

CASCADIA MOTION

RM300 Propulsion Inverter



5 (0-5V) Analog Inputs
 2 RTD inputs PT100/1000
 8 Digital Inputs 6-STB / 2-STG
 2 High Side Driver Outputs
 1 Resolver Interface
 Optional Sin-Cos Encoder Interface (-SP option)
 2 CAN 2.0A/B Ports .25-1MB adjustable rate and offset
 RS232 Programming Port
 Amphenol Powerlok™ power connectors
 Internal DC-Link EMI Filter
 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
 Multiple Coolant port options
 Robust, fault-tolerant IGBT power stage
FUNCTIONAL SAFETY
 Compatible with ISO26262 vehicle safety certification (not standalone compliant)
 HVIL Interlock on connectors
 Command Safety Watchdog

Controller Model	RM300DX	RM300DZ	
DC Voltage – operating	100—400	200—820	V _{DC}
DC Overvoltage Trip	430	850	V _{DC}
Maximum DC Voltage – non-operating	500	900	V _{DC}
Motor Current Continuous *	300	300	A
Motor Current Peak **	900	700	A _{rms}
Output Power Peak (elect) **	360	440	kW
DC Bus Capacitance	1710	750	μF
Size and Volume	632 x 332 x 89 / 18.7		mm / L
Weight	20		kg
Active Discharge via motor winding to <50V	< 1		sec
Passive Discharge (internal resistor) to <50V	< 120		sec
Vehicle System Power	9 .. 32 (12V / 24V Systems)		V _{DC}
Inverter PWM Frequency	12 (6..16 adjustable pending)		kHz
Operating Temperature Range – coolant water	- 40 .. +80, (derate to zero 80 .. 100)		°C
Coolant Flow Rate	24 .. 30 (6 GPM min)		LPM
Coolant Pressure Drop (60°C coolant / 30 LPM)	0.35 (35kPa / 5psi)		bar
Maximum Coolant Pressure (absolute)	2 (200kPa / 30psia)		bar
Operating Shock (ISO 16750-3, Test 4.2.2.2)	100 (10g), pending		m/s ²
Operating Vibration (ISO 16750-3, 4.1.2.4 Test IV)	27.8 (3g _{rms}), pending		m/s ²
EMC compatibility	IEC61000 / CISPR-25 pending		
Conductor Size min .. Max recommended	120, 135 and 150mm ²		mm ²

* limited by 500A connector rating—temperature rise

** peak is 10seconds

Ratings subject to change without notice—consult factory

These Propulsion Inverter products use 100% Automotive qualified components, IPC Class 3 fab and assembly, and are designed and manufactured to comply with the following international standards: ISO6469, ISO6493-3, ISO16750, ISO20653, IEC60950, <IEC61000 pending>



Cascadia Motion LLC

power electronics, motors and propulsion controls

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