

Nidec

Conversion

Marine



Power Innovation to
navigate the Future

Nidec Conversion has more than a century of experience in marine electrical systems and is able to trace its involvement back to early naval electromechanical systems

Nidec Conversion has also been at the forefront in the development and manufacture of electrical variable speed technology from the advent of modern power electronics during the mid 1900s - providing flexible, versatile and efficient captive power solutions that have revolutionized offshore oil exploration and marine propulsion systems.

Today, this deep understanding of marine applications allows us to create custom solutions for electrical power & propulsion systems, automation & dynamic positioning, as well as on-board power generation and distribution that benefit our customers by offering high levels of flexibility and reliability - meeting even the most stringent marine requirements.



Join us on the Journey to Excellence

Discover how our innovative solutions can transform your marine experience.



DESIGN FOR NAVY

For over 90 years, the **Amerigo Vespucci** has represented the spirit of the Italian Navy and the excellence of national craftsmanship. Today, this iconic vessel continues its journey with advanced **electric propulsion technology**, proudly developed and manufactured by Nidec in our Monfalcone and Cinisello Balsamo facilities.

At the heart of this innovation is a custom-designed **dual-power induction motor** powered by variable frequency

drives, engineered for maximum reliability and minimal acoustic impact ensuring silent and efficient navigation.

Our design philosophy is simple: create solutions that are as refined as they are robust—where form meets function, and tradition meets technology.



NIDEC UNDERWATER APPLICATION

Efficient. Compact. Reliable.

Nidec provides topside compact VFD systems without output step-up transformer suitable to supply subsea motors for pumps and compressors with umbilical length up to 50km and fitting with space constraint in FPSO retrofit upgrade.

Key Features:

- Topside Compact VFD Systems for Subsea Applications
- Long-Distance Capability
- Compact Footprint
- High Efficiency & Robust Design

POWER QUALITY IN MARINE

Enhance Power. Reduce Fuel. Sail Smarter.

Improving power factor is essential to optimizing energy use onboard. By **increasing the power factor**, we significantly **reduce diesel generator operation, minimize the number of startups**, and **lower the overall energy consumption of the vessel**.

Our **STATCOM** systems are designed to enhance power factor and stabilize voltage across vessel's electrical network, **helping cut fuel consumption and—ensuring smoother operations**, lower emissions, and smarter energy use on every voyage.



THE MARINE PORTFOLIO

Discover our marine solutions designed for maximum flexibility and minimal maintenance. Our modular high-volume production ensures both efficiency and scalability. With long-term availability and reduced spares investment, our products offer a reliable and cost-effective choice for your marine needs.



Flexible Design



Easy Maintenance



Modular High-Volume Production



Long-Term Availability



Reduced Spares Investment

Our **R&D Department** drives excellence in marine technology, continuously designing cutting-edge solutions that meet the evolving demands of the industry.

By focusing on **product development, space optimization, and vibration reduction**, we ensure superior marine experiences.

Anticipating market trends, we deliver products that set new standards and enhance performance and efficiency.



LV DRIVES:

- Power Range: up to 5,000 kW
- Voltage: up to 1000V AC
- Output frequency: up to 200 Hz
- AC & DC Drives



MV DRIVES:

- Power range: Air cooling up to 10,400 kVA, water cooling up to 21,600 kVA
- Voltage: up to 3300 V
- Output frequency: Normal 5 - 70 Hz, extended 5 - 140 Hz
- Active front end, direct front end & LCI



STATCOMS:

- Reactive power rating
- Up to 300 MVar
- Maximum rated voltage
- 40kV without transformer cooling
- Air or water cooling



LV MOTORS:

- Power rating: up to 1,500 kW, 2,000 HP
- Induction & Synchronous motors



MV MOTORS:

- Power rating: 150 - 25,000 kW, 200 - 33,000 HP
- Voltage: up to 15 kV
- Induction & synchronous motors



LV-MV GENERATORS:

- Power rating: 2,500 - 16,000 kVA
- Voltage: up to 11 kV
- Induction & Synchronous generators



PERMANENT MAGNET MACHINES:

- Up to 10 MVA
- Up to 690 V



BATTERY PACK:

- Air cooled and liquid cooled
- Compact and reliable

Main features:

- Chemistry: LiFePO4
- Nominal Capacity: 285 Ah
- Energy: 14592 Wh
- Nominal Voltage: 51,2 V
- Max Voltage: 58,4 V
- Min Voltage: 40 V
- Weight: 124 Kg
- Dimensions: 670 x 410 x H 296 (mm)



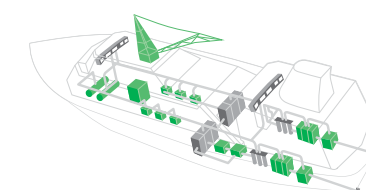
AUTOMATION & CONTROL SYSTEMS:

- Reliability and safety
- Communication & connectivity
- Monitoring and diagnostics



ONBOARD & ONSHORE EV CHARGING SOLUTIONS:

- Onboard EV Charging Systems
- Onshore EV Charging Infrastructure
- Charging solutions for e-boats and commuter vessels, as well as for superyachts and tenderboats, cars and commercial vehicles
- Smart grid compatibility
- Scalable and modular design
- Up to 12 charging points, air or liquid cooled
- Always optimal power allocation
- up to 1.3 MW charging capacity



FULL ELECTRIC PACKAGE:

- Main propulsion
- Variable speed generators
- On-Board grid
- Shore power
- Power management system



LV-MV SHORE TO SHIP CONVERTERS:

- AFE Input section or DFE (only MV configuration)
- Modular IGBT power structure
- Output power range from 1 up to 20 MVA
- Output voltage from 690 up to 3250V
- Water cooled
- Input clean power filter (only for AFE configuration)
- Output sine filter



SERVICE:

- **Level 1 Support** - 24/7 help desk support for the customer
- **Level 2 Support** - Remote Technical Support
- **Level 3 Support** - R&D or Engineering
- **On Site Support** - Technical personnel who go on site to do maintenance
- **Training** - Technical personnel who go on-site to do training
- **Field Service Coordination**
- **Spare Parts Management**

An aerial photograph of a helicopter on the deck of a ship. The helicopter is positioned in the center of the frame, with its rotors visible. The ship's deck is a dark, flat surface, and the surrounding water is a deep blue with white foam from the ship's wake. The background is a vast expanse of blue water with white foam from the ship's wake.

Nidec

All for dreams

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