



# PM250 INVERTER



## PM250DZR RACING VERSION AVAILABLE BY 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 motorsports and supercars/hypercars. Requires coolant temperature to be less than 60°C to take advantage of -R current increase.

## FEATURES

- 6 (0-5V) Analog Inputs
- 2 selectable PT100/ PT1000 RTD Inputs
- 8 Digital Inputs STB/STG
- 4 High Side Driver Outputs
- 1 Resolver Interface
- 1 Sin-Cos Encoder Interface (-SP Option)
- 2 CAN 2.0A/B Ports 0.25-1MB adjustable rate and offset
- RS232 Programming Port
- Designed to ISO16750 heavy vehicle climatic, mechanical, and environmental requirements
- ISO20653 high pressure wash rated IP6K9K / IP67
- Easy to use CAN-based control and feedback
- CAN Database (DBC) Available
- J1939 compatible CAN messages available
- Comprehensive fault logging and diagnostics
- PC-based setup and programming tools available for free
- -10 ORB coolant ports—can be adapted to any hose fitting, any angle
- Robust, fault-tolerant IGBT power stage
- No internal DC-link EMI Filter
- Command Safety Watchdog
- ISO6469 High Voltage Safety

The PM250 is a high-powered workhorse that delivers up to 700 Arms peak current in the smallest package for 800V-class applications. This inverter sets the standard for supercar and motorsports electric propulsion.

PM250	DX	DZ	Units
DC Voltage – operating	50-400	100-820	VDC
DC Overvoltage Trip	420	840	VDC
Maximum DC Voltage – non-operating	500	900	VDC
Motor Current Continuous	450	450	Arms
Motor Current Peak *	750	600	Arms
Output Power Peak (elect) *	280	300	kW
DC Bus Capacitance	1500	645	µF
Size and Volume	523 x 391 x 75 / 15.4		mm / L
Weight	18		kg
Active Discharge via motor winding to <50V	< 1		sec
Vehicle System Power	9 .. 16		VDC
Inverter PWM Frequency **	12 (6..16 variable with upgrade)		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 / 24 LPM)	1.3 (132kPa / 18psi)		bar
Maximum Coolant Pressure (absolute)	2.75 (275kPa / 40psi)		bar
Operating Shock (ISO 16750-3, Test 4.2.2.2)	500 (50g), pending		m/s <sup>2</sup>
Operating Vibration (ISO 16750-3, 4.1.2.4—IV)	27.8 (3grms), pending		m/s <sup>2</sup>
Cable Gland Size	M32	M32	
Conductor Size min .. Max recommended	#2/35..#000/75		AWG/ mm <sup>2</sup>
Cable OD min .. max recommended ***	11 .. 21		mm

Ratings subject to change without notice—consult factory

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

\*\* Gen5 control upgrade is available on some applications which adds a variable PWM rate function. This allows lowering of the PWM rate for up to 33% more peak current and raising of the PWM rate at very high motor speeds for such applications needing it.

\*\*\* Depending on the cable type, an additional sleeve may be needed to seal the cable.

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