

# INDAR

# SG I

## Synchronous Generators Driven by Internal Combustion Engines



### Applications:

**SGIm variant, diesel generators for the marine market:**

- Offshore
- Dredging
- Cruise liners and ferries
- Fishing vessels
- Oceanographic vessels

**SGIs variant, diesel generators for power generation:**

- Utilities
- Independent power producers (IPP)
- Industry:
  - Cement
  - Chemical
  - Mining
  - Oil & Gas
  - Textile



The basic concept of our INDAR **SGI** generator series (driven by Internal Combustion Engines where burning fuels are fossil fuel, biofuel, gas...) is its adaptability to the standards of each manufacturer. There are two variants: one for marine applications (**SGIm Series**) and one for stationary generation applications (**SGIs Series**).

Main features	SG I
Power	For voltages lower than 1,000 V: from 3,000 kVA to 6,000 kVA For voltages above 1,000 V: from 1,250 kVA to 25,000 kVA
Excitation	Brushless or with direct excitation (with brushes)
Speed	2p ≥ 4 poles; max. speed ≤ 1,800 rpm
Voltage	Up to 15 kV
Temperature Rise Class	F (155 °C) / B (130 °C)
Thermal Insul. Class	Up to class H (180 °C)
Construction	Horizontal
Protection degree (IEC 60034-5)	Up to IP56
Cooling (IEC 60034-6)	IC01, IC11, IC21, IC31, IC06, IC16, IC26, IC36, IC17, IC27, IC37, IC81W, IC86W, IC611, IC616, IC661 and IC666
Bearings	With anti-friction bearings or sleeve bearings
Types of atmosphere	Only safe areas
Main options	AVRs, lubrication sets, hydrostatic sets, special sensors (vibrations, temperature, speed, etc.), transformers

Test	Procedure
Direct-current windings resistance measurement at cold condition	IEC 60034-4
Phase sequence check	IEC 60034-8
Temperature rise test	IEC 60034-1 IEC 60034-29
No-load saturation test (open circuit saturation curve)	IEC 60034-4
Iron losses measurement at no-load	IEC 60034-2-1
Friction and windage losses measurement (mechanical losses)	IEC 60034-2-1
Total harmonic distortion THD measurement (Voltage waveform)	IEC 60034-1
Sustained three-phase short-circuit test (short-circuit curve)	IEC 60034-4
Additional load losses measurement (stray losses)	IEC 60034-2-1
Determination of efficiency	IEC 60034-2-1
Vibration level measurement	IEC 60034-14
Overspeed test	IEC 60034-1
Withstand voltage test (High voltage dielectric test)	IEC 60034-1
Insulation resistance and polarization index measurement	IEEE Std 43
Noise level test	IEC 60034-9 ISO 3746
Reactances & time constants det.	IEC 60034-4

Our machines are designed, manufactured and tested according to the criteria and standards of the International Electrotechnical Commission (IEC). Additionally, we can design and manufacture in accordance with other standards (IEEE, NEMA, VDE, etc.). Indar's SG series generators adapt to the requirements established by the various Classification Societies for marine application. In the case of machines connected to the main grid, they are designed according to the legislation in force in each country, as regards electrical grid connection in terms of voltage drops.



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