STAMFORD® & AvK® MARINE ALTERNATORS

Powering peace of mind through the evolving energy journey

STAMFORD | AvK™

POWERING TOMORROW, TOGETHER

CONTENTS

YOUR MARINE PARTNER FOR MAXIMUM UPTIME THROUGH WORLD CLASS ALTERNATORS AND A 24/7 GLOBAL SERVICE NETWORK

Reliable Performance

with best-in-class marine insulation protection. 3 year warranty as standard on STAMFORD® S-Range

Special Winding Protection

Winding insulation resistance tested at 25 megaohms, 4 times its normal operational level

Responsive Service

within 24hrs and regional inventory

Technical Expertise

delivering the right solution to your needs

Personal Support

for service and parts wherever you are

Customisation

to meet all your requirements

Service Support

a large service network to support you wherever you are

GENUINE STAMFORD AvK

DELIVERING IN ALL ENVIRONMENTS ALL THE TIME

Like you, we understand the challenges of operating in the marine environment. And through our experience, we're able to help you determine the best course.

For over half a century, countless vessels have relied on the dependability of STAMFORD® and AvK® alternators and the technical skills from our support teams.

As an industry leader in advanced alternator design, we have a proven track record of delivering dependable products for the marine, offshore and oil and gas markets.

Through our experience, we understand the complexities and challenges you face integrating alternators and gensets into marine vessels. Whether for shaft propulsion, auxiliary power, diesel electric propulsion or hybrid systems, you can rely on our support to help you win in marine.

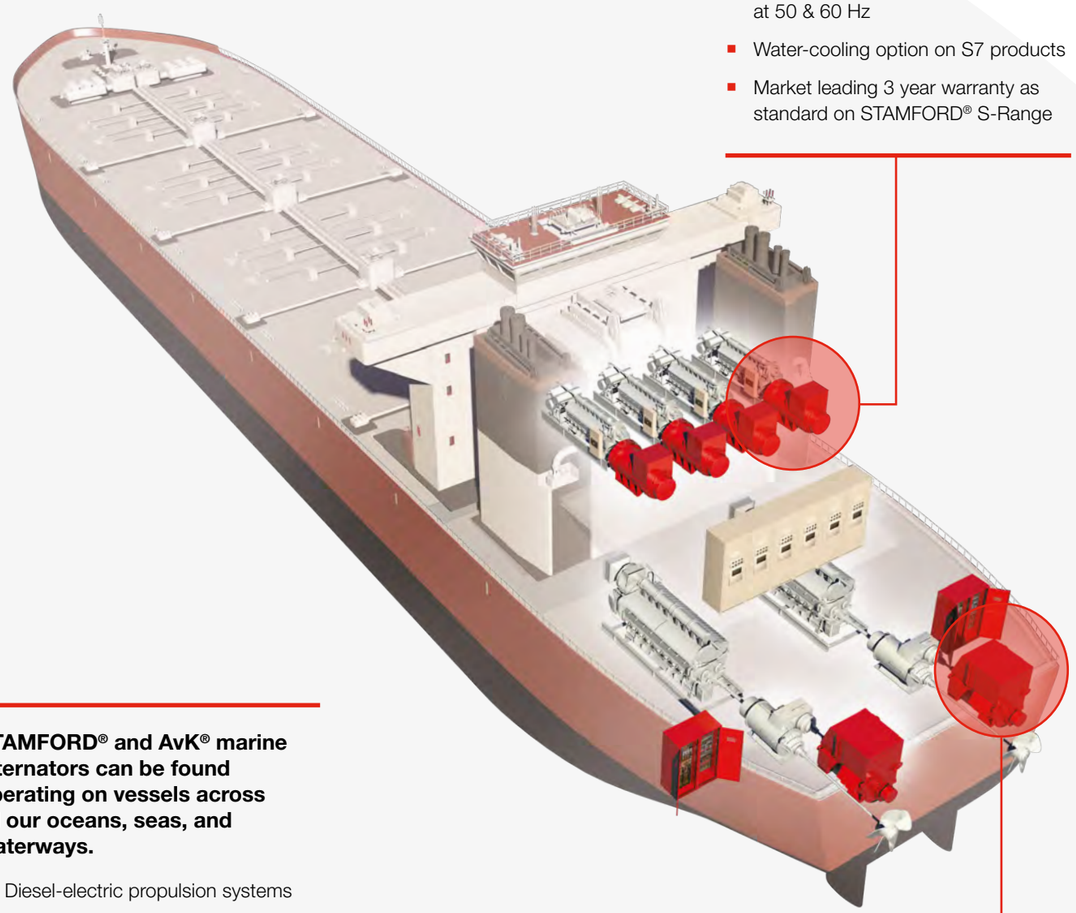
Our customers benefit from active support throughout the project life cycle - including preparation of specifications, alternator selection and sizing, installation, testing and commissioning, after sales service and maintenance.

Marine alternators designed and built by us offer efficient power generation, superior durability and longevity.

STAMFORD®

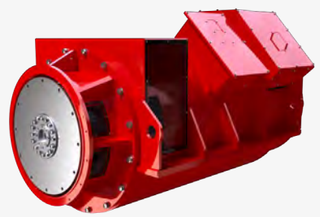
High-quality, durable alternators utilising wire-wound technology for marine main power and auxiliary gensets and shaft alternators:

- 4 pole, 1,500 or 1,800rpm
- Power range: 5 – 4000kVA
- Voltage range: 220 – 690V at 50 & 60 Hz
- Water-cooling option on S7 products
- Market leading 3 year warranty as standard on STAMFORD® S-Range



STAMFORD® and AvK® marine alternators can be found operating on vessels across all our oceans, seas, and waterways.

- Diesel-electric propulsion systems
- Power Take Out (PTO) shaft alternators for economical generation of electrical power
- PTO/PTI (Power Take In) shaft alternators operating as auxiliary propulsion drive systems
- Auxiliary and onboard power supply
- Self-starting Power Take Home (PTH) shaft alternators for emergency propulsion
- Compliant to Fixed Water Based Local Application Fire Fighting Systems (FWBLAFFS)



AvK®

Robust bar wound alternator designed to meet the challenges of the most arduous applications and environments. AvK alternators can be customised to meet specific customer needs:

- Power range: 1,000 – 8,000kVA
- Voltage range: 380 – 13,800V at 50 & 60Hz
- A choice of running speeds in most Frames (4, 6, 8 and 10 pole options)

ELECTRIC AND HYBRID PROPULSION

Diesel Electric Propulsion (DEP) technology is well established, as is our experience assisting customers integrate alternators and gensets into DEP marine systems. With our expertise, global support networks and highly dependable product range, marine architects are consistently specifying STAMFORD® and AvK® alternators for DEP. Increasingly our customers are looking to add flexibility to marine propulsion systems through use of hybrid configurations. Hybrid propulsion packages typically deliver fuel-savings for boat operators.

Hybrid propulsion systems comprise diesel electric, diesel mechanical and a combination of hybrid drive options enabling the ship to optimise power efficiency through use of a flexible choice of operational modes. In addition to fuel savings, exhaust emissions are also limited, making hybrid systems environmentally friendly.

The global demand for Offshore Support Vessels (OSV), Platform Support Vessels (PSV) and Anchor Handling Tug Supply (AHTS) vessels incorporating DEP and hybrid propulsion technology is increasing, and in response, we have developed our marine range to offer a reduction in both size and weight. STAMFORD and AvK alternators have proven their suitability for continuous operation in the demanding offshore environment, and can operate both as auxiliaries for hotel loads and as a supply for propulsion systems. They can handle the high currents that are seen in these high-power, low-voltage machines, and are perfectly suited to start large electrical machinery as seen on many vessels.

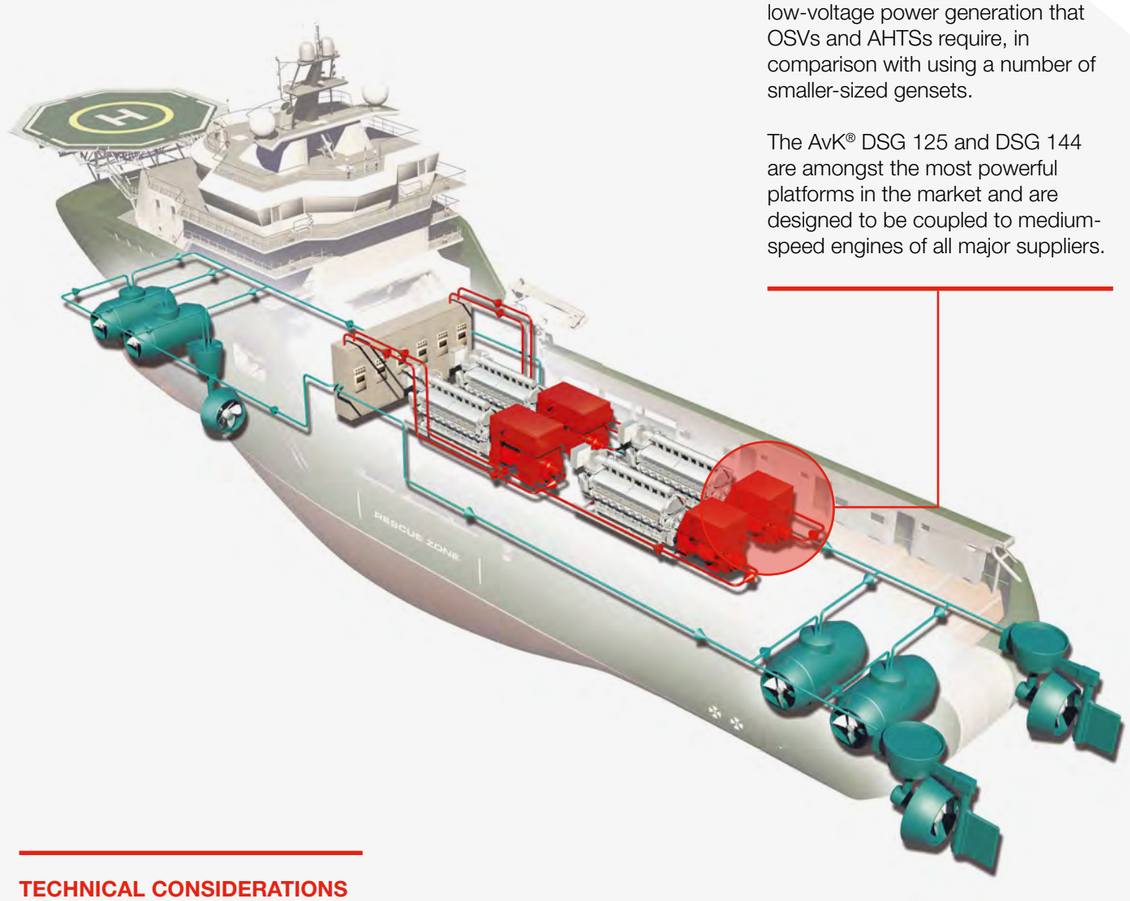
Our expert marine application engineers can help you specify which alternators from our range will reduce capital expenditure and operating costs. We can help you design a hybrid propulsion system to optimise the need for high generating capacity at cruising speeds whilst saving on machinery volume.

AvK® ALTERNATORS

AvK® DSG 125 and DSG 144 alternators save space and reduce capital expense

Talk to our application engineers to learn how our powerful AvK® DSG 125 and DSG 144 alternators can reduce overall footprint, with high-power, low-voltage power generation that OSVs and AHTSs require, in comparison with using a number of smaller-sized gensets.

The AvK® DSG 125 and DSG 144 are amongst the most powerful platforms in the market and are designed to be coupled to medium-speed engines of all major suppliers.



TECHNICAL CONSIDERATIONS

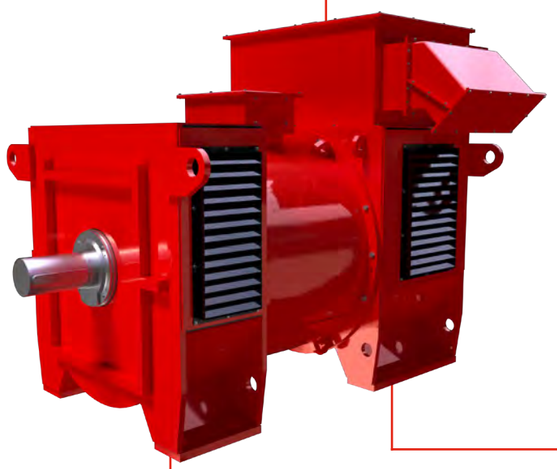
- Understand the electrical characteristics of the inverter loads connected to the gensets.
- Is there a requirement for variable speed operations?
- Are there any special requirements for bearings, due to high angles of inclination, running speed, lubrication and cooling, etc...?

FUTURE READY

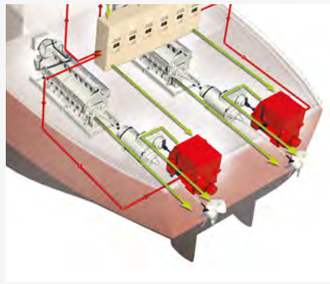
We are here to support your future decarbonisation goals, through our end-to-end expertise in versatile solutions. Backed by the reassurance of our world-renowned brands recognised for reliability and complete peace of mind, we are with you on your journey towards sustainability.

https://stamfordavk.li/future-ready

MARINE SHAFT ALTERNATORS



POWER TAKE OFF (PTO)



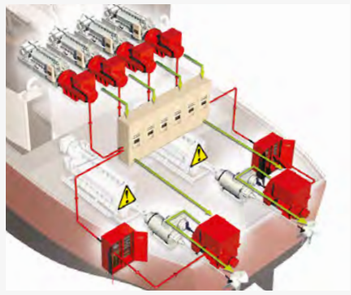
Operation as shaft alternator for boardnet supply only

- Auxiliary diesel gensets can be stopped; reducing maintenance costs
- Boardnet powered by main diesel engine; reduces operating hours of auxiliary gensets

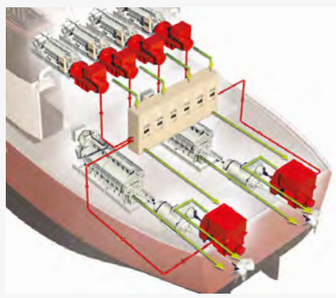
POWER TAKE HOME (PTH)

Alternator and start-up transformer (start-up system) individually engineered to customer requirements

- Redundant power in case of main engine malfunction - self start capability required
- Shaft alternator to be started by the auxiliary gensets



POWER TAKE IN (PTI)



Operation as shaft motor for “booster” operation - no selfstart capability required

- Additional propulsion power available
- Smaller main engine for “normal” operation lowers main engine costs
- Shaft alternator/motor to be started as normal PTO machine

TECHNICAL CONSIDERATIONS

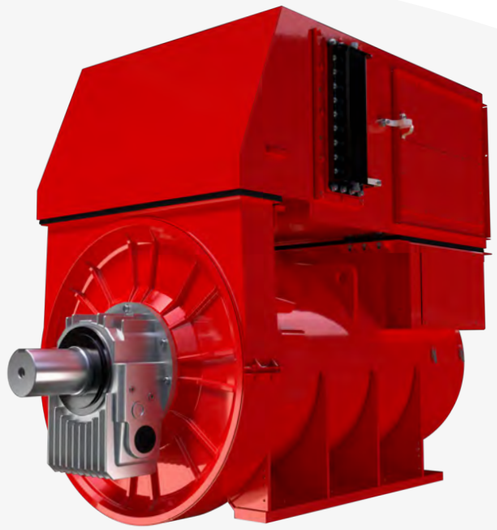
- If the alternator requires a self starting capability when in motor mode (Power Take Home - PTH): What is the starting method to be employed?
- During starting the electrical machines output shaft should be completely de-coupled from gearbox or prop drive shaft on board.
- What is the mode of operation in PTH? Emergency situation only, or more regular operation, such as harbour manoeuvering?
- Are there any special requirements for bearings, due to high angles of inclination, running speed, lubrication and cooling, etc...?

MARINE AUXILIARY ALTERNATORS

For a complete line up of marine auxiliary alternators, designed specifically for applications including emergency power, ship service power, harbour power, power take home and diesel electric propulsion, the STAMFORD® and AvK® ranges are unbeatable.

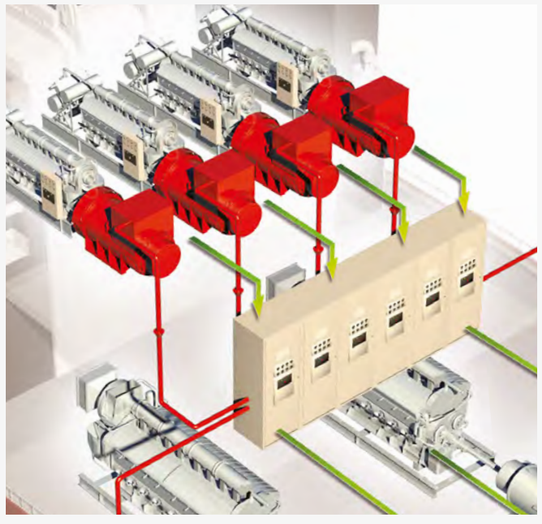
The difference is experience.

For all custom genset configurations, our team of Applications Engineers specialising in marine applications are located in strategic regional offices. We are able to assist with engine/alternator matching to ensure maximum efficiency whether simply for emergency use or for use with shaft alternators for propulsion.



THE INDUSTRY STANDARD

Compact in design STAMFORD® alternators are easy to install and maintain for marine applications. A range of single and three phase voltages are available from either 6 or 12 wire reconnectable windings. 2/3 pitch main stator and damper windings make STAMFORD also suitable for parallel operation when equipped with suitable voltage regulator and quadrature droop kit. Most alternator models are fitted with a Permanent Magnet Generator (PMG) to power the excitation system as standard. The PM0/1 range is fitted with an Excitation Boost System (EBS) to provide short circuit maintenance and improved motor starting.



TECHNICAL CONSIDERATIONS

- What is the duty cycle? Are the genset spurely for emergency, or are they working in conjunction with shaft alternators to provide power for propulsion?
- It is important to understand the vessels power and propulsion system modes of operation.
- Are there any special requirements for bearings, due to high angles of inclination, running speed, lubrication and cooling, etc...?

MARINE CLASSIFICATIONS

STAMFORD® and AvK® alternators meet the classification requirements of all major marine societies:

- American Bureau of Shipping (ABS)
- Bureau Veritas (BV)
- China Corporation Register of Shipping (CCRS)
- China Classification Society (CCS)
- Det Norske Veritas (DNV)
- Indian Register of Shipping (IRS)
- Korean Register of Shipping (KRS)
- Lloyds Register of Shipping (LRS)
- Nippon Kaiji Kyokai (NK)
- Registro Italiano Navale (RINA)
- Turkish Loydu (TL)

Details on conformance to requirements of other societies and international marine safety standards can be obtained from our sales offices.

Spare Parts
According to classification requirements spare parts can be offered separately.

TESTIMONIALS

FISH CARRIER VESSEL

Specified:
STAMFORD® S4L1M4D1
The tenth ship built in cooperation with the Larsnes Mek Verksted and the eighth fish carrier.

“For reliability, quality and their technical expertise STAMFORD | AvK is always our preferred choice.”

OFFSHORE OIL & GAS VESSEL

Specified:
STAMFORD®
Replacement marine certified alternator required immediately due to the failure of a non-STAMFORD® machine onboard the FS Aquarius.

“Going on word-of-mouth recommendations, we chose STAMFORD in the hope it could deliver for us. STAMFORD alternators run for years, but more importantly, the way they responded to our urgent needs was outstanding.”

DUAL FUELLED HYBRID FERRY

Specified:
AvK® DSG 114 per vessel

Each of the five ferries are equipped with hybrid gas-electric propulsion plus battery systems to reduce fuel consumption and emissions, meeting the latest requirements for energy efficiency.

“Over the years AvK have proven to be one of our most valuable suppliers, offering the product reliability we look for together with the shortest response time to our requests.”

WIND POWER INSTALLATION VESSEL

Specified:
STAMFORD® S7 Water-cooled

Wind power installation vessel in China, as part of national decarbonisation initiatives.

“Maximum uptime was key for this project, with superior performance and 24/7 support as part of the world-renowned STAMFORD brand promise.”

COMPREHENSIVE SCIENTFIC RESEARCH SHIP

Specified:
STAMFORD® S4L1M

Marine application, the environment is humid, salt spray, pitch and roll.

“STAMFORD products demonstrated reliable quality, good motor environmental protection and high electrical performance quality.”

ANCHOR HANDLING TUG SUPPLY HYBRID VESSEL

Specified:
AvK® DSG 144 and AvK® DSG 114

Onboard hybrid marine propulsion power system designed for offshore operation in the oil & gas sector.

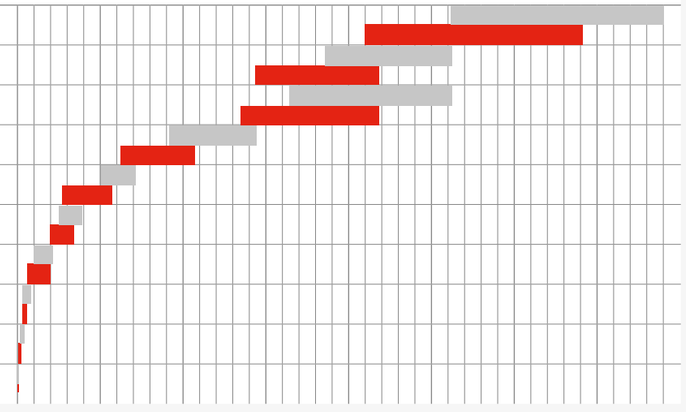
“The DOF Subsea design called for a number of modifications, which VARD and STAMFORD | AvK successfully delivered.”

MARINE
ALTERNATOR RANGE

STAMFORD® ALTERNATOR RANGE

Product (all 4 pole)	50Hz (Continuous 110/50 (H))	60Hz (Continuous 110/50 (H))
Low voltage	**400V**	**480V**
P80 LVSM804	2121-3442kVA	2640-3928kVA
S7L1W	1455-2200kVA	1875-2644kVA
S7L1M	1365-2200kVA	1669-2644kVA
S6L1M	650-1100kVA	875-1462kVA
S5L1M	390-585kVA	520-725kVA
S4L1M	215-340kVA	270-425kVA
UCM27	81-205kVA	108-225kVA
UCM22	38-71kVA	56-92kVA
PM1	17-37kVA	22-48kVA
PM0	6-15kVA	8-19kVA

All data for H class insulated machines (B and F class also available)
All data for air cooled machines (50°C max inlet temperature)
except S7L1W which is water-cooled

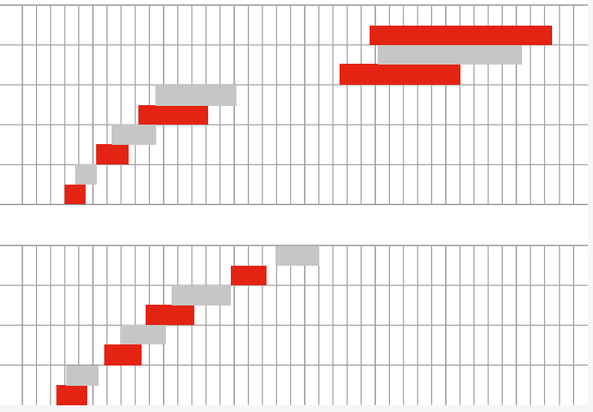


Low voltage (LV) standard marine alternators	
Power range	6-3442kVA 50Hz
	8-3928kVA (60Hz)
Voltage	380-690V (50Hz)
	380-690V (60Hz)
Speed range	50Hz: 1500rpm (4 pole)
	60Hz: 1800rpm (4 pole)
Applications options	
Auxillary and onboard power supply	
Power Take Off (PTO) shaft	
Power Take In (PTI) shaft	
Hybrid Electric Propulsion Systems	

AvK® ALTERNATOR RANGE

Product (4 pole unless stated)	50Hz DIG: Class F 90/50 DSG: Class H 110/50	60Hz DIG: Class F 90/50 DSG: Class H 110/50
High voltage	**6600V**	**6600 V**
DIG 156 (6 pole)	4984-7565kVA	N/A
DIG 150	4539-6230kVA	5073-7120kVA
DIG 130	1691-2670kVA	1958-3070kVA
DIG 120	1157-1557kVA	1335-1958kVA
DIG 110	667-961kVA	801-1112kVA
Low voltage	**400V**	**480V**
DSG 99, DSG 114	3070-3560kVA	3684-4272kVA
DSG 86	1833-2527kVA	2200-3033kVA
DSG 74	1246-1780kVA	1495-2136kVA
DSG 62	587-979kVA	703-1174kVA

DIG: Class F insulated (Class B ratings also available)
DSG: Class H insulated (Class F and B ratings also available)
All data for air cooled machines (50°C max inlet temperature)



Low voltage (LV) and high voltage (HV) marine alternators	
Power range	587-7565kVA (50Hz)
	703-7120kVA (60Hz)
Voltage	380-11000V (50Hz)
	415-13800V (60Hz)
Speed range	50Hz: 600, 750, 1000, 1500rpm
	60Hz: 720, 900, 1200, 1800rpm (4/6/8/10 pole)
Applications options	
Auxillary and onboard power supply	
Power Take Off (PTO) shaft	
Power Take In (PTI) shaft	
Power Take Home (PTH) shaft	
Hybrid Electric Propulsion Systems	

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