

we invent solutions

we develop customized solutions from idea to production and beyond.

Project details: Dual frequency converter

Industries

- Mechanical Engineering, Propulsion Technology

Technology fields

- Propulsion Technology, Bus Systems and Radio, CAE; Measurement, Control and Regulation Technology

Project requirements

- The aim of the project was the development and subsequent production of a highly efficient, rotational speed- and torque stable (vector control), fanless dual frequency converter with 1 kW continuous power and 50% overload capability per engine. Also appreciable are the rough area of application (among other things, dirt, conductive dust) as well as the additional integrated peripherals (sensors, actuators, stepper motor, bus connection). The converter can be operated with 230V AC power supply and optional equipped with a PFC (Power Factor Correction). Thereby lower system perturbations and also the wide voltage range (90V-264V) can be realized.



Facts / Highlights

- PFC: Power Factor Correction
- Fanless, completely closed
- Synthesis of various propulsion technologies
- High price advantage to standard converters
- Minimal training required by the service employees due to compact operating software

Services of KNESTEL

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

Possible applications

- **Motor control:** highly accurate and efficient electric propulsion
- DC, BLDC (Brushless DC), EC, 1 ~ AC, asynchronous three-phase motors, permanently excited synchronous machines
- Power range: a few watts up to several 100 kW
- Voltage Range: DC low voltage (e.g. 24V) over 230V AC to 660V AC
- **Engine and component simulation:** An electrical motor is simulated realistically in a real-time simulation in software on a motor-simulation model.
- **Battery simulation:** for this, battery technologies are simulated realistically in a real-time simulation on a battery simulation model

