

Electrical Motor Controller 150 kW
EVI160A

MAIN FEATURES

- Dedicated to permanent magnet motor
- 3-phase inverter with IGBTs
- Max input voltage: 450 VDC
- Motor current rms: 350A (605 A / 30 sec.)
- Power : 150kW (200kW / 30s)
- Torque or speed control
- Control & Monitoring: CAN2.0 bus
- Water cooling
- Waterproof case IP65

FUNCTIONALITIES

- Advanced control algorithm for optimal power management and efficiency
- Braking recovery management
- Bootloader for field upgradeable firmware
- Position sensor : Multiple possibilities (SinCos by default)

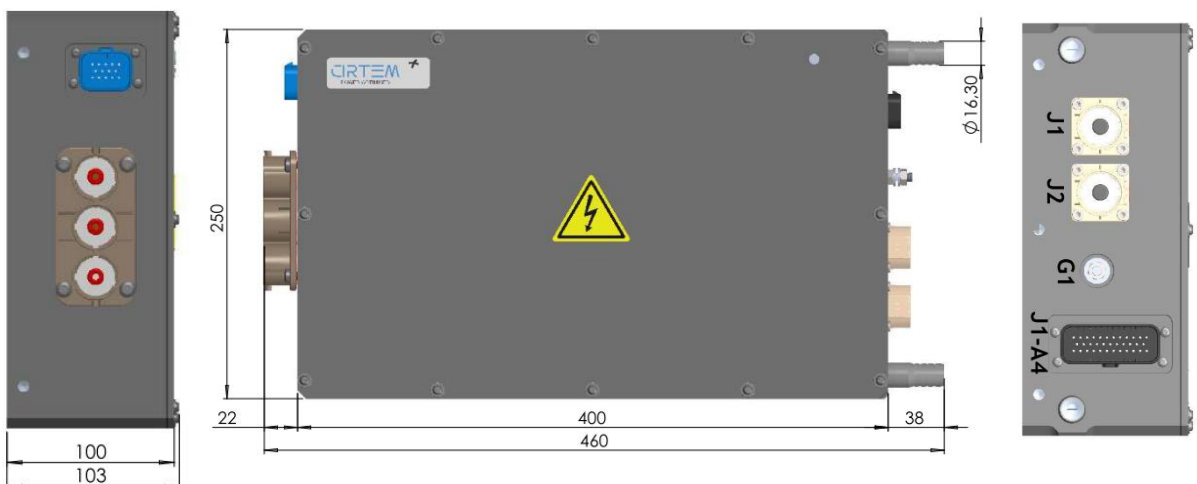
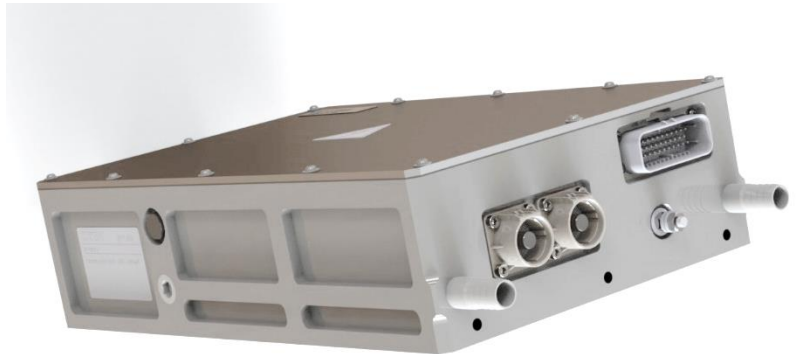
Main applications

EMBEDDED SYSTEMS

The EVI160A is a compact inverter solution which could be easily integrated on OEM. Thanks to its modularity, the EVI160A can be easily configured in order to fulfil most of powertrain applications.

LABORATORY MOTOR TESTING

With a power of 150KW and an easy interface connections, the CIRTEM electrical motor controller makes motor or system qualification easier.



Technical data

GENERAL	
Weight	15 kg
Volume	10 L (without connectors)
Sealing	IP65
Fixing	12 holes M8
Housing	Aluminium
ELECTRICAL CHARACTERISTICS	
Maximum input voltage	450 Vdc
Maximum motor current RMS	350 A continuous, 605 A for 30 sec.
Maximum electrical frequency	750Hz (1000Hz optional)
Efficiency	>95%
Auxiliary power supply	10 V to 16 V – 45 W
Insulation	2500V – 50Hz – 60s
ENVIRONMENTAL AND COOLING FEATURES	
Operating temperature range	-20 to +85°C
Storage temperature range	-40 to +85°C
Coolant	50 / 50 EGW
Maximum liquid temperature	80°C, current derating from 70°C to 80°C
Minimum coolant flow	10L / min
Coolant pressure drop	0,1 bar @ 10L / min & 0,4 bar @ 20L/min

Connections

- 2 Powerlock connectors with 70mm² cables to the battery
- 3 Powerlock connectors with 70mm² cables to the motor
- 2 cooling pipes (outside diameter 16 mm)
- 1 connector for the engine interface
- 1 connector for the supervisor interface

Vibrations & shocks standards

- Vibration on all three axes - 24 or 75 hours per axis @ speed 1 Hz / s: sine sweep from 10 to 21 Hz → 10 mm peak-to-peak movement, sine sweep from 21 Hz to 1.5 kHz → acceleration 90 m / s², sine sweep from 1.5 Hz to 3 kHz → acceleration 30 m/s²
- Shocks: 6x10 positive and negative mechanical shocks on the three axes of 25g 11 ms half sine
- Standards: CISPR25 - Class 1, ISO 16750-3 "Mechanical vibration", IEC 60068-2-27, ISO 16750-3 "Mechanical shock" and IEC 60068-2-27

Safety

- Short circuit of the motor in the event of a fault (to avoid the return of power in the battery and braking)
- Short circuit protection: Type 1 & 2
- Overcurrent protection (motor and battery)
- Thermal protection (motor and inverter)
- Auxiliary power monitoring
- CAN bus malfunction



At CIRTEM we create, develop and manufacture innovative power converters for optimized electrical systems.

Through our renowned technological research, our high end engineering and our high skill production sized for growing markets, CIRTEM is your OEM partner from the concept to commercial success !

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