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ROYPOW Technology Co., Ltd.

Tel: +86 (0)752-327 9099

Email: sales@roypow.com
service@roypow.com
marketing@roypow.com

Web: www.roypow.com

Add: ROYPOW Industrial Park, No.16, Dongsheng South Road,
Chenjiang Street, Zhongkai High-Tech District, Huizhou City,
Guangdong Province, China

ROYPOW (USA) Technology Co., Ltd.

Tel: +1 512 688 5555 (Texas Office)

Email: sales@roypowusa.com

Service Support: +1 626 269 0547
Email: service@roypowusa.com

Web: www.roypow.com

Head Office: 5901 Triumph St, Commerce, CA 90040, USA

Texas Office: 2350 Campbell Creek Blvd #100 Richardson, TX 75082, USA

Florida Office: 277 Douglas Avenue, Unit 1004, Altamonte Springs, FL 32714, USA

Indiana Office: 5545 W Raymond St, Ste H Indianapolis, IN 46241, USA

Georgia Office: 1150 Cobb International Pl NW Ste E, Kennesaw, GA 30152, USA

ROYPOW Technology UK Limited

Tel: +44 (0) 7918 955 940

Email: sales.uk@roypow.com

Add: Regus Green Park, 200 Brook Dr, Reading RG2 6UB, UK

ROYPOW Battery Technology (Pty) Ltd

Email: sales.za@roypow.com

Tel: +27 71 434 3769

Add: 53 Lake Rd, Longmeadow Business Estate, Edenvale, 1609, South Africa

ROYPOW (Europe) Technology B.V.

Email: sales.eu@roypow.com

Tel: +31 702 001 114

Web: www.roypoweuropa.com

Add: Seattleweg 1, 3195 ND, Pernis, The Netherlands

ROYPOW Australia Technology Pty Ltd

Email: sales@roypowtech.com.au

Tel: +61 29185 0814

Web: www.roypowtech.com.au

Add: Suite 803a, 18 Orion Road, Lane Cove, NSW, 2066, Australia

ROYPOW Technology GmbH

Tel: +49 (0) 176 2358 8956

Email: sales.de@roypow.com

Web: www.roypow.gmbh

Add: Rosa-Parks-Straße 4, 64295 Darmstadt, Germany

ROYPOW株式会社

Tel: +81 090 7092 6969

Email: info@roypow.co.jp

Web: www.roypow.co.jp

Add: 〒271-0094 千葉県松戸市上矢切299-7

ROYPOW Technology Co., Ltd (Korea)

Tel: 1555-2016

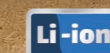
Email: sales.kr@roypow.com

Add: 2405, GIDC Gwangmyeong station A Dong, 43 Iljik-ro,
Gwangmyeong-si, Gyeonggi-do, Korea



High-Voltage **200~1,000 V** Marine Battery System

Unmatched Safety, Efficiency,
Reliability, and Sustainability



sales@roypow.com
www.roypow.com



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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
190+ R&D People
105,000 m² Headquarters Floor Area
2,500 m² Testing Center
171 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
 IEC 62619
 EN 62477, EN 62040, (EU) 2023/1542, EN 62109-1, EN 62109-2

UL **EMC** FCC, IEC/EN 61000-6, BS EN IEC 61000-6
GRID **Functional Safety** IEC 60730, ISO 13849-1
CB **Transport** UN 38.3
CE **RoHS** 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.

- Fully Automatic Production Lines
- BMS, PCS, EMS All Designed in House
- All-round Testing
- Advanced MES System

Global Sales and Service Network

- Timely Delivery
- Hassle-free After-sales Service
- Fast Response Technical Support

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
- 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

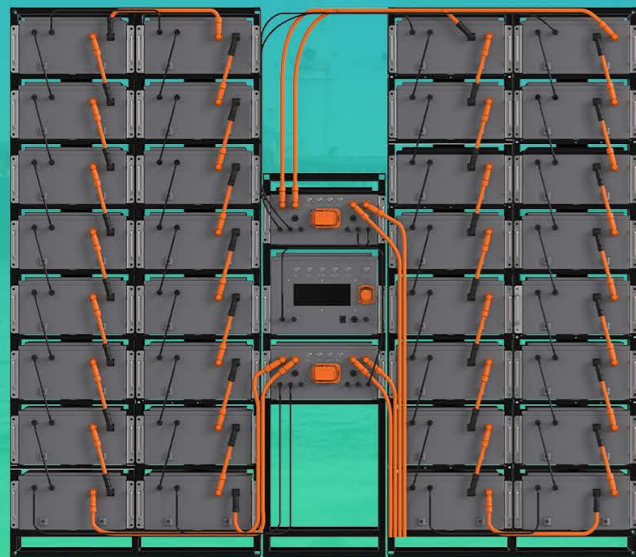
- ✓ Up to **17** PCS Batteries per String
- ✓ **200 ~ 1,000** V High Voltage per String
- ✓ **70 ~ 243** kWh High Capacity per String
- ✓ Up to **2,430** kWh High Capacity in Parallel

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.



Advanced BMS

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



Independent Hardware Protection

Overcharging protection independent of BMS for cell temperature monitoring.



Integrated Gas Extraction

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



IP67 Ingress Protection

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



DNV Approved

Meet the highest industry standards for marine applications.



HVIL on All Power Connectors

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

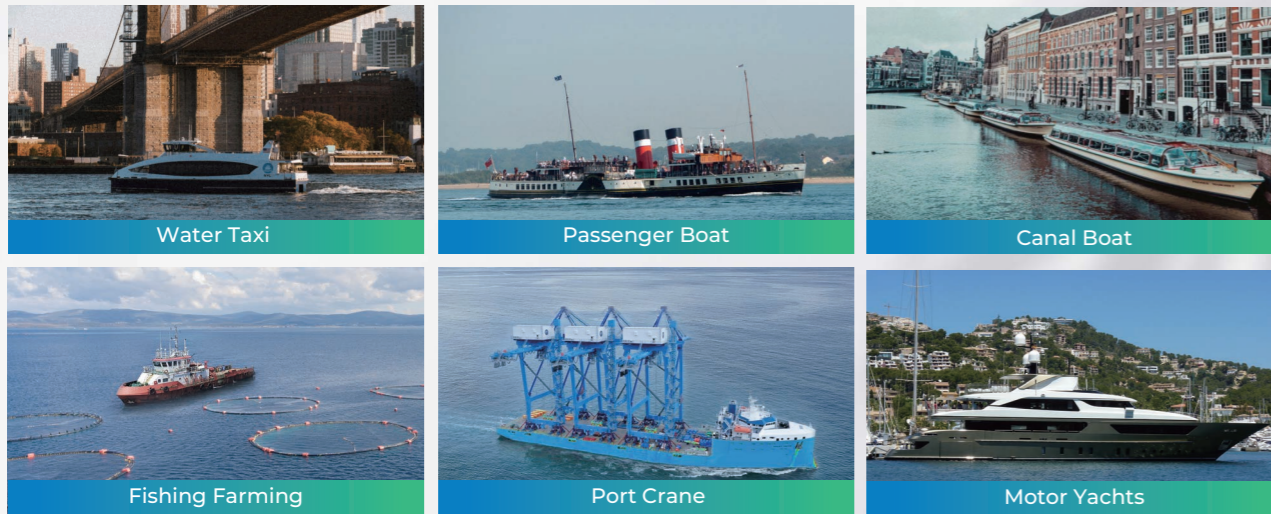


Others

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



Applications:

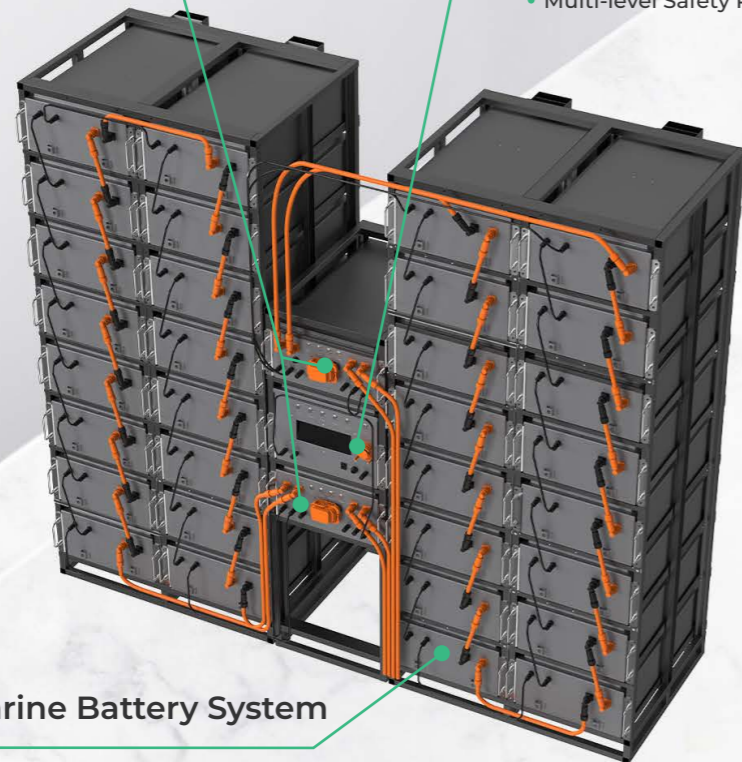


Power Distribution Unit (PDU)

- 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
- 200~1,000 V / 70~243 kWh to 2,430 kWh
- Multi-level Safety Protection
- DNV Approved

System Specification

Battery Pack	16S1P
Nominal Capacity	280 Ah
Nominal Energy	14.336 kWh
Nominal Voltage	51.2 V
Operation Voltage Range	40-58.4 V
RMS Current, Power	0.35C/100 A, 5.1 kW
Peak Current, Power	1C/280A, 14.3 kW, 30s
Weight	112 kg
Dimension (L x W x H)	800 x 465 x 247 mm
Cooling	Air Cooled
Class Compliance	DNV, UN 38.3
EMC	IEC 61000-4, CISPR 16-2
Ingress Protection	IP67
Cycle Life	6000 Cycles, 80% SOH
Thermal Runaway Anti-propagation	Passive Cell-Level Thermal Runaway Isolation
Operation Temperature Range	-20~55°C
Charging Temperature Range	0~55°C
Storage Temperature Range	0~55°C, Recommended 15~35°C
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

PDU

Operation Voltage	24 V, 10 A
Dimension (L x W x H)	800 x 465 x 247 mm
Weight	30 kg
Ingress Protection	IP67
Included	BCU, Fuse, Shunt, Positive & Negative Relay, Pre-charge Circuit, MSD, Alarm Light, B+, B-, P+, P-

DCB

Monitoring Channel	Maximum 10 Strings
LCD Display	10-inch True Color LCD Screen
Alarm Mode	Sound and Light Alarm, and Display the Alarm Content, the Fault Node Output Closed
Communication Interface	3 Channels LAN3 Channels Isolation CAN5 Channels Isolation RS4852 Channels USB
Event Log Data	100,000 Event Records, including Exception Class, Occurrence Time, Protection Action
Operating Voltage Range	DC 9~32 V
Power Consumption	≤10 W (Initial State When the Screen is Lit)
Dimension (L x W x H)	352 x 465 x 305 mm
Weight	10 kg
Ingress Protection	IP65

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.