	0- 40°C (10- 30°C recommended)
	Relative Humidity	90% and less
	Maximum Operating Altitude	3000m
Transport	UN 3508	

PARAMETER	STANDARD FULL CABINET	ESS400-S SEISMIC CABINET
Configuration	20 modules in series	20 modules in series
Usable Capacity	2740 Wh	2740 Wh
Nominal Voltage	480 Vdc	480 Vdc
Operation Voltage Range	384- 594 Vdc	384- 594 Vdc
Dimensions- WxDxH (mm/in)	610x914x2000 / 24x35.98x80	610x1092x2000 / 24x43x80
Weight (maximum)	627 kg / 1,383 lbs	653 kg / 1,440 lbs
Certifications & Testing	UL 810A, UL 1973, UL 9540A, RoHS	+ IBC, HCAI (OSHDP)

BOL Back-UpTime @ 25°C 384V-594V DC (Number of Cabinets)								
Load (KW)	1	2	3	4	5	6	7	8
100	122	253	385	516	647	778	910	1041
250	43	96	148	201	253	306	358	411
400	23	56	89	122	155	188	220	253
600		34	56	78	100	122	144	166
800		23	40	56	73	89	106	122
1200			23	34	45	56	67	78
1600				23	32	40	48	56
2000					23	30	37	43



Note: Backup times (in seconds) are estimated, and do not account for resistances external to cabinet (busbar, UPS, etc)