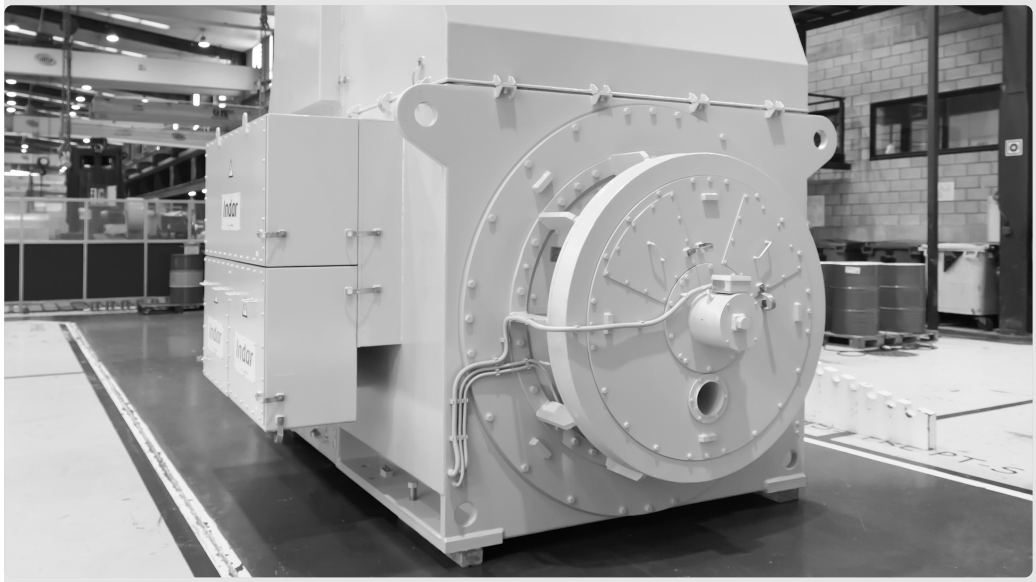
INDAR

SM

Synchronous Motors



Indar is characterised by its capacity to manufacture large drives for different markets and applications. The INDAR **SM** family of synchronous motors is a clear example of this capacity. All of the motors in the **SM** series can be fed both directly from the electrical grid and from frequency converters.

Applications:

The SMm series for marine applications:

- Marine: Propulsion, On-deck machinery

The SMi series for standard industrial applications:

- Metal Industry: Rolling mills, Tube mills, Auxiliary systems (pumps, fan…)
- Mining: Lifting, Conveyor belts, Grinding mills
- Test benches

Main features	SM
Power	From 400 kW to 25,000 kW
Excitation	Brushless or with direct excitation (with brushes)
Speed	Up to 1,800 rpm / 2p ≥ 4 poles
Voltage	From 400 V to 15,000 V
Temp. Increase Class	F (155 ºC) / B (130 ºC)
Thermal Insul. Class	Up to class H (180ºC)
Power Supply	PWM or sinusoidal
Construction	Only horizontal
Protection level (IEC 60034-5)	Up to IP ≤ 56
Cooling (IEC 60034-6)	IC01, IC11, IC21, IC31, IC06, IC16, IC26, IC36, IC17, IC27, IC37, IC81W, IC86W, IC611, IC616, IC661 and IC666
Supports	With antifriction bearings or sleeve bearings
Types of atmosphere	Only safe atmospheres
Main options	Lubrication groups, hydrostatic groups, 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
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

Our machines are designed, manufactured and tested according to the criteria and standards of the International Electrotechnical Commission. Indar's IMm series motors adapt to the requirements established by the various classifying bodies for marine application:

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