AMPEX

MOTION APPLIED

MCU-600 PRODUCT SUMMARY

MCU-600 800V SiC INVERTER

PRODUCT DESCRIPTION

Motion Applied's MCU-600 inverter leverages over a decade of expertise in Silicon Carbide (SiC) technology. Capable of powering electric motors to over 400 kW[1] peak and 250 kW[2] continuous output, MCU-600 achieves this at industry-leading weight and volume. Designed primarily for automotive applications, it is also well-suited for electrification projects across aerospace, marine, defence and energy generation.

Performance	
Voltage	Up to 900V
Peak current	Over 588 Arms[3]
Continuous current	320 Arms
Efficiency	Over 97% typical, 99% peak
Switching frequency	8 – 32 kHz continuously variable at 1kHz rate
Electrical frequency	Up to 2.5 kHz

Communication and Motor Feedback	
Operating system	AUTOSAR 4.3
Low voltage input	8 – 32 V nominal
Vehicle communication	3 CAN2.0 interfaces (2 with FD option)
Debugging	1 Ethernet interface
Motor feedback	1x position and 3x temperature feedback inputs

Safety	
Functional safety	ISO26262 SEooC ASIL D capable
Safety features	Active Short Circuit

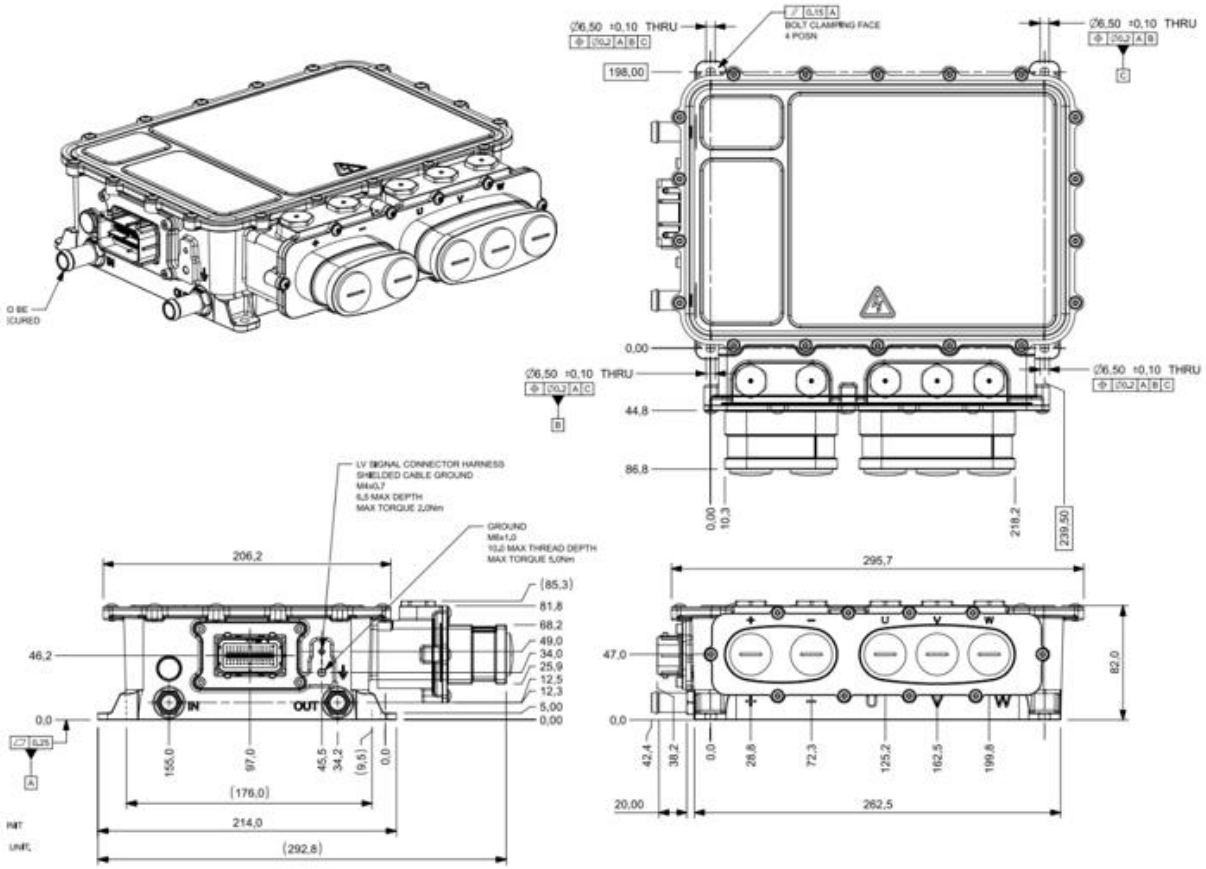
Mechanical	
Dry mass	6.4 kg
Volume	4.85L
Ingress protection	IP67 and IP6k9k

Environmental	
Coolant	50/50 water/glycol[4]
Max. coolant inlet temp.	70°C[4]
Min. coolant flowrate	10 L/min[4]
Max. coolant pressure	2 Bar_{gauge}
Operating temperature	-40 °C to +105 °C

1. 750 V input voltage, phase current 524 Arms, power factor 0.875, 10 seconds duration, 8 kHz switching frequency
2. 750 V input voltage, phase current 320 Arms, power factor 0.875
3. 70°C coolant, 10 L/min flowrate, 8 kHz switching frequency, 2 seconds duration. Figure limited by test motor.
4. To achieve rated specification

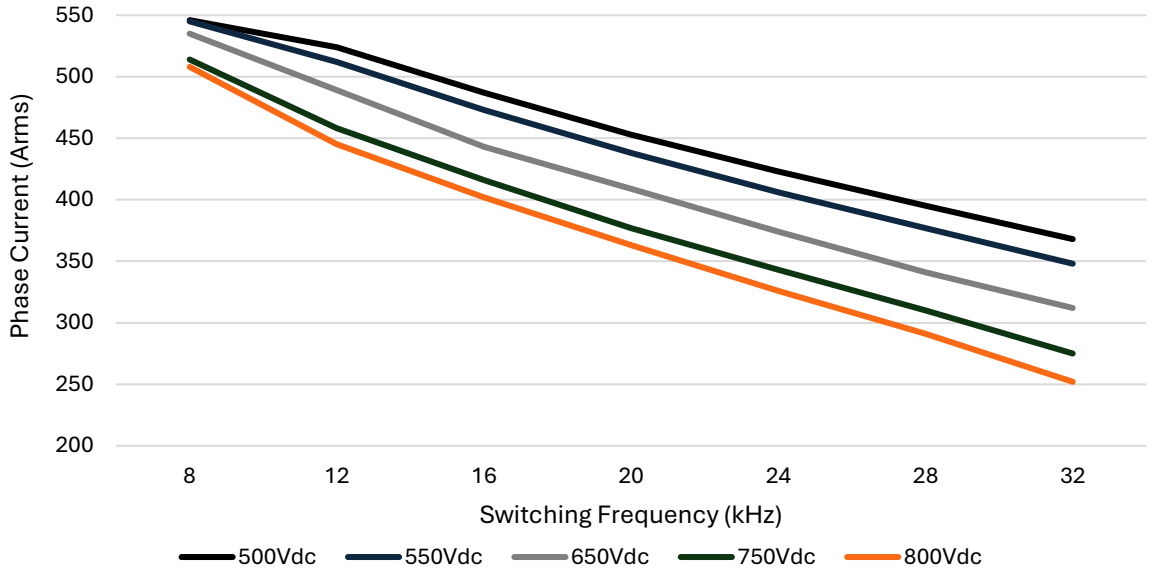
MCU-600 PRODUCT SUMMARY

MECHANICAL PROFILE



PERFORMANCE MAP

10s rating using 70°C water/glycol coolant at 10L/min. Modulation index < 0.6, Power Factor > 0.9



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