



Ingeteam Indar Machines designs and manufactures customized electric rotating machines based on the requirements of each project. The **SM** series of synchronous machines is a clear example of our versatility and adaptability to the client's specific requirements when it comes to large scale motors and generators. This flexibility allows us to cover markets as varied and demanding such as main power plants on a cruise ship compliance with comfort class, as well as large drives for SAG/Ball mills located on the most demanding atmospheres and extreme temperatures. As a result of its knowledge and experience, Ingeteam is specialized in both, newbuilding and refurbishment projects.

## Main features

	SM
Rotor Type	Excited salient poles
Frame Size	H $\geq$ 900
Power	Up to 15 MW
Speed	Up to 900 rpm
Voltage	Up to 15,000 V
Temperature Rise Class	F / B
Thermal Insulation Class	Up to class H
Power Supply	PWM or DOL
Construction	Horizontal
Protection Degree	Up to IP 56
Cooling	Upon request (except IC411)
Bearings	Sleeve bearings
Main Options	Lubrication groups, hydrostatic groups, special sensors (vibrations, temperature, speed, etc.)

## ADVANTAGES AND APPLICATIONS

### MAIN ADVANTAGES

- ✓ Simple, compact and robust design.
- ✓ High power density.
- ✓ Proven reliability and endurance.
- ✓ Premium quality thermal insulation class.
- ✓ Optimized efficiency.
- ✓ Power factor control.
- ✓ Versatility (Construction/configuration, operation modes, cooling method, etc.).
- ✓ Operation under most severe operating conditions.

### TYPICAL APPLICATION

- Marine: Propulsion, on-deck machinery.
- Metals: Rolling mills, crushers, extruders.
- Mining: Grinding mills, conveyor belts, hoists.
- Heavy duty fans, wind tunnels.
- Heavy duty pumps.
- Test bench.
- Pulp & paper.

## STANDARDS & TESTS

Indar™ machines are designed, manufactured according to the criteria and standards of the IEC, IEEE or NEMA.

Thanks to our multiple test benches, every Indar machine is tested according to the above mentioned standards requirements as well as to any additional test required by each project.

When it comes to specific sectors such as the marine market, Indar motors are compliant with the requirements established by the various classifying bodies.

Additionally, special tests can be run on our combined power electronics and rotating electrical machine world class laboratory. This laboratory enables us to measure how the electrical machines operate once installed at their final destination, allowing for instance to test them at full load conditions or back-to-back configuration.

