

## Turbomachinery High-speed motor elements



- Induction and pm-motor elements
- Stator OD up to **900mm**
- Power up to **1MW**
- Speed up to **500krpm**

# Turbomachinery

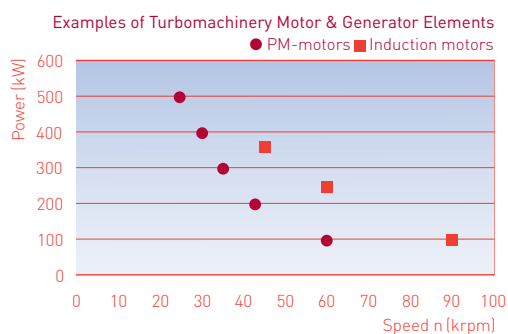
## High-speed motor elements



Highlights of e+a Permanent Magnet Synchronous Machine elements for Motors and Generators are:

- ✦ Maximal power density
- ✦ Best efficiency
- ✦ Can be used in motor or generator mode
- ✦ For maximal shaft diameter
- ✦ Fully customized
- ✦ Low rotor heating
- ✦ Simple mounting and dismounting of rotor elements to the shaft

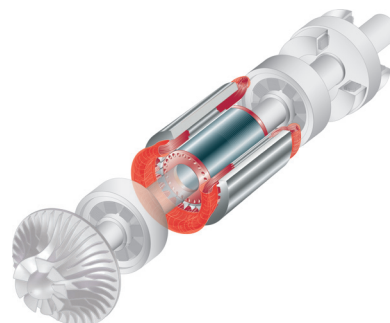
Permanent magnet stator & rotor elements are available in 2 or 4 pole configuration for turbo machine applications. 2-pole machines can be used in hyper speed applications or with a cost-saving drive in high speed applications. 4-pole stator & rotor elements are designed to provide maximum power density at best efficiency. All pm-rotors are fitted with CFRP-sleeves which are developed in-house to withstand high strains and stresses.



Highlights of e+a Induction Machine elements for Motors and Generators are:

- ✦ Maximal robustness (mechanical and thermal)
- ✦ Insensitivity to temperature
- ✦ Can be used in motor or generator mode (with restrictions)
- ✦ Cost effectiveness
- ✦ Easy setting-up operation
- ✦ Fully customized
- ✦ Mature technology and reliability
- ✦ Several cooling strategies applicable

For turbo machine applications, 2-pole induction machine designs offer several advantages due to their robust design and simple operating conditions. The rigid rotor-shaft assembly allows a tolerant operation in mechanically and thermally demanding environments. Together with its low requirements to converters, it is an excellent alternative to 2-pole permanent magnet synchronous machines.



e+a offers support regarding all aspects of permanent magnet synchronous machines and induction machines already in the project planning phase. With state-of-the-art simulation tools, a well equipped test bench and experience of many challenging motor designs, e+a also offers consultation in machine cooling, shaft dimensioning, selection and evaluation of the VFD as well as support in trouble shooting.

