



**corvus**  
energy  
DESIGNED FOR LIFE AT SEA™

The Edda Freya, a newly launched offshore construction vessel, utilizes a diesel electric hybrid propulsion system powered by a Corvus Energy ESS.

## Orca ESS Solutions

**THE WORLD'S MOST ADVANCED MARITIME ESS (ENERGY STORAGE SYSTEMS).** Designed and built specifically for the maritime industry, the Orca ESS product line from Corvus Energy represents the future of maritime ESS solutions. Corvus combined its industry leading research & development capabilities and knowledge gained from having the largest global installed base of ESS solutions, to build the industry's safest, most reliable, highest-performing and most cost-effective maritime ESS product line, which includes: Orca Energy and Orca Power.

## Orca Power

Orca Power, specifically designed for the most demanding applications that require seamless response to dynamic power loads with small system footprint and weight.

OFFSHORE SUPPLY VESSELS  
OFFSHORE EXPLORATION &  
PRODUCTION VESSELS

MOBILE RIGS  
SHORE CHARGING  
PORT CRANES



Air Cooled Module



Air Cooled Pack



Liquid Cooled Pack

### THE ORCA POWER DIFFERENCE

- Economical power capability – industry's most attractive \$/kilowatt
- Total cost reduced by 50%
- Highest C-Rates in the industry – up to a 15C peak C-rate
- Unparalleled power density – 30% volume & 30% weight reductions
- Connection & commissioning time reduced by 80%
- Enhanced EMI immunity design for maritime environments
- Economical upfront & through-life costs = lower total cost of ownership
- Power connections contained within rack – no manual connections, enhanced reliability, increased safety
- Designed for pack voltages up to 1200VDC
- Scalable beyond 10MWh
- Industry-proven 4th generation BMS
- Easily monitored through the Watchman™ ESS Advisory Portal

### ORCA SAFETY INNOVATIONS

#### Cell-level Thermal Runaway (TR) Isolation

- True cell-level thermal runaway isolation – TR does not propagate to neighbouring cells
- Isolation NOT dependant on active cooling
- Exceeds Class and Flag standards

#### TR Gas venting

- Integrated thermal runaway gas exhaust system
- Easily vented to external atmosphere rather than the battery room
- Additional fire suppression system not required





Eidesvik Offshore's Viking Lady utilizes a Corvus Energy ESS to improve energy efficiency while servicing platforms in the North Sea.

## Technical Specifications\*

<b>PERFORMANCE SPECIFICATIONS</b>	
C-Rate – Peak	15C
Cycle Life	8000 cycles, 80% DoD
<b>OPERATIONAL SPECIFICATIONS</b>	
Pack Sizing	100-1200V   3.6-43kWh
<b>1100V STANDARD BATTERY PACK EXAMPLE <sup>1</sup></b>	
Energy	39 kWh
Voltage	Maximum: 1100 VDC   Nominal: 980 VDC   Minimum: 870 VDC
Cooling	Forced Air / Liquid Cooling
Dimensions (vertical arrangement)	Height: 2200 mm   Width: 645 mm   Depth: 705 mm
Dimensions (horizontal arrangement)	Height: 1250 mm   Width: 1300 mm   Depth: 705 mm
Weight	680 kg (1500 lb)
<b>GENERAL SPECIFICATIONS</b>	
EMC	IEC 61000-4, CISPR16-1, 2, IEC60945-9
Ingress Protection	System: IP44   Module: IP56 (IP67 optional)
Vibration & Shock	UNT 38.3, DNV 2.4, IEC 60068-2-6
Class compliance	DNV-GL, Lloyds Register, Bureau Veritas, ABS
<b>SAFETY SPECIFICATIONS</b>	
Voltage Isolation	7.2 kV (IEC 60947-2)
Thermal runaway anti-propagation	Cell-level; DNV-GL Pt.6 Ch.2, NMA 2016 circular
Fire suppression recommended	Per SOLAS (machinery space)
Disconnect circuit	Hardware-based fail-safe for over-temperature, over-voltage
Maximum current parameter	Updated 2x per second
Faults communicated	Over-voltage, under-voltage, over-temperature
Short circuit protection	Fuses included
Disconnect switchgear rating	Full load
Emergency stop circuit	Hard-wired
Ground fault detection	Integrated

\* Subject to change without notice <sup>1</sup> Values shown are for reference only and should not be used for system design. Please contact Corvus Energy for complete system design solutions.

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