

we invent solutions

we develop customized solutions from idea to production and beyond.

## Project details: Medical technology compliant OEM servo controller with Power Factor Correction (PFC)

### Industries

- Medical Technology, Mechanical Engineering, Propulsion Technology

### Technology fields

- Propulsion Technology

### Project requirements

- The aim of the project was the development of a servo controller with input-side Power Factor Correction (PFC) for sensorless control of permanent-magnet synchronous motor with subsequent production. Special challenge here was the fulfillment of conformity for medical technology products in accordance with the guidelines of EN 60601.

### Facts / Highlights

- Wide-range voltage input by PFC
- Medicine technically standards-compliant leakage (<0.5 mA) and electromagnetic compatibility (EMC) without isolating transformer
- Operation of a synchronous motor with 22,000 U/min
- Sensorless control by observer-based approach
- Limiting the max. performance by overriding control
- Parameterization via smartphone / tablet / WiFi
- Co-processor for PLC functionality
- high efficiency
- fieldbus connection

### Services of KNESTEL

- Potential analysis, target price estimate, project management, requirements specification, project planning, development software and hardware, electrical and mechanical construction, EMC testing, prototyping, serial production

### Possible applications

- Customized propulsion solutions in all sectors and areas with wide-range power supply and the highest standards of EMC, system perturbation and leakage currents.

