

E-Motor 120kW / 130Nm

The 120kW E-Motor is a synchronous permanent magnet motor/generator primarily intended for hybrid and electric vehicles. The unit is powered via a high voltage three-phase electrical connection from an inverter, such as McLaren Applied Technologies' MCU-500.

An advanced liquid cooling scheme allows the motor to achieve sustained high power operation given the unit's modest size and weight.

When combined with the MCU-500, and powered from a 535V DC bus, the unit can be controlled via torque and/or speed demands via a CAN bus. The same performance characteristics can be achieved in motor and generator modes of operation.

In Detail

Key Features

- Permanent magnet synchronous motor
- SPM type
- High power density

Performance

- 120kW / 130Nm (transient)
- 110kW / 110Nm (continuous)
- Maximum speed 17,000rpm
- Efficiency 96% (120kW, 13,000rpm)

Electrical

- Input type: high voltage sinusoidal three-phase
- Nominal bus voltage 545V
- Maximum bus voltage 630V
- Minimum bus voltage 420V (for full performance)
- Leakage current <15mA

Mechanical

- Case diameter 185mm
- Case length 254mm
- Mass 26kg

Instrumentation and Diagnostics

- One Resolver for commutation

Cooling

- Max inlet temperature 55°C
- Min flow-rate 20l/min
- Pressure drop 0.6bar @ 20l/min
- Coolant type 50/50 water/glycol
- Max pressure 5bar

Environmental

- -20°C to 90°C (operating)
- -20°C to 120°C (static)
- Max motor skin temperature 65°C
- Rated to IP67
- Maximum mounting vibration 30g
- Complies with the essential protection requirements of 89/336/EEC

Images/Diagrams

E-motor

E-Motor Power Curve

Ordercodes

Description
E-Motor-120kW

Ordercode
O 030 525 000 001