

Customized concepts for power supply systems and on-board networks on ships.

Our products



E-MS 
A Company of the RENK Group

EXPERTS FOR E-POWER

Efficiency

Save fuel and reduce emissions

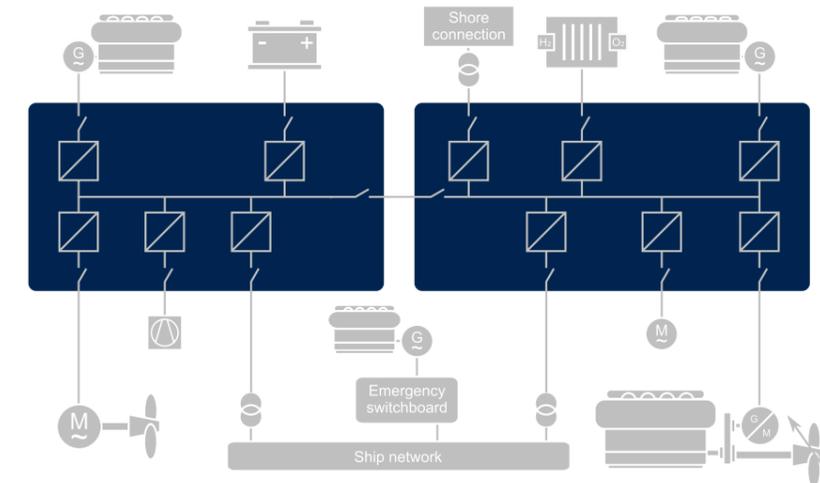
Simplicity

High flexibility and easy installation

Performance

Fast loading and high safety in on-board operations

Ultra-precise regulation of all electrical energy. Take us on board.



The **E-PP** is an intelligent combination of innovative and simultaneously tried and tested components from different manufacturers based on converter technology.

E-PP – Electric Power Pack: The intelligent power generation and supply system.

Our patented ship's network and propulsion solution enables ultra-precise regulation of all electrical energy used for the on-board network and propulsion, particularly for loads with significant, dynamic fluctuations. All components required for our systems are produced by our long-term international partners according to the specifications of our engineers and technicians.

This results in functional and reliable modules, which are installed in precisely fitted control cabinets and which are wired with all components, after detailed functional checks on board. Detailed circuit diagrams and 3D design drawings ensure optimal installation on board of your ship.

Switchgear Construction: Planning and projecting of modularized cabinet systems.

The well thought-out construction, based on 3D drawings, is carried out in close coordination with the manufacturers of all components and the workshop technicians, who are responsible for the installation and wiring of the components in the E-PP cabinet system.

Detailed plans for the wiring of the interfaces make the work of integrating the E-PP cabinet systems on board much easier for the shipyard and commissioning engineers. This results in an extremely compact E-PP cabinet system that saves space and weight on board of the ship.

Easy access during servicing and space-saving layout for cabinet systems due to our modular E-PP solution.



EXPERTS FOR E-POWER.

Electricity offers many good benefits when combining efficiency, economy and ecology in ship operations. Electricity is the specialty of E-MS – not only for technical concepts, yet also as a product and system supplier. Exactly to the extent you need for your project. We have been doing so for almost two decades. E-MS is part of the RENK Group, the world's leading specialist for pioneering solutions to control extreme forces throughout the drive train. For our customers, this results in considerable synergies in the design and realization of innovative and custom-fit propulsion systems on board ships of all types and sizes.

The DC link with high flexibility for power generation and consumers.

The E-PP has many advantages compared to a diesel-electric system.

For power generation, we prefer to use asynchronous generators in combination with converters and a common DC link. In order to guarantee the necessary redundancy during on-board operation, the E-PP provides two separate converter units, which are connected via a DC coupling system and which can also be operated independently of each other.

Synchronization of the diesel generator sets is not required - a major advantage compared to conventional three-phase supply systems.

The combustion engines (of whatever type) for the generators can be operated at any time and at any speed with their best possible efficiency according to the power demand.

Fast loading

The generators can take over the load within just a few seconds, as no time is needed for synchronization. A clear advantage in terms of safety during on-board operation, particularly with extreme fluctuating loads.

Low complexity

In contrast to the diesel-electric system, the E-PP has a significant advantage in terms of space-saving arrangement in the ship, while being less complex in structure and application.

Space saving

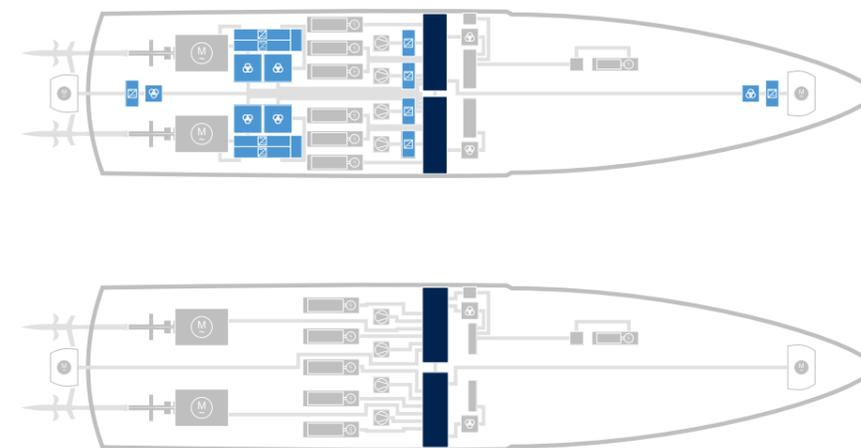
Big advantages for space and weight requirements

Flexibility

Wide range in terms of electrical power generation



More about the E-PP - Electric Power Pack
www.e-ms.eu/en/products/e-pp



The comparison between a conventional diesel-electric propulsion system (upper drawing) and our E-PP concept (lower drawing) clearly shows the advantages of our innovative power generation and supply system for on-board networks.

Differences between the E-PP and a conventional diesel-electric system.

The E-PP wins not only in terms of efficiency and high operating safety, yet also, has a significantly reduced space requirements and lower weight. This is clearly illustrated by the comparison shown above.

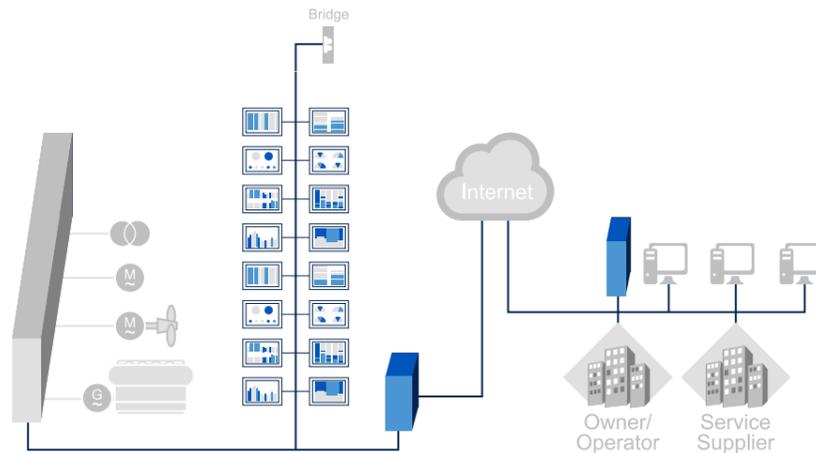
The space requirement for a diesel-electric variant with a three-phase current distribution is relatively high (as is also the case with a purely diesel-mechanical solution). The arrangement of the diesel engines is, however, independent of the shaft systems, yet the electrical components for three-phase current

distribution take up valuable space in the ship. In addition, it requires a complex control and automation system and leads to a high amount of interfaces and high costs for wiring.

The E-PP consists of asynchronous generators, a space-saving cabinet system with modular high-performance converters, a common DC link and modular converters, which supply the general on-board network and control/propulsion systems. It is highly integrated and thus significantly reduces the amount of components and interfaces.



E-RD – Remote Diagnostics is the highly integrated diagnostics tool for ship operation.



All data at one click.

The wide range of data enables you to display a variety of visualizations and reports. In order to make this possible, our E-RD correlates all the collected data to produce meaningful and relevant information, which can be retrieved at any time.

The E-RD provides you with innovative and cost-reducing applications.

They range from remote diagnosis to condition based maintenance and forecasting of incidents and operating status based on the recorded and analyzed data. Optimize all of the on-board operations of your fleet from dry land – easily and cost-effectively.

With the E-RD, we have developed a system, which enables you not only to collect extensive information about the status of all important assemblies on board, digital and in real time, yet also to analyze it methodically.

Possible examples are the entire generator operation with all connected consumers, as well as nautical data and parameters from the heating, ventilation and air conditioning system.

All information from the conventional noon report. As the user, you can define the scope of the collected data and analyses as well as the access options.

On request, E-MS will take care of the analysis, processing, presentation and transmission of all previously jointly defined data from your ship operation as a service for you. The highest data protection standards are a matter of principle for us.

Detection

Operating faults can be detected immediately

Monitoring

Collect information about all important assemblies



More about the
E-RD – Remote Diagnostics
www.e-ms.eu/en/products/e-rd

Expertise and independent advice from the initial conception to running operation.

Service and consulting: On the right course with E-MS know-how.

E-MS uses the team's expertise not only for its own product development, but also to offer advice on all aspects of power generation and supply on board of ships and offshore platforms.

Our activities for shipping companies, shipyards and suppliers cover all areas, that use electrical energy:

From propulsion systems to large consumers of on-board operation to the smallest digital components.

For example, we define the system topologies and the associated interfaces for complex on-board networks.

With our solutions, you can benefit from maximum cost efficiency, the most efficient use of energy, maximum environmental sustainability and low investment and maintenance costs.

Our services

- Engineering services, commissioning and after-sales service for the maritime industry
- Definition of system topologies and interfaces for on-board networks
- Concepts for on-board systems using standard components and planning workflows
- Creation of circuit diagrams and control cabinet designs as well as service specifications for complete systems, components, engineering and commissioning services
- Checking and evaluation of technical specifications and proposals from system suppliers

An extract of our references for E-MS products and consulting services.

- Series of over 60 river cruise ships with diesel-electric propulsion (newbuild)
- Series of four 85 meter mega yachts with innovative diesel-electric propulsion systems (2 x 1,600 kW, consulting)
- 140 meter plus mega yacht with innovative diesel-electric propulsion system (newbuild)
- Freshwater tanker with diesel-electric propulsion and on-board water treatment system (consulting)
- Series of four container vessels (retrofit)
- Various oil and offshore platforms (consulting)
- SWATH research vessel with innovative diesel-electric propulsion system (newbuild)

E-MS GmbH

A Company of the RENK Group
Schellerdamm 22-24
21079 Hamburg
Germany

Phone: +49 40 3037528-0
Fax: +49 40 3037528-100
Email: info@e-ms.eu
Website: www.e-ms.eu

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