

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 convertes.

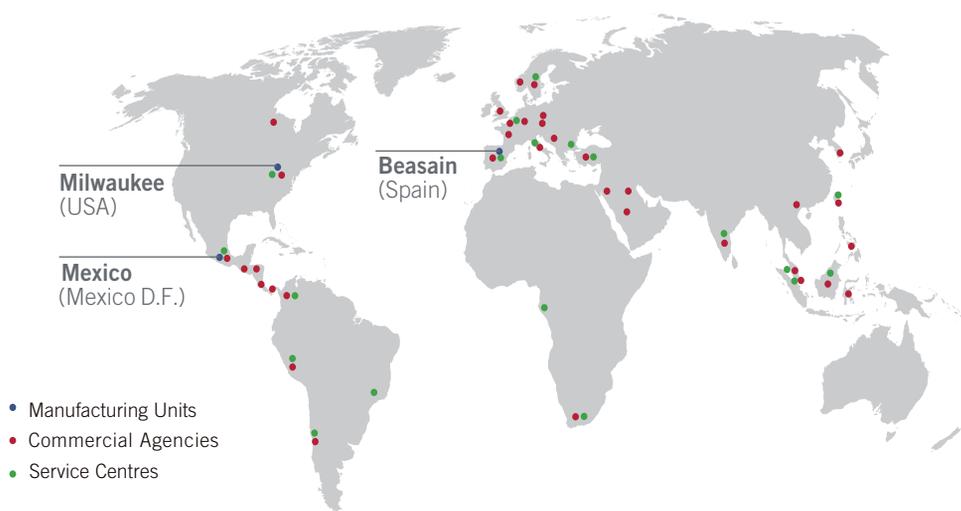
Main features	Indar SM
<ul style="list-style-type: none"> <li>Power</li> <li>Excitation</li> <li>Speed</li> <li>Voltage</li> <li>Thermal</li> <li>Power Supply</li> </ul>	<p><b>From 1 MW to 50 MW</b>  <b>Brushless or direct excitation (with brushes)</b>  <b>Up to 1,800 rpm / <math>\geq</math> 4 poles</b>  <b>From 400 V to 15,000 V</b>  <b>Up to class H (180°C)</b>  <b>Converter or sinusoidal</b></p>
<ul style="list-style-type: none"> <li>Construction</li> <li>Protection level</li> <li>Cooling</li> <li>Supports</li> </ul>	<p><b>Horizontal or vertical</b>  <b>Up to IP <math>\leq</math> 56</b>  <b>Air Cooled or Water Cooled</b>  <b>With antifriction bearings or sleeve bearings</b></p>
<ul style="list-style-type: none"> <li>Main options</li> </ul>	<p><b>Lubrication groups, hydrostatic groups, special sensors (vibrations, temperature, speed, etc.), transformers.</b></p>

INDAR motors can be fed both directly from the grid and from frequency converters.

- Fixed speed motors are fed directly from the grid, but comparing with induction motors their reactive power consumption is adjustable. Due to the high inrush currents when starting, and in order to avoid voltage dip on power supply, different starting method should be analyzed case by case, such as: Direct on Line (DOL), reactor, soft starter (LCI),...
- In some applications, variable speed motors can provide clear benefits (energy savings, torque requirements...). INDAR has the knowledge and experience to ensure the integration between frequency converter and the motor, adjusting the design and manufacturing process.

# **Indar**

**Ingeteam** Group



## Your driving force