

CASCADIA MOTION

RM100 Propulsion Inverter



3 (0-5V) Analog Inputs
 2 RTD inputs PT100/1000
 2 Digital Inputs STG
 2 High Side Driver Outputs
 1 Resolver Interface
 Optional Sin-Cos Encoder Interface (-SP option)
 2 CAN 2.0A/B Ports .12-1MB 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	RM100DX	RM100DY	RM100DZ	
DC Voltage – operating	50—420	100—620	200—820	V _{DC}
DC Overvoltage Trip	450	650	850	V _{DC}
Maximum DC Voltage – non-operating	500	700	900	V _{DC}
Motor Current Continuous	300	200	150	A
Motor Current Peak*	400	250	220	A _{rms}
Output Power Peak (elect)*	120	130	140	kW
DC Bus Capacitance	500	350	250	μF
Size and Volume	268 x 331 x 85 / 7.6			mm / L
Weight	8.0			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	8 .. 10 (2 GPM min)			LPM
Coolant Pressure Drop (60°C coolant / 10 LPM)	0.35 (35kPa / 5psi)			bar
Maximum Coolant Pressure (absolute)	2 (200kPa / 30psia)			bar
Operating Shock (ISO 16750-3, Test 4.2.2.2)	500 (50g), <i>pending</i>			m/s ²
Operating Vibration (ISO 16750-3, 4.1.2.4 Test IV)	27.8 (3g _{rms}), <i>pending</i>			m/s ²
EMC compatibility	IEC61000 / CISPR-25, <i>pending</i>			
Conductor Size min .. max recommended	#2/35 .. #000/95			AWG/mm ²

* 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>



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power electronics, motors and propulsion controls

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