Nidec Power

Marine Alternators

LEROY-SOMER™
KATO ENGINEERING™

Certified Alternators for
Reliable Power Generation

50+
years of experience

Up to 35 MW
Power range

8,000+
Vessels equipped

Repair & Maintenance
Worldwide on-board

Certified by
all major classification societies

SOLAS
Compliant range

Built-in Quality

SOME PEOPLE NEED TO BE CHALLENGED TO MEET EXPECTATIONS.
SOME PEOPLE PERCEIVE REGULATIONS AS A CONSTRAINT.
NOT US.

We build quality alternators that are designed to withstand the test of time and extreme conditions. We source the best materials, and craft our designs around reliability and performance.
The experience and know-how of our workers is our ultimate guarantee of quality.

The result? Most of our alternators meet marine specifications by design.
No alterations are required to comply with some of the world's most demanding rules.

We have an extensive track record demonstrating our commitment to quality and performance.
Our alternators supply high-demand commercial and industrial businesses around the globe.

Standards & Certifications

Leroy-somer™ and Kato Engineering™ alternators are manufactured in an ISO 9001- 2000 environment.

From materials sourcing to final commissioning and maintenance, our whole organization is devoted to quality.

Leroy-Somer™ Marine alternators meet all key international standards and regulations, including IEC 60034, NEMA MG 1.32-33, ISO 8528-3, CSA C22.2 n°100-14 and UL 1446 (UL 1004 on request). Also compliant with IEC 61000-6-2, IEC 61000-6-3, IEC 61000-6-4, VDE 0875G, VDE 0875N and EN 55011, group 1 class A for European zone.

Our marine alternators can be shipped with certificates from all major classification societies, complying with the specifications below:

	Temperature rise Ambient temperature Class H	Temperature rise Ambient temperature Class F	Short-circuit current	Transient voltage drop	% Overload P.F. = 0.8	Temperature detector	Space heaters	Regulation	Shaft conformity certificate	Factory setting	Spare parts
LR Lloyd's Register	110°/45°	95°/45°	300% 2 sec.	15% at Pn P.F. = 0.8	50% 30 sec.	Electrical propulsion	R*	± 2.5%	P ≥ 100 kW	P ≥ 100 kW	NS*
ABS American Bureau of Shipping	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 30 sec.	P ≥ 500 kVA Electrical propulsion	If weight ≥ 455 kg	± 2.5%	Electrical propulsion	P ≥ 100 kW	Bearings
ClassNK Nippon Kaiji Kyokai	120°/45°	100°/45°	300% 2 sec.	15% at PN P.F. = 0.8	50% 2 mn	P ≥ 500 kVA Electrical propulsion	P ≥ 500 kW	± 2.5%	P ≥ 100 kW	P > 0 kW	1 bearing for each 4 or less
BV Bureau Veritas	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. 0.4	50% 30 sec.	Electrical propulsion	R* Electrical propulsion	± 2.5%	Shaft driven + Propulsion application	P ≥ 100 kW	NS*
DNV Det Norske Veritas	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. 0.4	50% 30 sec.	P > 5000 kW	S*	± 2.5%	Shaft driven + Propulsion application	P ≥ 100 kW	1/3 of the diodes + A.V.R.
PRS Polish Register of Shipping	120°/45°	95°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 2 mn	P ≥ 500 kVA Electrical propulsion	Electrical propulsion	± 2.5%	NS*	P ≥ 50 kVA	Bearings (R*)
KRS Korea Register of Shipping	120°/45°	100°/45°	300% 2 sec.	15% at Pn P.F. = 0.8	50% 2 mn	P ≥ 500 kVA Electrical propulsion	R*	± 2.5%	P ≥ 100 kW	P ≥ 100 kW	Bearings
RINA Registro Italiano Navale	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 30 sec.	Electrical propulsion	Electrical propulsion	± 2.5%	Shaft driven + Propulsion application	P ≥ 100 kVA	NS*
RS Russian Maritime Register of Shipping	120°/45°	95°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 2 mn	Electrical propulsion	R*	± 2.5%	NS*	P > 0 kW	NS*
CCS China Classification Society	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 2 mn.	-	-	± 2.5%	-	-	-
TL Turkish Lloyd's	120°/45°	100°/45°	300% 2 sec.	15% at 0.6 Pn P.F. = 0.4	50% 2 mn	P ≥ 500 kVA Electrical propulsion	P ≥ 500 kW	± 2.5%	Shaft driven + Propulsion application	P ≥ 100 kW	NS*

*: NS: not specified - R: recommended - S: specified

Notes:

LSAM alternators are proposed for secondary use. All demands for propulsion must be submitted for consultation. Generators intended for propulsion are subjected to case by case approval and shaft certification type 3.2 by classification societies requested.

This list is not exhaustive and may be revised to include other classification societies. Whatever Class H or F, all the other specifications remain the same.

Table is applicable to standard low voltage alternators up to 5000 kW electrical power.

Consult the societies rules for all other products (e.g. heat exchangers, medium voltage, electrical propulsion, ...).

Built to Resist

OUR PRODUCTS ARE DESIGNED AND BUILT TO PROVIDE LONG-LASTING AND RELIABLE PERFORMANCES.

CLASS H INSULATION

OUR ALTERNATORS ARE CLASS H INSULATED, MEANING WE SOURCE TOP-QUALITY MATERIALS FROM TRUSTED SUPPLIERS TO GUARANTEE A PRODUCT WITH SUPERIOR HEAT-RESISTANCE.

The entire rotor-stator system is carefully impregnated with **a special insulating** coating to protect it against dust and wear.

The result: longer life, better performance.

COMPACT DESIGN

SOMETIMES, GAINING A FEW INCHES IS CRITICAL. THIS IS ESPECIALLY TRUE ABOARD VESSELS WHERE SPACE IS LIMITED AND COMPONENTS ARE CRAMMED TOGETHER IN STRATEGIC AREAS.

Our alternators are designed to provide the maximum power with **the minimum footprint.**

Our **patented cooling** and AREP excitation technologies allow us to offer **the most compact alternators** on the market.

ROBUST DESIGN

ABOARD A SHIP, VIBRATIONS ARE THE ENEMY OF ANY ROTATING MACHINE.

In the design phase, our engineering teams analyze the impact of vibrations through **finite element modeling**, and we provide 3D models of our products to help their integration in gensets or on ships.

Internal vibrations are reduced through **antivibration mounts** for sensitive components.

HIGH MOTOR STARTING CAPABILITY

RELIABLE MOTOR STARTING IS A KEY REQUIREMENT FOR MARINE ALTERNATORS, TO ENSURE BOW THRUSTERS, WINCHES AND RUDDERS GET THE POWER THEY NEED, WHEN THEY NEED IT.

Our alternators **are optimized** with **digital regulation** features allowing Soft Start and load impact adjustments, and their electrical and mechanical design allows them to **sustain 300% nominal load for 10 seconds.**

Support & Services

Certified experts, trusted professionals

OUR SUPPORT AND SERVICE TEAMS ARE ISO 9001 AND ISO 14001 CERTIFIED, DEMONSTRATING OUR ONGOING COMMITMENT TO QUALITY.

Our field engineers are cleared to work in specific and hazardous environments, including marine, oil & gas and nuclear facilities.

They all have the qualification and experience to meet your needs.

Our worldwide network also guarantees our capability to respond quickly to any request, taking local regulations and conditions in consideration.

Field service

WE OFFER THE FOLLOWING SERVICES:

- Installation & commissioning
- Re-assembly & rewinding
- On-site inspection & repair
- Maintenance operations
- Diagnostics & optimization
- Vibration analysis

WHAT YOU GET:

- Complete & thorough testing
- Detailed intervention report
- Satisfaction & follow-up

Remanufacturing workshop

We offer turnkey remanufacturing service including on-site removal, transport, and re-commissioning operations.

WE SERVE ALTERNATORS UP TO 35MW AND 80 TONS.

All remanufacturing is performed to precise factory specifications, including balancing and dynamic load tests.

Optimizing Emergency Systems

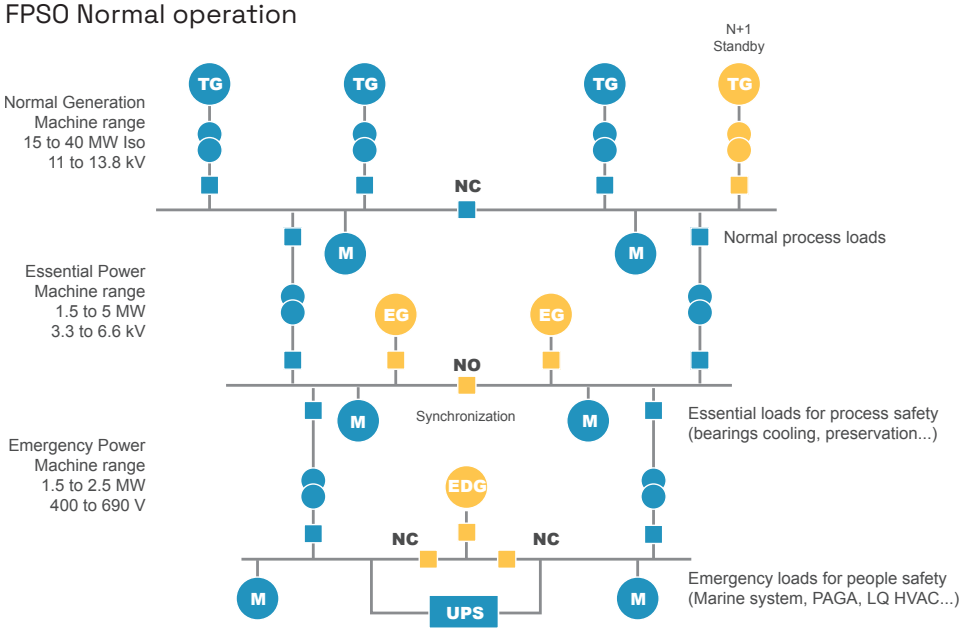
**ON BOARD FLOATING VESSELS, EMERGENCY GENERATORS ARE EXPECTED TO SUPPLY POWER DURING INCIDENTS.
WHILE THEY DON'T OPERATE 24/7, THEY HAVE TO BE READY TO COMPENSATE FOR ANY SITUATION, AT ANY MOMENT.**

These gensets require specific know-how to reach the right balance between reliability and space optimization.

Using high performance, optimized excitation, enhanced insulation and efficient cooling, our alternators solve this complex equation.

DECISIVE SPACE SAVINGS, PRESERVED RELIABILITY

FPSO Normal operation



Solutions for offshore oil & gas and offshore windmill emergency platforms

COMBINING THE DEMANDING REGULATION OF MARINE ENVIRONMENTS AND THE SPECIFIC NEEDS OF THE OIL & GAS VERTICAL INDUSTRY, OFFSHORE INSTALLATIONS AND VESSELS ARE THE ULTIMATE TEST FOR EMERGENCY AND SOLAS-COMPLIANT SYSTEMS.

We have been working with key players of the «Oil & Gas» business, from the North Sea, Australia to Mainland U.S.

Our expertise encompasses security and productivity considerations, allowing us to deliver on critical specifications such as Atex for explosive environments.

References

OUR GENERATORS ARE ON-BOARD THOUSANDS OF VESSELS AROUND THE GLOBE. OUR REFERENCE LIST INCLUDES FAMOUS NAMES AND SOME OF THE MOST ADVANCED SHIPS IN OPERATION. LEADING SHIPBUILDERS AND PACKAGERS TRUST OUR PRODUCTS FOR HIGH PERFORMANCE & RELIABILITY IN ALL CONDITIONS. THE LIST BELOW ILLUSTRATE SOME OF OUR KEY CAPABILITIES, AND EXTENDED REFERENCE LISTS ARE AVAILABLE FROM OUR SALES NETWORK ON DEMAND.

LNG Tankers

Mubaraz Class
PGN FSRU Lampung
Hoëgh Grace

Offshore Tug/Supply Vessels

ESNAAD 221 / 222 / 223 / 224 / 225
ZAMIL 62 & ZAMIL 36
ADAMS AQUANAUT
Bourbon Gulf 101 / 102
Bourbon Hidra / Sagitta / Sirius / Thalie…
NOR Goliath
PSV Polaris / Pollux / Procyon

Cruise Ships & Ferries

Costa NeoRiviera
RCCL Harmony of the Seas & Symphony of the seas
BC Ferries

Anchor handling & inshore vessels

Halul 20 / 23 / 29 / 40 / 50 / 51 / 52 / 60
Damen Shoalbuster range

Fishing vessels

SEAS 4 & 5 purse seiners
Piriou Franche Terre

FPSO vessels

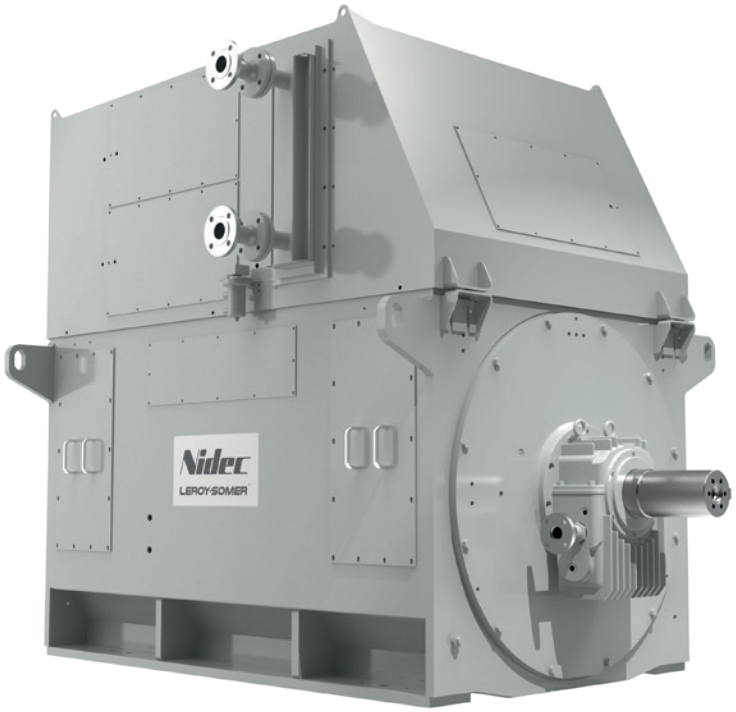
Intex Ichtys FPSO
East Fortune
Kraken
Western Isles

Other

ABB Dolwin Windplatform
COOEC Trenching Vessel
UKD ORCA Dredger Ship
SWATH Cetus / Persues Pilot Vessels
Paris Etoile River Cruise Ship
Thialf Deep Water Crane Vessel
Shell Prelude FLNG

Bulk & container ships

MAERSK Tåsinge class
Palmali 7100 DWT river types



Nidec

All for dreams

www.nidecpower.com

Connect with us at:

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