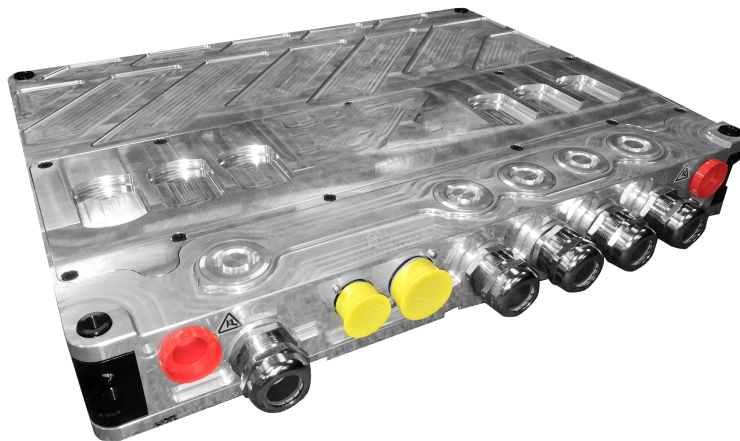


CASCADIA MOTION

PM250 Propulsion Inverter



6 (0-5V) Analog Inputs
 2 selectable PT100 / PT1000 RTD Inputs
 8 Digital Inputs STB/STG
 4 High Side Driver Outputs
 2 Low Side Driver Outputs
 1 Resolver Interface
 1 Sin-Cos Encoder Interface
 2 CAN 2.0A/B Ports .25-1MB adjustable rate and offset
 RS232 Programming Port
 M32 Cable Gland Connections
 Designed to ISO16750 heavy vehicle climatic, mechanical, and environmental requirements
 ISO20653 high pressure wash rated IP6K9K / IP67
 Easy to use CAN-based network node
 CAN Database (DBC) Available Standard J1939 on request
 Extensive feedback broadcast messaging for datalogging
 Calibration with production tools
 PC-based setup and programming tools available for free
 M12-ORB coolant ports—can be adapted to any hose fitting, any angle
 Robust, fault-tolerant IGBT power stage
 No internal DC-link EMI Filter
FUNCTIONAL SAFETY
 Compatible with ISO26262 vehicle safety certification (not standalone compliant)
 Command Safety Watchdog
 ISO6469 High Voltage Safety

Controller Model	PM250DX	PM250DZ	
DC Voltage – operating	50—400	100—800	V _{DC}
DC Overvoltage Trip	420	840	V _{DC}
Maximum DC Voltage – non-operating	500	900	V _{DC}
Motor Current Continuous*	450	450	A
Motor Current Peak**	750	600	A _{rms}
Output Power Peak (electrical)**	200	300	kW
DC Bus Capacitance	1500	645	μF
Size and Volume	523 x 391 x 75 / 15.4		mm/L
Weight	18.2		kg
Active Discharge via motor winding to <50V	< 1		sec
Vehicle System Power	9 .. 16		V _{DC}
Inverter PWM Frequency	12 (6..16 adjustable pending)		kHz
Operating Temperature Range – coolant water	- 40 .. +80, (derate to zero 80..105)		°C
Coolant Flow Rate	24 .. 30 (3 GPM min)		LPM
Coolant Pressure Drop (60°C coolant / 10 LPM)	1.3 (132kPa / 18psi)		bar
Maximum Coolant Pressure (absolute)	2.75 (275kPa / 40psia)		bar
Operating Shock (ISO 16750-3, Test 4.2.2.2)	500 (50g), pending		m/s ²
Operating Vibration (ISO 16750-3, 4.1.2.4—IV)	27.8 (3g _{rms}), pending		m/s ²
Cable Gland Size	M32		
Conductor Size min .. max recommended	#2/35 .. #000/95		AWG/mm ²
Cable OD min .. max recommended***	11 .. 21		mm

* Continuous current is limited by the size of the conductor.

** Peak current is defined as a maximum of 30 seconds.

*** Depending on cable type, an additional sleeve may be needed to seal the Cable O.D. to the cable gland.

Ratings subject to change without notice—consult factory

These Propulsion Inverter products are designed and manufactured to comply with the following international standards: ISO6469, ISO6493-3, ISO16750, ISO20653, IEC60950, <IEC61000 pending>

PM250DZR Racing Version available under special order:

- provides 700Arms peak current in the smallest package for 800V-class applications

This version trades useful operating life for increased peak power handling in transients. Suitable for:

- Motorsport
- Hybrid supercar



Cascadia Motion LLC

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