MPOWER – High Power Motor Control

NoAE Innovation Competition

Cluster 1: Powertrain & Electrification

BITS engineering

www.bitsz.de

MPOWER technology product example

- continuous current 500A
- peak current 750A (2min)
- output power 40kVA
- power density 24kVA/l
- frequency 10kHz

USPs

- **power density**
- **efficiency**

for synchronous PM motors

for motors based on LEANTEC technology

LEANTEC ANTRIEB

Fahrzeug-Elektro-Direktantrieb

Preisträger TOP 30

NoAE Innovations-Wettbewerb 2009

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Product details

- compact design
- high efficiency
- torque and speed controls
- efficiency > 98%
- power density up to three times higher than comparable products

Application areas

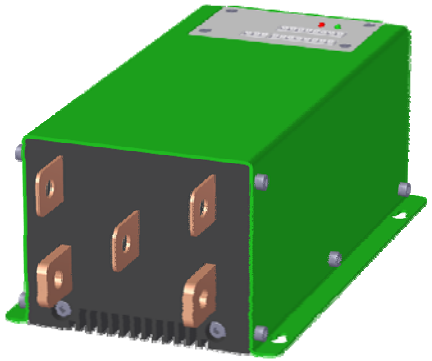
- hybrid cars
- electric motorcycles
- electric vans
- mobile machines

Product versions

flat rear

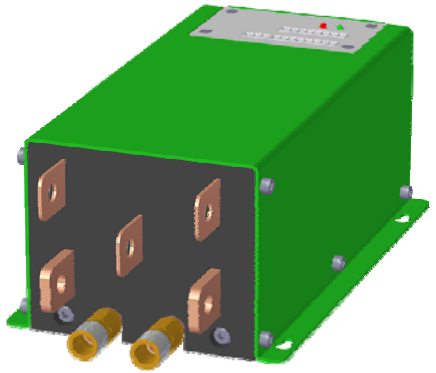
5kVA/l (100A)

Air cooling



12kVA/l (250A)

Water cooling



24kVA/l (500A)

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LEANTEC Competence Network
Experts for …

→ new **topologies** — High pole transverse flux reluctance motor drive with disc-rotor design

High pole design **–** high torque density

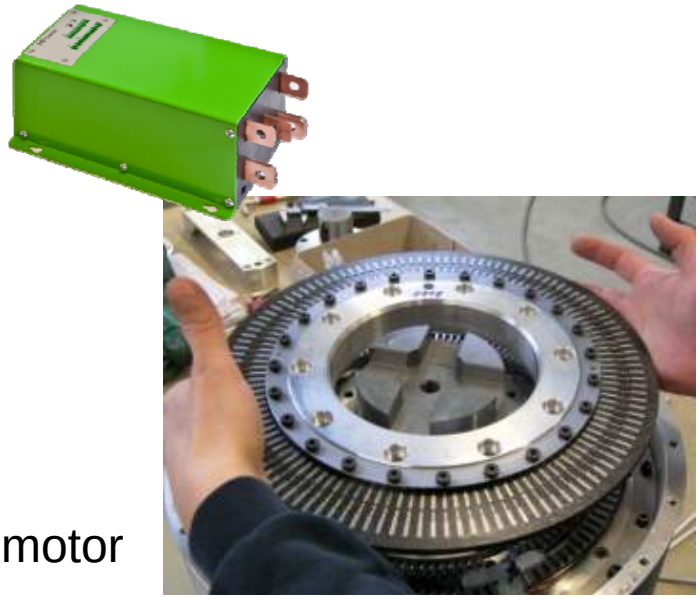
→ new **materials** — carbon fiber, soft magnetic composites

→ new **electronic drive control system**
for advanced high efficiency flux vector control

Development and production of highly efficient electric direct drives

→ **reluctance drives**
→ **PM drives**

…with the electronics **directly mounted** on the motor



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