

SynQor – Higher-power DC-DC converters for rail transportation applications

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SynQor has added two higher-power DC-DC converters to its RailQor line of products. The new converters triple the usable power in the quarter-brick footprint to 150W. In the half-brick package the power capability is increased to 252W – five times the previously available level.

The ruggedized, next-generation, board-mountable, isolated, fixed switching frequency DC-DC converters use synchronous rectification to achieve power conversion efficiencies up to 91% at full load and 93% at 50% load; while still maintaining 80% or greater efficiency at light load. Each module is supplied completely encased with an aluminium baseplate to provide protection from harsh environments.

The new quarter- and half-bricks come in four different input voltage ranges: 9-36V, 42-110V, 66-160V and 12-155V. There is a selection of standard output voltages (5, 12, 15, 24) and power levels (up to 252W) that make the RailQor line of converters suitable for a variety of systems in locomotive and railway electronics.

The robust DC-DC converters permit an operating baseplate temperature range of -40C to +100C. The converters will deliver maximum output power with minimal to no derating as long as the baseplate is maintained at 100C or below.

The versatile converters are designed to address EU EN50155 standard requirements for 'Railways Applications Electronic Equipment Used on Rolling Stock'. The use of fixed switching frequency technology provides predictable EMI performance, which greatly simplifies filtering design.

The converters feature on/off control referenced to the input side, remote sense for the output voltage and an output voltage trim range of -20%, to +10%. Protection features include input under-voltage lockout, output current limit and short circuit protection, active back bias limit, output over-voltage protection and thermal protection. All models have at least 1000Vdc, 100Mohm REINFORCED input-to-output isolation and calculated MTBF values in excess of 1Mhrs, and they are fully 6/6 RoHS compliant, says the company.

For more information please contact Conical Technologies on 012 347 5035, daniel.haywood@conical.co.za