

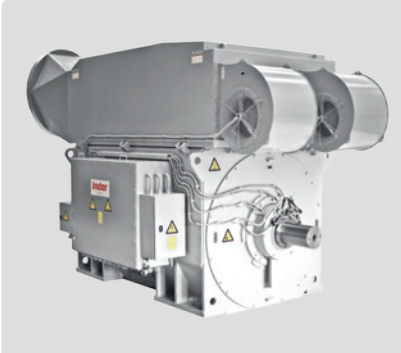




Indar comprises the range of general product of the wind power industry in its more usual speed and power range. However, the core of the series relies on its adaptation to the customer's specific requirements and the integration into the complete solution with the converter. With proven experience in these product ranges, the main design standards are reliability, performance optimization and cost-effectiveness. The following table shows the main design features of the DFIG, PMG and IG series.

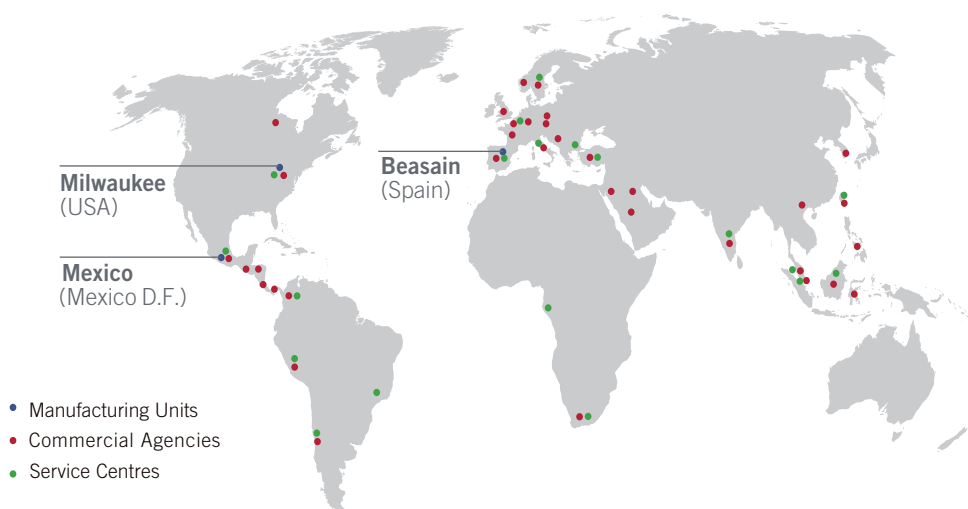
	DFIG	PMG	IG
Main features	Doubly Fed Induction Generator	Permanent Magnet Generator	Squirrel Cage Asynchronous Generator
Rated power range	Up to 9 MW	Up to 9 MW	Up to 9 MW
Electrical layout	Partial converter	Full converter	Full converter / Direct-on-Line (DoL)
Voltage	690 V - 12000 V	690 V - 6600 V	690 V - 6600 V / <12000 V for DoL
Gen/Network frequency	50 Hz - 60 Hz	Variable / 50 Hz - 60 Hz	Variable / 50 Hz - 60 Hz
Cooling	Air-air / Air-water	Air-air / Air-water / Water jacket	Air-air / Air-water / Water jacket
Insulation	F-H	F-H	F-H
Temperature range	-30°C / +50°C (-40°C optional)	-30°C / +50°C (-40°C optional)	-30°C / +50°C (-40°C optional)
Construction	Horizontal (IM1001/IM1101)	Horizontal (IM1001/IM1101/IM3001)	Horizontal (IM1001/IM1101)
Protection degree	IP54 / IP55 (slip-rings IP23 / IP54)	IP54 / IP55	IP54 / IP55
Corrosive protection	C3H - C4H - C5M	C3H - C4H - C5M	C3H - C4H - C5M
Applications:			
	<ul style="list-style-type: none"> Onshore Offshore 		

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.



Indar

An **Ingeteam** brand



Your driving force