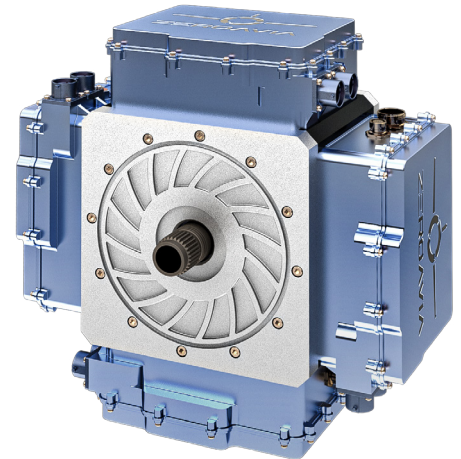


HyperCore is a leading-edge technology, with a high speed, high performance integrated motor drive. The fully Integrated Motor-Inverter system is designed to be powerful, compact, and ultra-efficient. The motor is a permanent magnet electric machine combined with 4 Silicon Carbide inverters. The full integrated edrive enhances an optimized integration of aircraft, engine compartment. Designed and produced for high altitude and unpressurized areas, optimized thermal, mechanical, and electrical integration allows the HyperCore to achieve high reliability and long life time by reducing cable weight, interfaces, and coupling, connectors. The inverters are fully equipped for high-speed bus communication and a high degree of redundancy and availability.



FEATURES

- Comply with SC part 33 – FAA, and E19 EASA
- Continuous Power 750kW @ 75°C Coolant continuous
- Max Power 900kW for 5 min
- DC voltage: 600–820 Vdc
- Continuous torque: 360Nm
- Max Torque: 430Nm for 5 min
- Power Density full integrated motor with inverter: 10kW/kg
- 4x3 phase coil winding pattern for added redundancy
- 4 resolvers to give independent speed and direction to each inverter
- MTBF per MIL-HDBK-217F: 25,000 hr.
- Compliant: DO160-G
- 12 temperature sensors for reliable monitoring of condition
- Efficiency: 94–96% vs load and speed
- Low torque ripple below 2%
- Max speed: 24,000 RPM
- Coolant: Turbine oil and Water-Glycol (performances upon request)
- Fault-tolerant and fail-safe following MIL-PRF-GCS600A
- CAN bus communication for firmware upgrades, configuration programming and status reporting
- Analogue and digitally controlled torque, speed and DC power
- Dual redundant CAN interfaces

PHYSICAL

- Weight: 93 kg
- Dimension: 600 mm x 600 mm x 253 mm
- Connectors HV: AMPH Voltarius
- Connectors LVDC: MIL-DTL-38999

ENVIRONMENTAL

- Operation temperature: -45°C to 100°C
- Coolant temperature: -45°C to 75°C
- Altitude: up to 35,000 feet (unpressurised area)
- Temperature and Altitude: DO160-G CAT B2
- Temperature variation: DO160-G CAT A
- Vibration: DO160-G – S curve U
- Water proofness: DO160-G – CAT S
- Fire flammability: DO160-G – CAT B
- Emission RF: DO160-G – CAT LMH
- Lightning: DO160-G – CAT A3K3L3
(Upon request for higher CAT~B4)
- ESD: DO160-G – CAT A

ELECTRICAL INTERFACES – I/O

Resolver, Encoder and Encoder SIN/COS		8 DI/DO/Analog inputs		2 Throttle inputs		8 PT1000
P/N	HVDC	LVDC	HVAC CURRENT	OUTPUT POWER	FUNDAMENTAL FREQUENCY	LV CONNECTOR
ZA 900-IMI	600–820 Vdc 1000 Vdc Unloaded	18–35 Vdc Transient 50 Vdc	300 Arms 330 Arms for 1 min	750kW continuous	Up to 2 kHz	Ethernet Bus RS485 RS232 2 CAN buses



DATASHEET-ZA-0004-REV-01



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