

New energy ship EPC

Power system integration for new energy ships

► System overview

Guorui Technology specializes in the research, development, and manufacturing of new energy marine power system assemblies. With capabilities in independent integration and matching design of marine power systems as well as the research and development of key system equipment, the company provides customers with a one-stop solution for power assembly and complete vessel EPC delivery.

► Pure electric technical path Pure battery-powered DC grid electric propulsion system

► Technical features

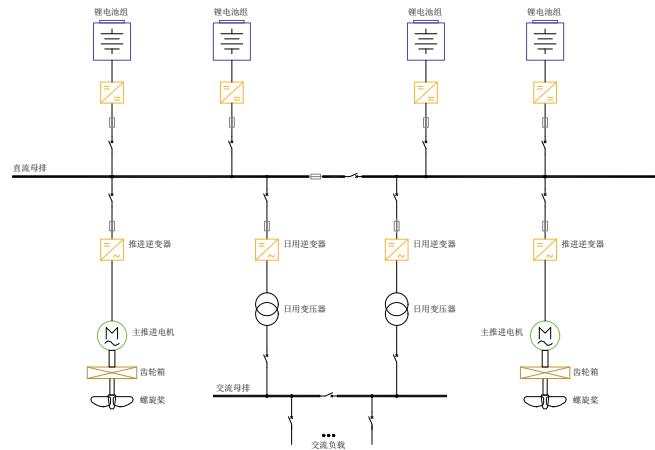
The entire ship's electrical load is powered by the battery system, ensuring green and environmentally friendly operation with zero emissions;

In the power system, there are relatively fewer moving components, which can effectively reduce vibration and noise, thereby enhancing the comfort of the ship;

The system possesses high dynamic response capability and is adaptable to various complex navigation conditions;

The power system eliminates a large number of auxiliary systems for traditional energy sources, facilitating intelligent management and making operation simpler and more convenient;

DCDC is compatible with wide voltage platform inputs, perfectly fitting the battery swapping application.



► Applicable ship types

The product applies to small and medium-sized inland river pure electric cruise ships, transport ships, government vessels, ferries, etc.

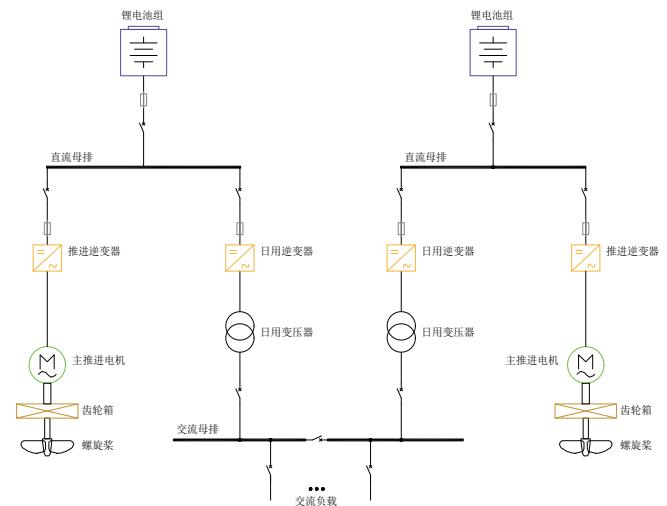
► Pure battery-powered distributed electric propulsion

► Technical features

The entire ship's electrical load is powered by the battery system, ensuring green and environmentally friendly operation with zero emissions;

The power topology structure is simplified, with the battery system directly outputting power, connecting to both the propulsion inverter and the domestic inverter;

The frequency conversion cabinet features a distributed design, allowing for flexible layout and small floor space.



► Applicable ship types

Applicable ship types include small inland river pure electric sightseeing boats, government vessels, etc.

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► Hybrid technical path

Hybrid DC grid electric propulsion system (series type)

► Technical features

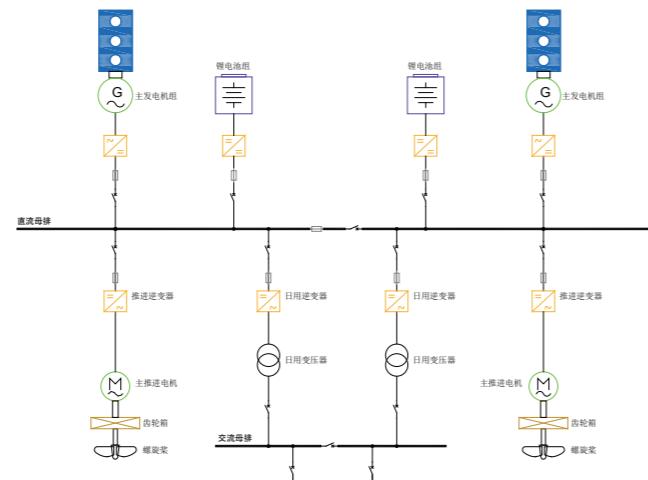
The generator set and the lithium battery pack are connected in parallel via a DC busbar;

The system can achieve generator operating conditions, battery operating conditions, and hybrid operating conditions, meeting different application scenarios of ships through energy management system;

When there is excess energy in the grid, energy storage can be implemented to further enhance the energy efficiency of ships.

► Applicable ship types

The product applies to medium and large cruise ships, tugboats, government vessels, transport ships, etc.



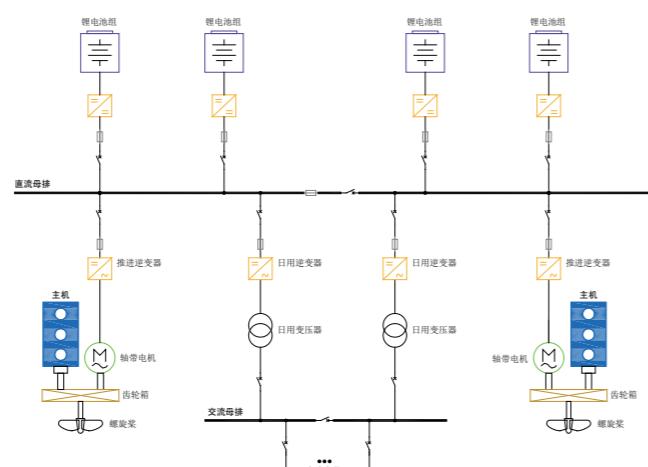
► Hybrid DC grid electric propulsion system (parallel type)

► Technical features

The organic integration of two forms of energy: main engine propulsion and lithium battery pack electric propulsion;

The system achieves engine operating conditions, battery operating conditions, and hybrid operating conditions, meeting different application scenarios of ships through energy management system;

The system supports multiple operation modes including PTO/PTI/PTH.



► Applicable ship types

The product applies to transport ships, fishing boats, inland river cruise ships, ferries, large sightseeing boats, etc. operating in specific navigation areas.

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► System specifications

Power station capacity	300kW ~ 4000kW
Voltage class	750V ~ 1000V
Battery capacity	500 ~ 20000kWh
Propulsion power	200kW ~ 2000kW

► System composition

Power generation system: methanol generator set, traction battery pack;

Power distribution system: DC switchboard, AC switchboard, DC shore power device, AC shore power device, transformer, insulation monitoring and positioning system;

Propulsion system: inverter, propulsion motor, shaft motor, propeller;

Control system: EMS energy management system, propulsion control system, monitoring and alarm system, and intelligent ship service platform.

► Key equipment



► Test platform

