Indar

Indar Electric, an Ingeteam company, has worked for over seventy years in the design, manufacture and supply of electrical rotating machines.

- The experience acquired during this time (since 1940) allows us to provide **a wide range of products, developed from our own technology, placing us in a position of leadership** both in the Spanish and international markets.
- The more than 15,000 generators for wind application, **more than 16,5 GW of installed power,** throughout the world are a clear exponent of our competitiveness and productive capability and the trust Indar's clients have shown in the company.
- At Indar Electric, the quality of our products and services, respect for the environment, and occupational hazard prevention are all essential to our work. With this in mind, we have achieved management systems certification in compliance with the **ISO-9001, ISO-14001 and OHSAS-18001** international standards, with the aim of establishing continuous improvement bases on the involvement of all parties.
- In this context, Indar Electric has decidedly opted for the **LEAN Manufacturing Philosophy** and systems of self control and bar code traceability in the **recently inaugurated 14.000 m² production plant,** as a framework for competitiveness in the coming years, with the aim of offering excellence in our products and services.

Indar

An Ingeteam brand

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INDAR **WIND POWER**

WIND POWER GENERATION

Indar

SYNCHRONOUS AND ASYNCHRONOUS WIND GENERATORS

Cooperation with the client forms part of the philosophy of the company, with a personalized and unique treatment forming the basis of the relationship, and with a clear common purpose.

The range of generators is adapted to the requirements of our clients based on **state-of-the-art technology for Offshore & Onshore applications**

INDAR Electric testing bench

Features

- Generators of power outputs **from 100 kW up to 10 MW.**
- Asynchronous doubly fed or synchronous with permanent magnets or excitation and technology xDFM, Clean Power Series.
- Direct Drive, medium or high speed.
- **Air or water** cooled.
- For all machines up to insulation H.
- Voltages **from 690 V up to 15 kV** for DFM Technology.
- Voltages **from 690 V to 6.6 kV** for PMG Technology.
- Frequency: **50 Hz and 60 Hz.**
- **Onshore & Offshore** applications.
- Various mounting topologies.
- Sound level adjusted to client needs.
- Compliance with international standards: IEC, UL, CSA, USTC, etc.

World class **testing facilities**

To develop products and services adapted to the characteristics of each project and client. For this purpose the R+D+i support unit is made up of highly qualified personnel, and has the most advanced computer resources for the design and development of generators.

The main philosophy of INDAR is to guarantee the quality and the reliability with in-house fully proven solutions.

R+D+i

To this respect INDAR has one of the best test benches in the world. The main capabilities are:

- On load tests up to 8 MW.
- Back to back configuration testing up to 65 MW.
- LVRT (low voltage ride through) testing capability.
- Self generated grid of 50/60 Hz 20 MVA.
- Combined tests of electrical and thermal insulation ageing.
- Climatic chamber (-30ºC to 80ºC) extreme ambient conditions.

This allows INDAR to fully test his designs for all kind of environmental conditions and to guarantee the best quality on his products.

Customized design solutions

for different environment applications:

Cold Temperatures
-30ºC, 50ºC

High Corrosion Resistant
C5M

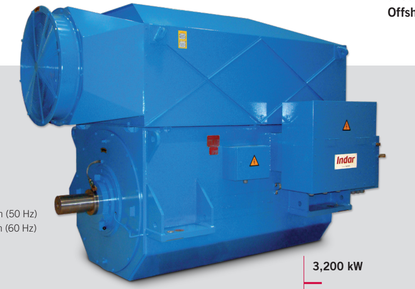
Desert Conditions
Sandstorm

Frequency
50 Hz / 60 Hz

Wind applications

Doubly Fed, xDFM & Squirrel cage

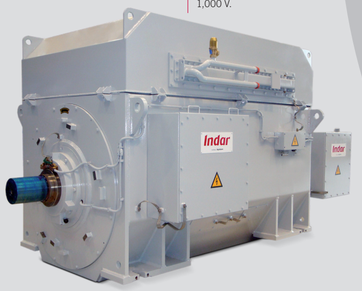
(Asynchronous)



3,150 kW
650 - 1,350 rpm (50 Hz)
780 - 1,620 rpm (60 Hz)
12,000 V.

2,520 kW
690 - 1,300 rpm (50 Hz)
815 - 1,531 rpm (60 Hz)
690V.

3,200 kW
1,000 - 2,000 rpm (50 Hz)
810 - 1,740 rpm (60 Hz)
1,000 V.



2,070 kW
1,000 - 2,050 rpm (50 Hz)
1,200 - 2,460 rpm (60 Hz)
690 V.

1,545 kW
700 - 1,300 rpm (50 Hz)
840 - 1,560 rpm (60 Hz)
12,000 V.

Wind applications

Permanent Magnet Generators (PMG) or Excitation

(Synchronous)

PMG
2,670 kW
500 - 1,900 rpm (50 Hz / 60 Hz)
690 V.

PMG
100 kW
60 rpm (50 Hz / 60 Hz)
400 V.

PMG
2,100 kW
500 - 2,000 rpm (50 Hz / 60 Hz)
690 V.

Power ranges from:

- from 800 kW to 6 MW (direct drive or medium or high speed) with **LV- PMG (< 1 kV).**
- from 800 kW to 10 MW (direct drive or medium or high speed) with **MV-PMG (< 15 kV).**
- from 70 kW to 300 kW (direct drive) with **LV and MV - PMG.**
- **DFM systems:** from 660 kW to more than 6 MW.
- **xDFM technology:** from 1.5 to 6 MW.
- **Synchronous and asynchronous generators up to 10 MW.**