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**High-Voltage 100~1,000 V
Marine Battery System**

Unmatched Safety, Efficiency,
Reliability, and Sustainability



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*ROYPOW,
Your Trusted Partner*

Contents

About Us

Introduction of Marine Battery System

Why ROYPOW Marine Battery System

Application & System Composition



ROYPOW

For One-stop New Energy Solutions

- R&D, manufacturing and sales of motive power systems and energy storage systems as one-stop solutions
- Fully automatic production lines, a full range of test equipment and an advanced MES
- Covering Low-Speed Vehicles' Batteries, Industrial Batteries, as well as Residential ESS, Commercial & Industrial ESS, and Mobile ESS
- Self-development of power electronics technologies, including PCS, BMS, and EMS



750+ Employees
200+ R&D People
105,000 m² Headquarters Floor Area
2,500 m² Testing Center
257 Patents

Quality Control Certificates:

- ✓ Environmental Management System: ISO 14001:2015
- ✓ Occupational Health and Safety Management System: ISO 45001:2018
- ✓ Quality Management System: ISO 9001:2015, IATF16949:2016
- ✓ Information Security Management System: ISO/IEC 27001:2022
- ✓ Social Accountability Management System: SA8000:2014
- ✓ Hazardous Substance Process Management: IECQ QC 080000

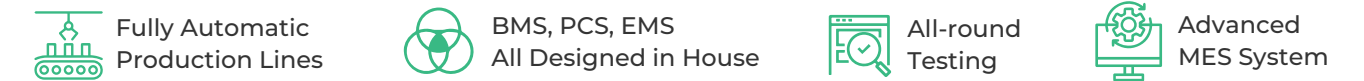


Product Certifications:

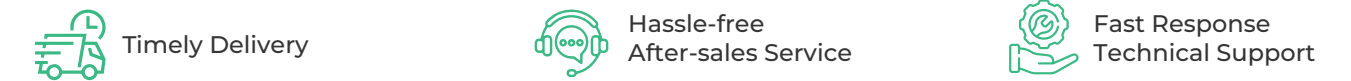
UL 1973, UL 9540A, UL 9540, UL 2580, UL 2271, UL 1741			FCC, IEC/EN 61000-6, BS EN IEC 61000-6
IEEE 1547			IEC 60730, ISO 13849-1
IEC 62619			UN 38.3
EN 62477, EN 62040, (EU) 2023/1542, EN 62109-1, EN 62109-2			RoHS Directive 2011/65/EU & (EU) 2015/863

R&D and Manufacturing Highlights

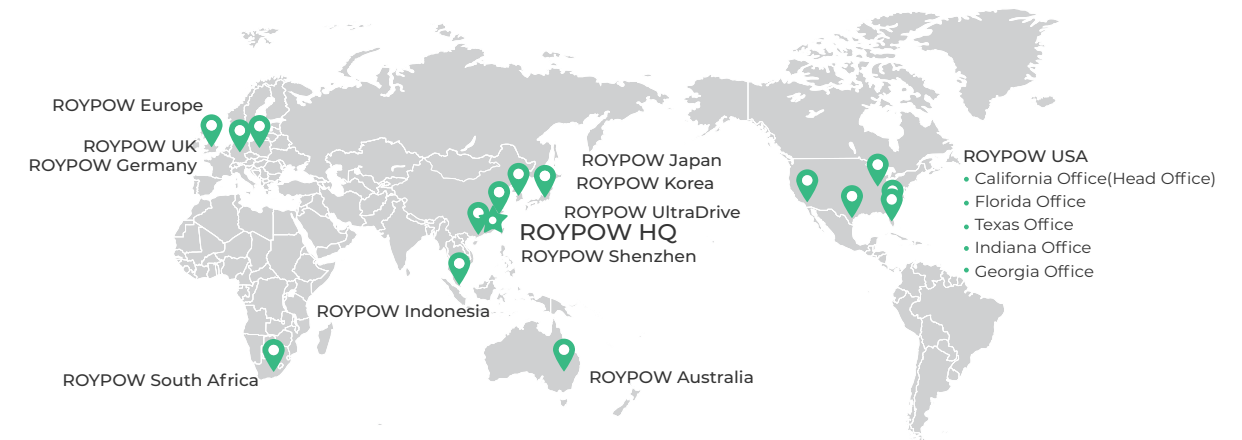
As a result of these investments, ROYPOW is capable of "end-to-end" integrated delivery, making our products out-perform the industry norms.



Global Sales and Service Network



ROYPOW has comprehensively unfolded its overseas market layout to ensure the localization of R&D, manufacturing, marketing and service, becoming one of your most reliable and valuable partners.



Upgrading to New Technology, with Our Turnkey Solutions.

With years of dedication to new energy solutions, we are proud to offer customers professional solutions for:

- Low-speed Vehicle Batteries
- Battery Systems for Off-highway Applications
- Residential Energy Storage Systems
- Mobile Energy Storage Systems
- Industrial Batteries
- Battery Systems for Emerging Applications
- Commercial & Industrial Energy Storage Systems
- Motors, Controllers and Chargers



High-Voltage Marine Battery System

Enable Green, Efficient, Cost-effective Maritime Power Support

Electrification is the future of maritime operations to lower fossil fuel energy consumption and CO2 emissions, reduce running noise, enhance power supply reliability, and reduce operation costs.

ROYPOW high-voltage marine battery systems, high-quality, safe, and concurrently cost-effective, meet all of the growing demands in the marine industry and are ideal for smoothing the transition to fully electric or hybrid-electric power.

Suitable for:



Auxiliary Power System

Provides power support when power is insufficient or additional energy is needed, enhancing the vessel's operational efficiency and reliability.



Main Power System

Utilizes lithium batteries as the main power source for electric navigation. Achieves zero emissions, low noise, and high efficiency while reducing fuel consumption and operational costs.



Emergency Backup Power

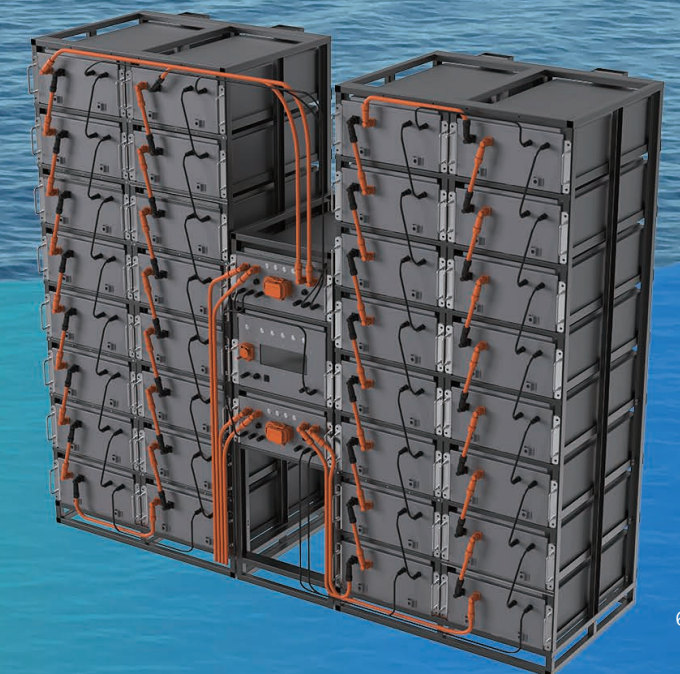
Provides reliable power supply in the event of sudden power failures or other emergencies, ensuring the safe operation of the vessel.



Shore Power

Connects to the port's power grid to replace the vessel's engine power, reducing port pollution and noise, and achieving a low-carbon, environmentally friendly docking status.

Ideal for Retrofit and Newbuilt Electric and Hybrid Power Vessels



Modular Design for Flexible Expansion

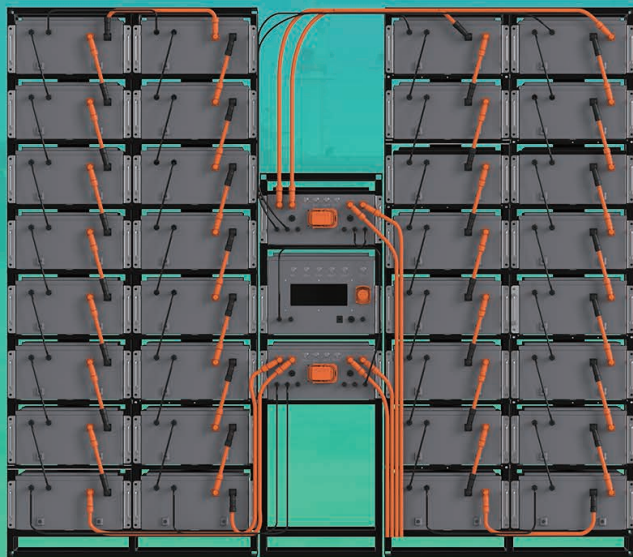
- ✓ Up to **17** PCS Batteries per String
- ✓ **100 ~ 1,000** V High Voltage per String
- ✓ **28~243 / 32~278** kWh High Capacity per String
- ✓ Up to **2,785** kWh High Capacity in Parallel

Reliable & Maintenance-free

- ✓ Up to **10** Years of Design Life
- ✓ Up to **6,000** Times of Cycle Life
- ✓ Rugged & Automotive-grade Design
- ✓ Shock- & Vibration-resistant Reliability

Efficient & High-performance

- ✓ High Usable Energy
- ✓ Enduring & Consistent Power
- ✓ Reduced Downtime with Fast & Opportunity Charging



Multi-level Safety Protection

Cell-level, module-level, and system-level safety mechanisms greatly guarantee equipment and personnel safety for ultimate peace of mind.



Safest LFP Cells

Safer than any other lithium types of chemistries. Support higher chemical and thermal stability.



Independent Hardware Protection

Overcharging protection independent of BMS for cell temperature monitoring.



IP67 Ingress Protection

IP67 battery packs and PDU + IP65 DCB. Prevent water and salt spray corrosion.



HVIL on All Power Connectors

Designed to disconnect the circuit when necessary to prevent electric shock or other unexpected incidents.



Advanced BMS

More stable three-level architecture, ensuring a more reliable system operation.



Integrated Gas Extraction

Effectively prevent flammable gas entry into the battery and extract it quickly.



DNV Approved

Meet the highest industry standards for marine applications.

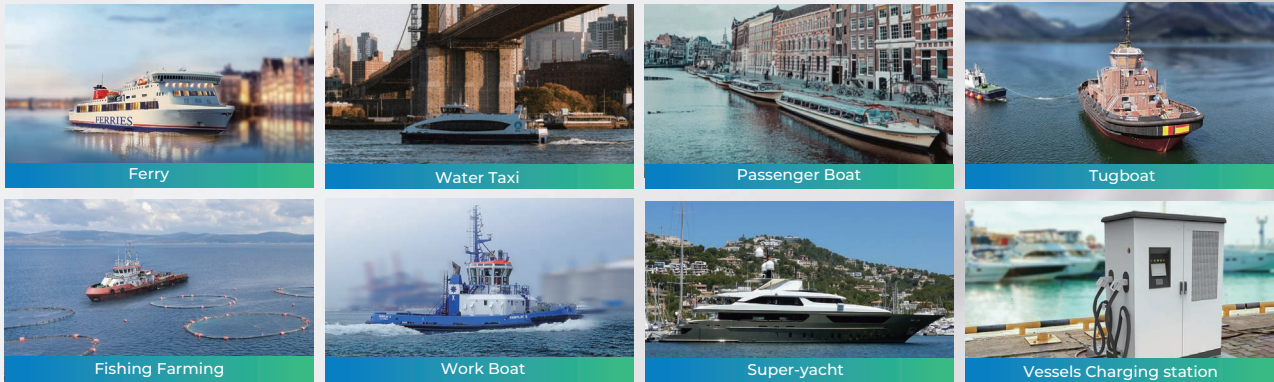


Others

Emergency stop, MSD protection, battery-level & PDU-level short-circuit protection, safety board, etc.



Applications:

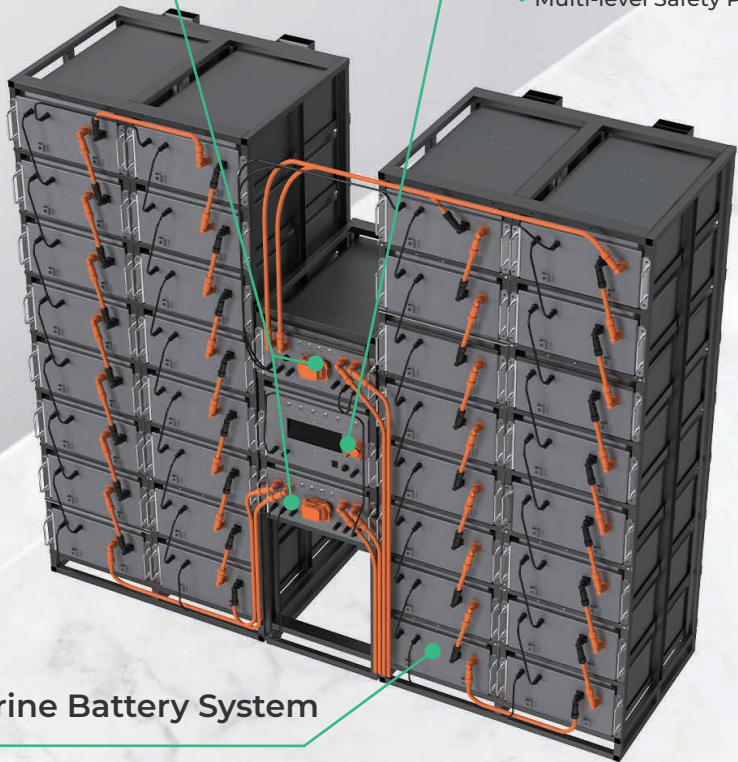


Power Distribution Unit (PDU)

- One PDU for One Battery String
- Integrated Design for Easy Installation
- Optimized Power Transmission
- Reduced Energy Loss

Domain Controller Box (DCB)

- Easy Management with 10-inch Friendly Interactive Interface
- Safe & Reliable BMS System
- Multi-level Safety Protection



High-Volt Marine Battery System

- Advanced LFP Technologies
- 100~1,000 V / 28~243 kWh to 2430 kWh, 32~278 kWh to 2785 kWh
- Multi-level Safety Protection
- DNV Approved

System Specification

Model	MBmax14.3H	MBmax16.3H
System Solution	1 C-rate	
Battery Module	51.2 V/280 Ah	51.2 V/320 Ah
Dimension (L x W x H)	800 x 465 x 247 mm	
Weight	112 kg	117 kg
System Voltage	102.4- 870.4 V	
Single System Energy	28.6-2437.1 kWh	32.7-2785.2 kWh
Total System Energy	2-100 Mwh by parallel single energy system	
Discharge/Charge Peak Rate,30s	1C/280 A, 14.3 kW	1C/320 A, 16.3 kW
Continuous Rate, One Complete Charge/Discharge	0.5C/140 A, 7.2 kW	0.5C/160 A, 8.2 kW
Discharge/Charge RMS Rate	0.35C/100 A, 5.1 kW	0.35C/110 A, 5.6 kW
Cooling	Natural Cooled	
Class Compliance	DNV, UN 38.3	
Ingress Protection	IP67	

Safety

Thermal Runaway Anti-propagation	Passive Cell-Level Thermal Runaway Isolation
Emergency Stop Circuit	Hard-wired: Local Emergency Stop on DCB; Remote Emergency Stop
Independent Safety Function	Fail Safe for Over Temperature on Single Cell
Short Circuit Protection	Fuse on Pack & PDU Level
Explosion-proof Valves	Metal Valves on Each Pack Backside, Easy Connect to Exhaust Duct

All pictures shown are for reference only and data are based on ROYPOW standard test procedures. Actual performance may vary according to local conditions. Only authorized personnel are allowed to operate or make adjustments to the batteries. We reserve the right to make revisions as well as product alterations and improvements at any time without prior notice.

