



Marine Power & Propulsion

Cutting-Edge Systems
for Marine Performance

induction by Gamesa

Generators & Motors *Driven by Nature*

High-Performance Propulsion Motors & Main Generators for Demanding Marine Applications

Gamesa Induction offers a comprehensive range of marine-grade electrical solutions engineered for durability, efficiency, and reliability in harsh maritime environments.



■ Main Generators & Variable speed generators

Gamesa Induction synchronous generators are built for continuous, dependable power generation aboard marine vessels and offshore platforms. Ideal for both main power plants and auxiliary applications, these medium-speed, medium-voltage gensets offer exceptional reliability, fuel efficiency, and long service life.

■ PTO/PTI Shaft Generators

Converts mechanical shaft power into electrical energy, reducing fuel consumption and emissions by optimizing onboard power generation.

■ Main Propulsion Motors

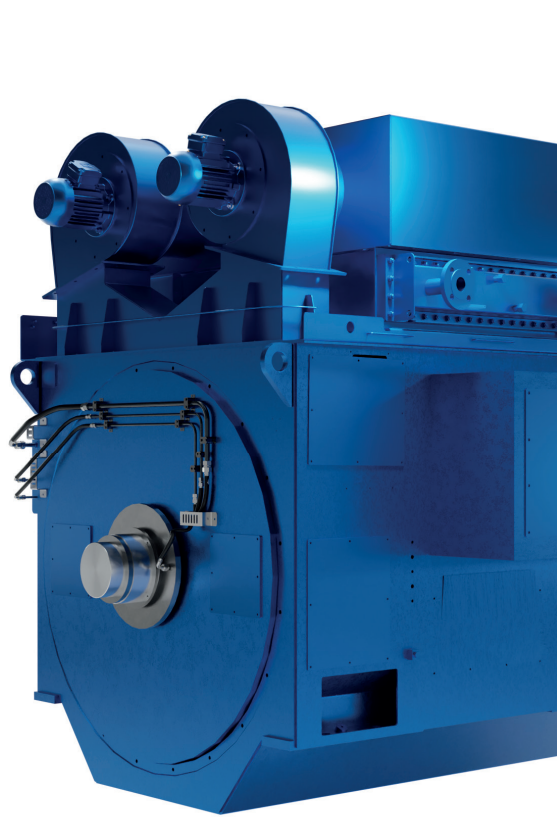
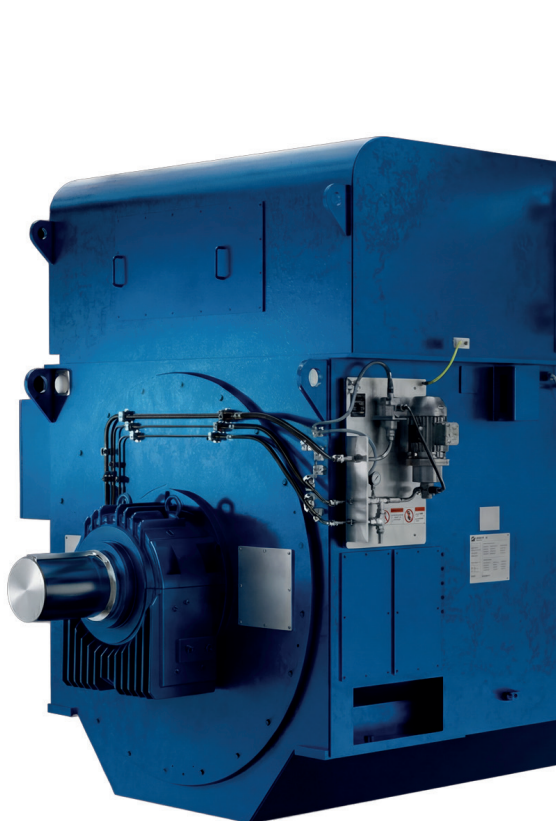
Our propulsion motors are designed to deliver robust performance, smooth operation, and high efficiency, ensuring optimal maneuverability and propulsion control for all types of vessels. With modular configurations and customizable features, these motors meet the most stringent marine standards.

■ Thruster Motors

Motors ready for variable speed drives, operating at the most efficient speed/propeller pitch combination.

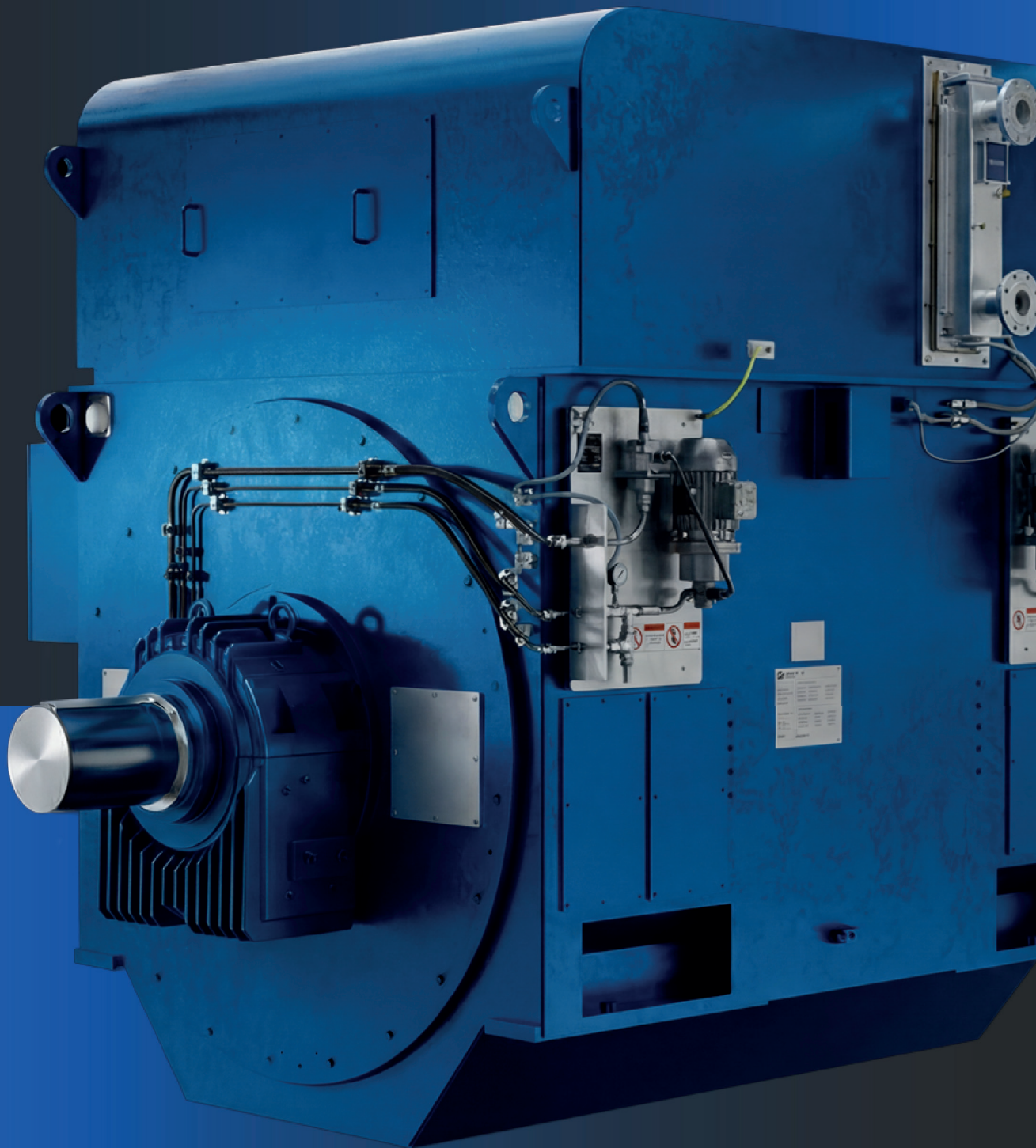
Robust design with PM and squirrel cage technologies.

Product range



SYNCHRONOUS GENERATORS	ASYNCHRONOUS MOTORS	PERMANENT MAGNETS	SYNCHRONOUS GENERATORS	PERMANENT MAGNETS
Diesel Gensets Main /Aux	Propulsion & Thruster Motor	Propulsion Motor	Shaft Generator PTO/PTI	Shaft Generator PTO/PTI
Power range 3 MVA to 40 MVA	Power range 1 MW to 15 MW	Power range Up to 15 MW	Power range 1 MW to 8 MW	Power range 1 MW to 8 MW
Voltage range Up to 15 kV	Voltage range Up to 15 kV	Voltage range 400 V to 6 kV	Voltage range 690 V to 6,6 kV	Voltage range 690 V to 6,6 kV
Protection level Up to IP56	Protection level Up to IP56	Protection level Up to IP56	Speed From 40 rpm	Speed From 40 rpm
Insulation Up to H	Insulation Up to H	Insulation Up to H	Insulation Up to H	Insulation Up to H

Main Generators



- Designed to minimize noise and vibration with experience in marine standards.
- Adaptability of x''d values, efficiency, and dimensional limits on a project basis.
- Sleeve bearing automatic lubrication equipment and slow-turning jacking system.

From 400 V
to 15000 V

Up to
45 MW

Parameter	Specification
Main Generators	
Rated Power	2,5 – ≤ 40 MVA
Power Factor	0,8 – 0,9
Rated voltage	Up to 15 kV
Voltage tolerance	±10% of the rated voltage
Frequency	50 Hz, 60 Hz
Rated Speed	428 to 1500 rpm / 514 to 1800 rpm (4 to 14 poles)
Overspeed	120% 2 min
Overload capacity	10% for 1 h each 6 hours or 50% for 2 min, 1.5 times the rated current for 30 s
Xd''	Specifically designed to limit the short circuit current
Insulation Class	H or F
Technology	VPI
Sustained short circuit current	3 x rated current for 10 s
Horizontal mounting	IM1001, IM1101, IM7311...
Ingress protection	IP44 or IP55 (IP56 up to lower side of shaft)
Main Terminal Box	In cooler housing or as separate terminal box
Cable entry	MCT frame with inserts or cable glands
Cooling	Air/Water with double tube, cooler on top or at the side
Insulation	Insulated sleeve bearings including a jack-up oil pump for slow speed services
Secondary excitation	PMG Excitation
Emergency flaps	(IP20) with 80% power without water cooling
Efficiency	Values with ad hoc designs to meet project-specific needs
Voltage drop compensation	Accuracy of AVR ± 1.5% with recovery time from ± 3% within 1.5 s
Parallel Operation	With properly dimensioned damper winding
Limited voltage drop when connecting loads	According to customer requirements
Rotor	Salient pole or cylindrical pole rotor
Marine Certification	DNV, LR, ABS, CCS...
Special Certifications	ICE, Icebreaker, POLAR, SILENT...
Emergency designs	Sets with higher angle of inclination (± 25 degrees)

In-Line Shaft Generators

Reliable partner
for Marine PTI/PTO
solutions

They improve fuel efficiency by using the main engine to generate electricity (PTO) or by boosting propulsion power torque (PTI/hybrid). The intermediate shaft is the part of the main shaft connected to the shaft generator.



■ Energy efficiency

Converts mechanical shaft power into electrical energy, reducing fuel consumption and emissions by optimizing onboard power generation.

■ Low Maintenance & Reliability

Built with durable components and proven technology to ensure long service intervals and dependable operation in harsh marine environments.

■ Seamless integration

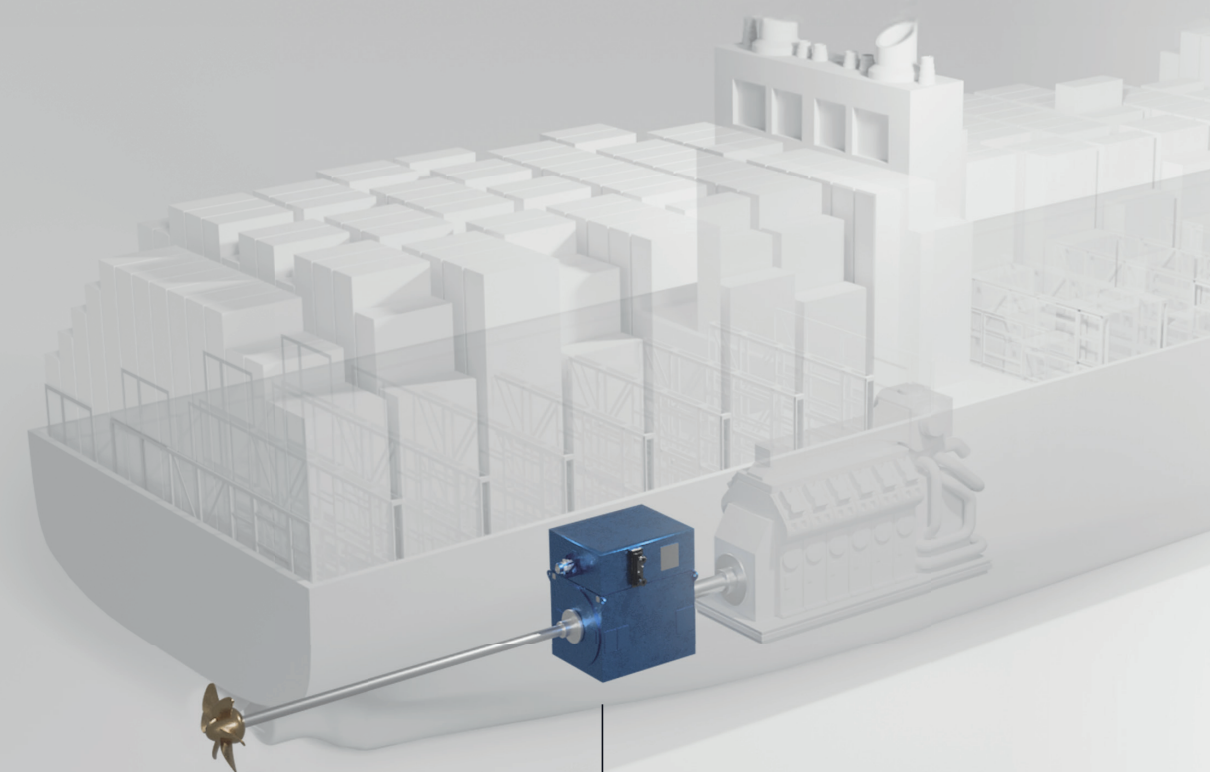
Designed to integrate smoothly with the ship's propulsion system, providing stable and continuous power without impacting vessel performance.

Permanent Magnet Synchronous Generator (PMSG)

NdFeB neodymium magnets are mounted in the rotor for excitation

Electrically Excited (EESG)

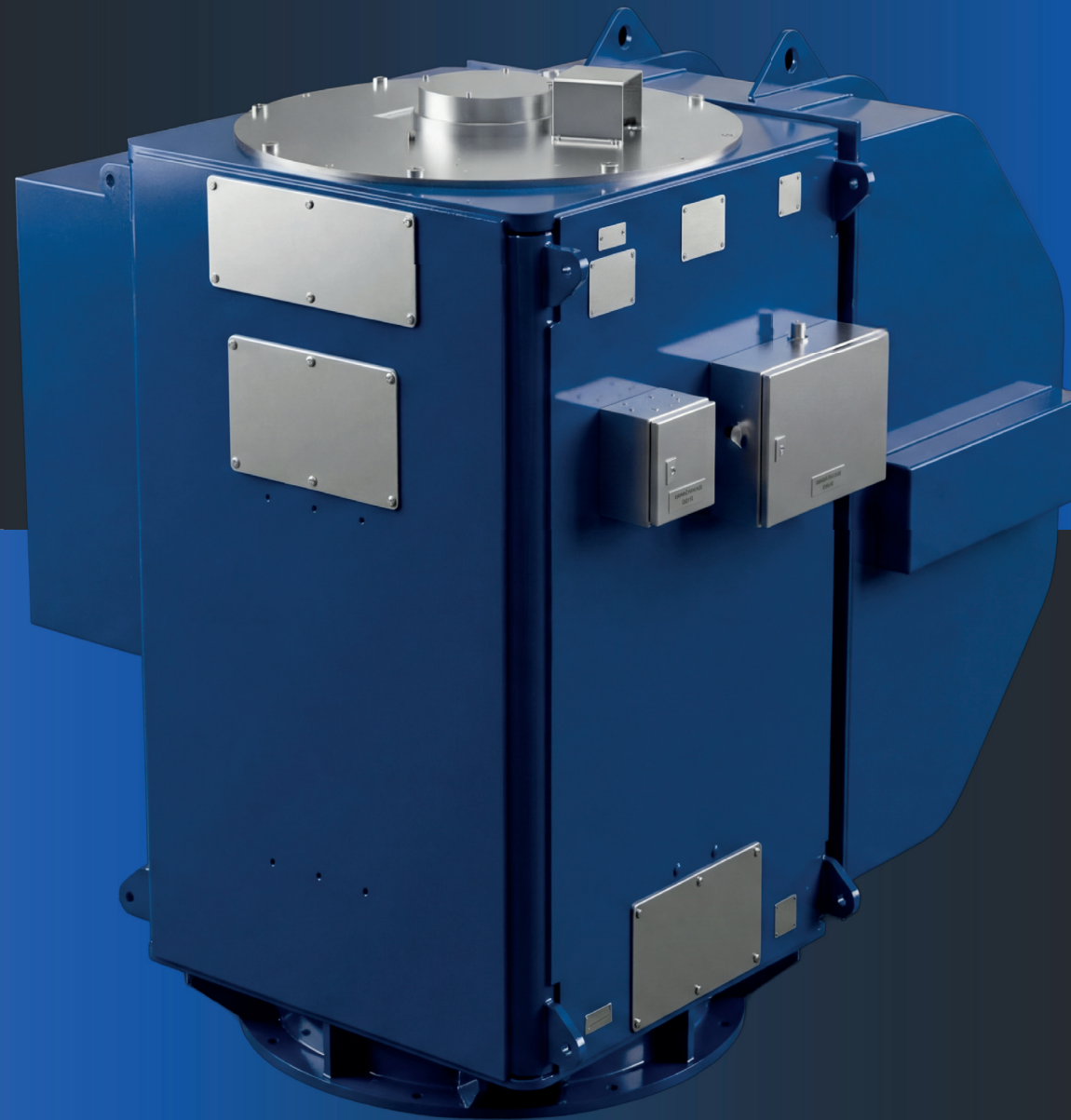
Synchronous salient pole design with excitation via Slip Rings



Shaft
Generator

Thruster Motors

Motors designed for variable-speed drive operation, enabling operation at the most efficient speed and propeller pitch combination.



Flexible

100% tailor-made solutions to special projects including high performance for naval applications.

Flexible design with a wide range of options and full integration with drives and generator.

A strong engineering design team and flexible production processes allow products to be 100% adapted to the customer's needs.

Assistance

An experienced technical support team capable of analyzing the root cause of a fault on site and determining the corrective action required.

Available wherever the asset is located. We manage the necessary door-to-door transport of the machines to be repaired.

Highest reliability

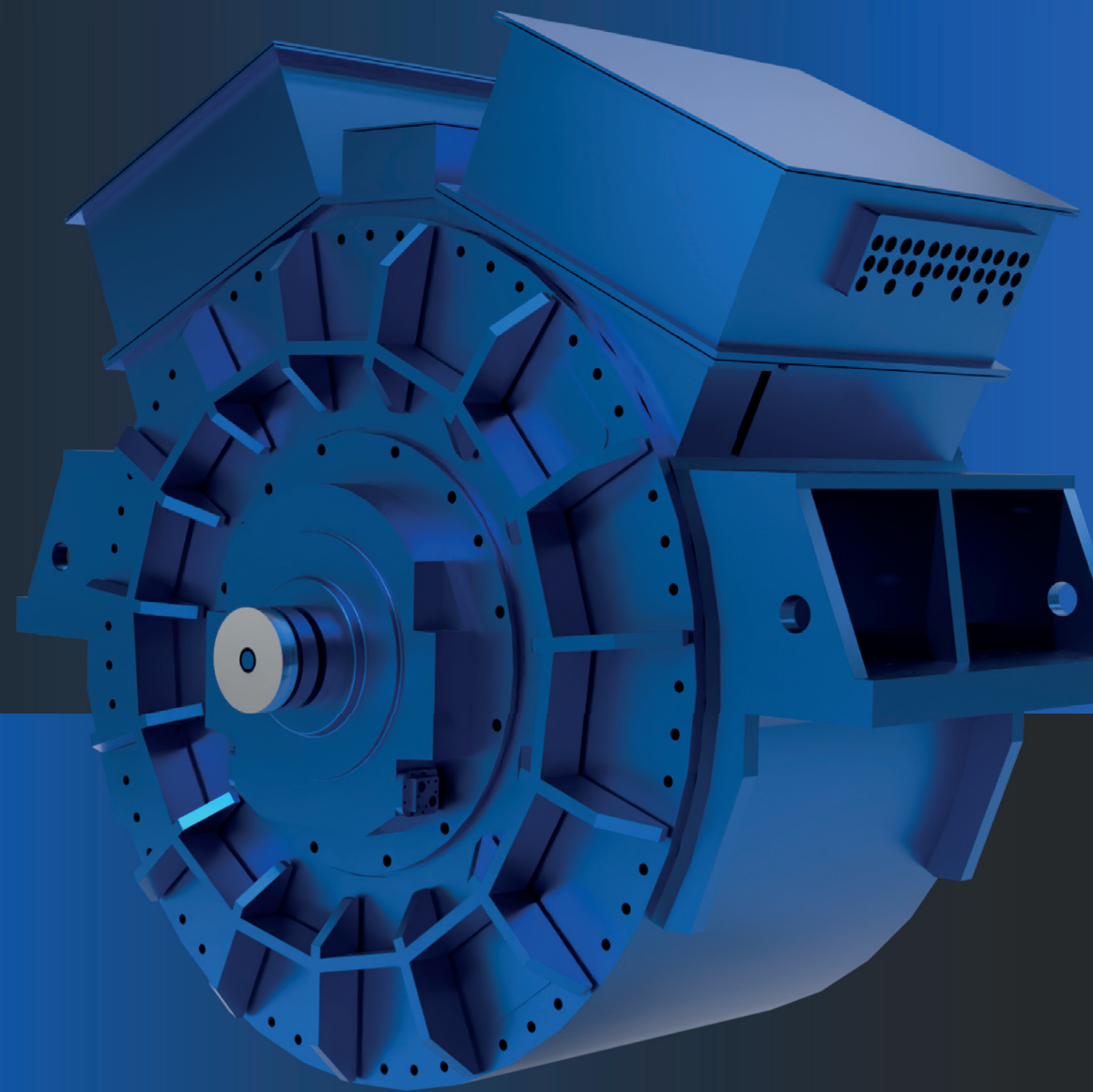
Robust design PM and squirrel-cage technologies

PM technology: up to 20% lighter with higher efficiency

Marine Propulsion Motors

Propulsion Motors
for Marine Applications

Tailor-made solutions, including
high-performance designs for
naval use.



■ High Torque at Low Speed

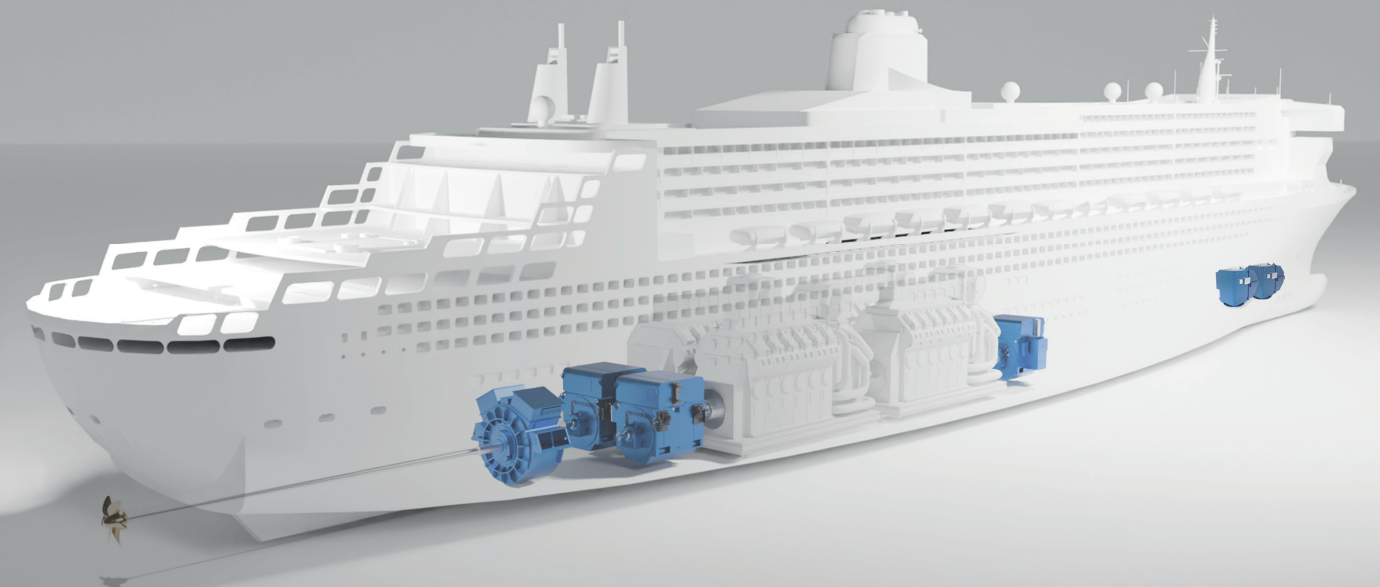
Ensures powerful and efficient thrust for smooth vessel maneuverability and control.

■ Energy Efficient Design

Reduces fuel consumption and operational costs through optimized electrical performance.

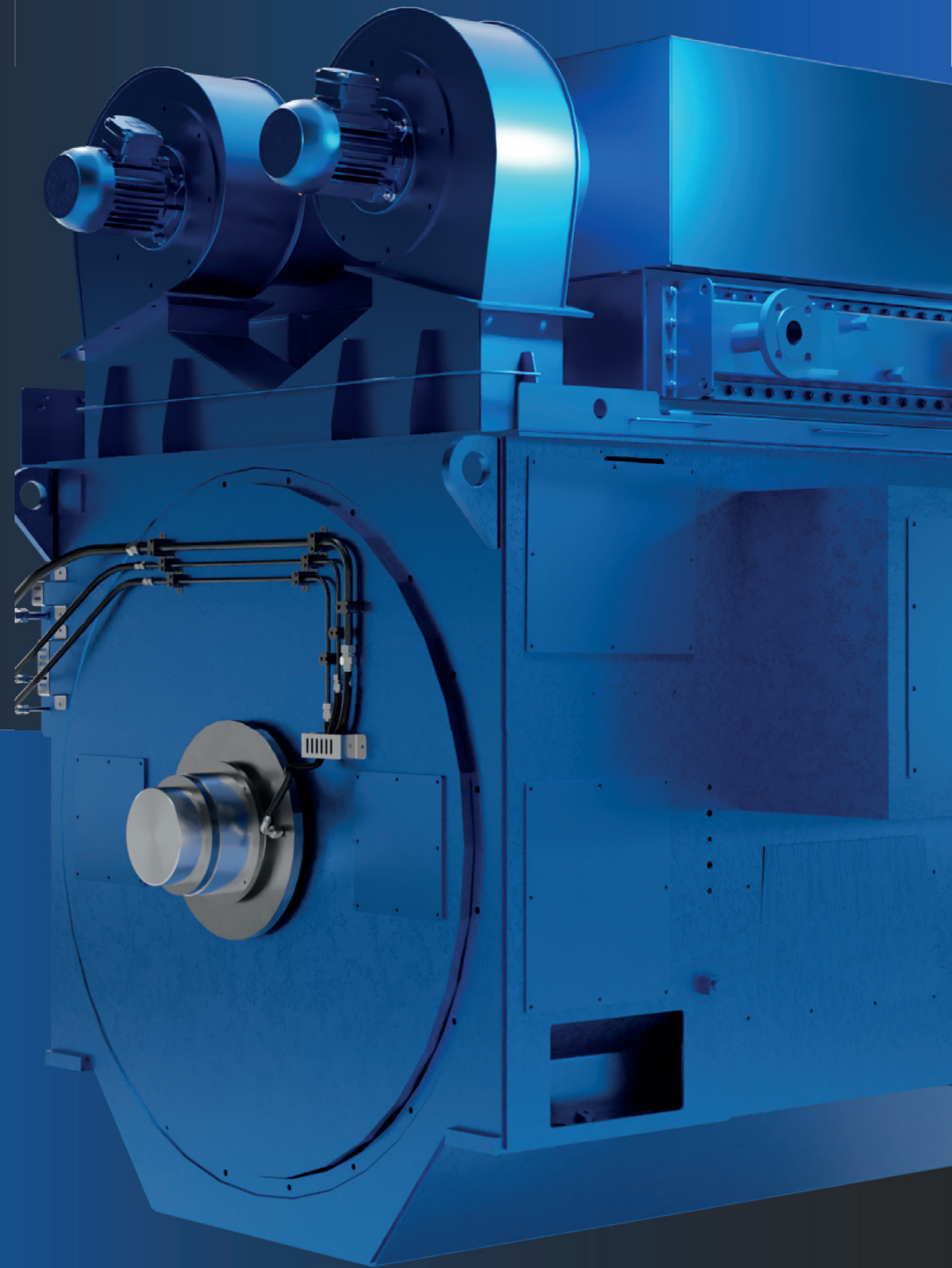
■ Rugged Marine Construction

Built to endure harsh marine environments with corrosion-resistant materials and vibration-resistant design.



Variable Speed Generators

AC and DC marine grids upgrading



■ Performance

The generators are purpose-built, brushless and synchronous, offering a wide range of frequencies and voltages for diesel, dual-fuel or gas-powered vessels. Variable-speed gensets dramatically reduce fuel consumption at low loads compared to fixed-speed alternatives.

■ Global Efficiency and Consumption Reduction

Simplifies start-up and reduces standby start time.

Connected to the grid via a diode rectifier (LV option) Salient pole rotor is preferred due to stability risk. Suitable for upgrading of AC and DC marine grids.

■ Technology

Reduces fuel consumption and environmental impact by reducing speed at any load below rated power.

Noise and vibration are significantly reduced. This includes engine room and structure-borne noise transmitted to accommodation and other areas of the vessel.

Ships operating at low loads experience the greatest improvements in the working environment.

Test benches

Motors ready for variable-speed drives, operating at the most efficient speed and propeller pitch combination.

Electrical and mechanical routine testing

Voltage and frequency adjustable

Back-to-back method

Testing P,Q extreme points

Up to 45 MW

Generator Test Benches

- Benches for horizontal and vertical machines.
- Testing at different voltages 400 - 13800 V.
- Cooling system for air and water systems.

50 Hz & 60 Hz microgrid

Motor Test Benches

- Testing at different voltages 400 - 13,800 V.
- Load test by a bi-frequency method.

Our facilities



Overhauling Services

Experience

Over 95 years of experience in designing, manufacturing and repairing electrical machinery.

We provide experienced technical support in the design and repair of both our own and multi-brand machines, serving a wide range of industries.

Service

An experienced technical support team capable of analyzing the root cause of a fault on site and determining the corrective action required.

Available wherever the asset is located.

We manage the necessary door-to-door transport of the machines to be repaired.

Quality

1200 m² dedicated exclusively to overhaul services.

Same quality controls and processes used in both machine repair and new machine manufacture.

This ensures optimum results and extends the life of the repaired machine, reducing OPEX.

Why Gamesa Induction?

People

We are people driven by nature. We are deeply proud to be part of something truly significant. Together, we are not just building a more sustainable world; we are creating a brighter future for generations to come. As part of an international family united by a shared vision, we strive for one powerful goal: a better world for all.

Competitiveness

Gamesa Induction guarantees that it will meet the technical requirements of every project at an attractive price.

Flexibility

Full product customisation, allowing us to adapt to each customer's needs. This means that each and every project becomes a tailor-made solution with high added value.

Decades of expertise

Gamesa Induction has more than 95 years of experience in the manufacture of electric generators and motors and 25 years of expertise in the development of its own power electronics technologies.

Technological innovation

For projects where reliability and performance under low-load conditions, we offer permanent magnet generators. By combining these generators with suitable power electronics systems, we can offer an integrated power generation system that does not require speed control. This significantly increases the return on investment from limited hydraulic resources.

Technical support

Gamesa Induction provides all the required support during the installation and commissioning to ensure the optimal machine operation, including the necessary validation, quality control and project management procedures.

Multiple communication channels

We provide our customers with multiple communication channels to respond quickly to requests for information, service and support. Direct access to our multidisciplinary teams across different countries is guaranteed, either through the usual contact methods or through our website.

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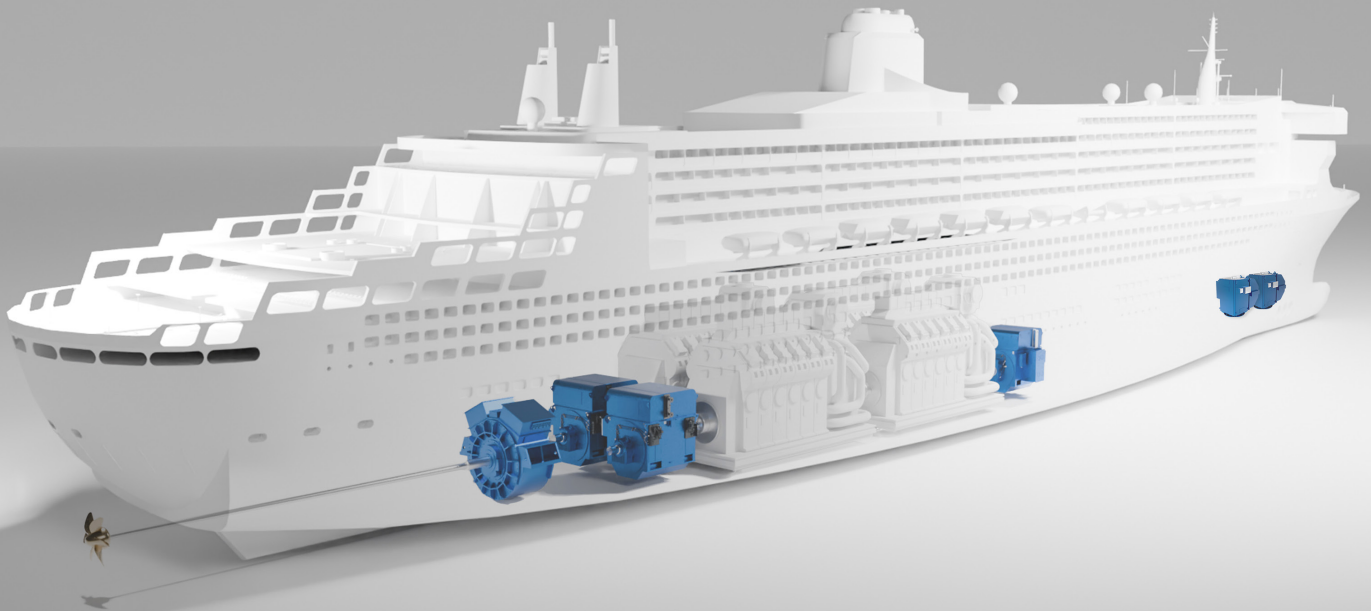
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March 2026