



## Altus-500<sup>®</sup> Supercapacitor Energy Storage System Datasheet

**The Altus-500<sup>®</sup> Supercapacitor Energy Storage System (SCESS) represents a shift in the maritime industry. No other Energy Storage System can compete with long life (+25years), safety and practically no maintenances. High quality manufacturing in an ISO 9001:2015 Facility located in Canada.**

When launched in 2020, Altus-500<sup>®</sup> combined +5 years of industry-leading research and development efforts backed by Canadian Scientists and engineers with years of experience, offering unparalleled after sale 24/7 service and remote monitoring, from our R & D facility located in BC, Canada. We have built the industry's safest, most reliable, high performing and cost-effective maritime SCESS.

### Applications:

Altus-500<sup>®</sup> is ideal for applications that are in need of both energy and a high amount of power, moving large amounts of energy at an inexpensive lifetime cost per kWh. Typical vessel-types are:

- Ferries
- Cruise ships
- Ro/Ro – Ro/Pax
- Yachts
- Offshore vessels
- Rigs
- Tugs
- Fishing vessels
- Merchant vessels
- Port cranes
- Shore charging
- Fish farms

### Features:

- High C-Rate – up to 6C continuous
- Designed for voltages up to 2000 VDC
- Low installation and commissioning time
- Can be assembled on vessels with limited access
- Uses standard 19inch IT Racks
- Very Low life cycle cost
- Enhanced reliability with contained power connections
- Flexible and modularised design
- Scalable capacity and voltage according to vessel requirements
- Innovative and user-friendly Capacitor Management System (CMS)
- Remote monitoring capabilities





## Technical Specifications | Altus-500®

### Performance Specifications

C-Rate - Peak (Discharge / Charge)	Up to 10C
C-Rate - Continuous (Discharge / Charge)	Up to 6C / 6C

### System Specifications

Single Module Size / Increments	5.1 kWh / 48 VDC (36-54 Vdc) 1.7, 3.4 and 5.1 kWh
Single Module Range	1.7-5.1 kWh
Dimensions	535X178X560mm (1.7 and 3.4 kWh) 535X178X815 mm (5.1kWh)
Weight	21, 37 and 54 kgs
Max Gravimetric Density - <b>Module</b>	94 Wh/kg 10.6 kg/kWh
Max Volumetric Density - <b>Module</b>	66 Wh/l

### Racks

Energy per module	1.7-5.1 kWh Based on the Module size used. (1.7, 3.4 or 5.1 kWh)
Maximum number of modules per rack	10 (Ten)
Voltage	Max: 540 VDC   Nom: 480 VDC   Min: 360 VDC
Dimensions - 51 kWh	Height: 2200 mm   Width: 610 mm   Depth: 815 mm   560 kg

### Example System – 1.02MWh

Energy	1020 kWh
Number of Racks	20
Voltage	Max: 2,160 VDC   Nom: 1,920 VDC   Min: 1,440 VDC
Dimensions – 5.1X20 kWh	Height: 2,200 mm   Width: 12,200 mm   Depth: 815 mm   11,200 Kg

### Safety Specifications

Thermal Runaway Anti-Propagation	Not Required
Fire Suppression	Standard fire suppression for electrical equipment
Safety Protection	Over temperature, Over voltage, overcurrent (Solid State)
Short Circuit Protection	Solid-state protection, System Shut down
Emergency Stop Circuit	Hard-wired (Optional)
Ground fault Detection	System level
Disconnect switchgear rating	Optional

### General Specifications

Class Compliance	DNV GL, Lloyds Register, Bureau Veritas, ABS, RINA
Type Approval	ABS
Ingress Protection	Ventilated Enclosure NEMA 12
Environmental	-40 to +65 Deg. C ( Ambient) R. Humidity <95% non condensing
Cooling	Convection

Note: Specifications may change without notice