GENERATORS
THREE PHASE SYNCHRONOUS GENERATORS
Reliability
- Long life endurance of electrical components and housing.
- Generators are impregnated with high-grade resin by a VPI process and an additional protection against hostile environmental conditions (tropicalization) is provided as standard.
- Large security factors to ensure reliability for the worst operating conditions.

Performance
- Active parts are designed by using the latest technologies and the best materials available to guarantee high efficiency values.

Approvals
- The motors are designed and built in accordance with marine register rules specifications and comply with: ABS, BV, CCS, DNV, GL, KR, LR, NK, RINA, RS.

Safety
- Anti-condensation heaters are available for all frame sizes.
- Wide range of sensors to monitor the temperature of the stator winding and the bearings.
- Electronic equipment is available for real-time monitoring.
- CT’s for differential protection.

Totally customisable
- All generators are completely customisable following to your requests.
- Nominal voltage from 380 to 6,600 Volts.
- Polarities not mentioned in the following pages are available on request.
- Degree of protection up to IP 55, installing a heat exchanger.
- Auxiliary and neutral point terminal boxes.
- Ball, roller or sleeve bearings are available.
- Prepared for vibration sensors. (Anti friction bearings only)
- Three on-board neutral point current transformers (CT) are available with either single or double core.

Standards
- IEC 60034-1; CEI EN 60034-1; BS 4999-5000; VDE 0530, NF 51-100, 111; OVE M-10, NEMA MG 1.22;
- Insulation system UL certified (available on request).
ELECTRICAL FEATURES

Power range:
100 – 5500kVA at low voltage
500 – 6800kVA at medium voltage

Frequency and Speed:
From 600 to 1500 rpm at 50Hz
From 720 to 1800 rpm at 60 Hz

Insulation and temperature rise class:
Class H insulation system.
Ratings for temp class F and H, along with standby peak ratings given in table below.

Windings and impregnation:
2/3 winding pitch to minimize the 3rd harmonic of line to neutral voltage.
All windings are vacuum pressure impregnated (VPI) with high grade resin in order to withstand all expected mechanical and electrical shocks and vibrations. A further protective treatment is applied making the generators withstand tough environmental conditions.

Protection degree:
Generators can be supplied with protection degree from IP 23 air cooled to IP 54 with air to water heat exchanger from framesize 250 to 800. On request higher protection degrees can be supplied.

Excitation and regulation:
Brushless excitation with auxiliary winding or alternatively PMG. Analogue or digital AVR system built in or in separate cabinet. Three phase short circuit current (Icc) higher than 3 times the rated current Icc >3 x In.
### 4 Pole

<table>
<thead>
<tr>
<th>Type</th>
<th>Leads</th>
<th>Continuous duty</th>
<th>kVA rating @ Temperature rise / Ambient temp. [°C]</th>
<th>Efficiency</th>
<th>kVA rating @ Temperature rise / Ambient temp. [°C]</th>
<th>Efficiency</th>
<th>B3 Approx. (kg/m²)</th>
<th>Weight (kg)</th>
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<tbody>
<tr>
<td>400V 50Hz - 1.500 min⁻¹</td>
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<tbody>
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<td>450V 60Hz - 1.200 min⁻¹</td>
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### 8 Pole

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<th>Efficiency</th>
<th>B3 Approx. (kg/m²)</th>
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<tr>
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### 10 Pole

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<th>Efficiency</th>
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<th>Efficiency</th>
<th>B3 Approx. (kg/m²)</th>
<th>Weight (kg)</th>
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<tbody>
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<td>450V 60Hz - 720 min⁻¹</td>
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* Ratings refer to the following conditions: balanced non-deforming load, minimum power factor 0.8.