The 4000W LiquaCore® power module is a high voltage liquid cooled DC-DC converter which steps down 700V and provides 24V output, common in hybrid and electric vehicle applications. The output voltage is electrically isolated from the input voltage and suits the conventional 24V accessories and HVAC system requirements of industrial and ecofriendly vehicles.

**Features:**
- 150A Battery Charger
- Liquid Cooled
- IP67 and IP6k9k Environmental Protection
- 550-850VDC Input Voltage Range
- 20-32VDC Output Voltage Range
- Galvanic Isolation Input - Output
- High Efficiency - Greater then 90%
- Automotive Grade Components
- Field Configurable CAN parameters

- **RoHS**

### Specifications

**Input**
- Voltage: 550-850VDC. Power delivered in the operational range will depend on Operating Envelope
- Transient Voltage: Up to 900VDC
- Inrush Current: 25A Maximum under cold start conditions
- Efficiency: >90% Typical

**Output**
- Voltage: 28VDC Nominal / 20 – 32VDC Adjustment
- Current: 150A Maximum
- Power: 4200W Maximum
- Ripple and Noise: 400mVp-p (20MHz Bandwidth)
- Load Regulation: 700mV Droop from No Load to Full Load (Designed to support droop current share when paralleled with other similar units)
- Parallel Use: May be paralleled with other like units or for increased system output – Standard unit must be paralleled with a battery for normal operation.
- Temperature Coefficient: <+/- 0.02% per ºC
- Dimensions: 17 x 7.6 x 2.3” (483 x 194 x 59mm)
- Weight: 12.3lbs, 5.6kg
- Model Number: LSM4k0-700-24
## Specifications

### Electronic Control Inputs

- **Remote Enable**: >7V input signal will enable the unit's Output.

### Connectors

- **Input**: IP67/IP6k9k connector rated to 750VDC
- **Output**: Heavy Duty M10x1.5 Threaded Studs
- **Control**: (Molex MX150L series)

### Environmental Specifications

- **Coolant Medium / Mixture**: 60/40 Propylene or 50/50 Ethylene Glycol/Water
- **Coolant Flow**: 5.68 L/Min (1.5GPM) at 7kPa (1PSID)
- **Inlet / Outlet Coolant Connections**: SAE-J1231 Type 1 beaded head fittings, hose dash size-8
- **Maximum Coolant Pressure**: 350kpa (50psi)
- **Inlet Coolant Temperature**: -40 to +60°C
- **Working Ambient Temperature Mixture**: -40 to +80°C
- **Low Temperature Turn On**: -40°C minimum
- **Warm up Time**: 1 minute
- **Storage / Transportation**: -40°C to +85°C
- **Vibration, Operating**: The converter is designed to meet vibration profiles used in automotive applications: IEC 60068-2-64 Spectrum A.3 (Equipment in wheeled vehicles) Category 1 and Category 2 MIL-STD-810G, Method 514.6 (Ground Mobile)
- **Vibration, Transport**: The packaged unit is designed to withstand, without damage MIL-STD-810G Method 514.6 Category 4-Common Carrier
- **Salt Fog**: MIL-STD-810C, Method 509.5

### Protection

- **Output Over-Voltage**: Output Hiccup on OV
- **Output Over-Current**: The converter becomes a current source during OC, down to short circuit. Unit shuts off if output voltage drops below 15V.
- **Over-Temperature**: Shutdown with auto recovery

### Communication

- **Communication Protocol**: CAN Bus field configurable to J1939 or CAN open
- **CAN Bus Signals**: DC In OK, Output OK, Output Current Monitor, Output Voltage, heat sink temperature

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![Diagram of DC-DC converter](image-url)