CALNETIX
TECHNOLOGIES

Leading High-Speed Motoring
and Generating Technologies for
Defense & Aerospace Applications

High-Speed Electric Motor Generators

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Calnetix Technologies is providing the defense and aerospace industries with lower cost solutions, faster implementation times and increased system reliability leveraging its crossover high-speed technologies from its industrial and automotive segments. These technologies have been proven in commercial and industrial applications, such as compression, pumping, air/gas movement and control, turbocharging, turboexpansion and power generation. Calnetix cutting-edge high-speed technologies will help improve system performance and reduce total cost of ownership in defense and aerospace applications.

Calnetix's Permanent Magnet (PM) Motor Generators have been developed using advanced engineering methods. These units range from only a few watts to megawatt power levels with speeds ranging from 10,000 RPM to 120,000 RPM and beyond. The company offers Magnaforce™ high-speed motors and generators for low voltage applications at less than 1 MW power level, and Ultraforce™ high-speed motors and generators for medium voltage applications. Whether converting mechanical power to electrical or converting electrical power to mechanical, Calnetix PM motor generators provide the following advantages:

Advantages

- » High-speed and high-frequency operation
- » High system efficiency
- » Optimized motor performance
- » High-temperature operation
- » Very compact size
- » High availability and reliability
- » Low maintenance and lifecycle cost
- » Customization for targeted applications

Example: Magnaforce™ Motor Generator

Application: Turbo Generator
Power – 100 kW
Speed – 105,000 RPM
Weight – 16.5 lbs

Application: Starter Generator
Power – 120 kW
Speed – 57,000 RPM
Weight – 27.4 lbs

Example: Ultraforce™ Motor Generator

Power – 1.0 MW
Speed – 15,000 RPM
Weight – 2,500 lbs

Calnetix's Magnaforce™ machines are comprised of PM rotors and companion stators for constant torque applications. Smaller rotors feature metal sleeve construction, while large units employ Calnetix's proprietary composite carbon sleeve technology. Each companion stator is optimized to provide trouble-free service over an extended lifetime.

Calnetix's Magnaforce™ motor generators are designed to provide maximum power density while maintaining high operating efficiency and optimum thermal performance. They are ideal for many defense and aerospace applications where maximum power density and minimum weight are paramount. The incorporation of Calnetix's advanced oil-free frictionless active magnetic bearings allows for unrivaled performance and extended maintenance intervals in a wide variety of applications.

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