



MPE
Quality, Reliability, Performance

Company Bulletin

for EMC, EMP & TEMPEST Protection

Issue 9



Multi-line EMC filters Types 1 and 2 for single- and multi-speed motors on military vehicles



Feedthrough capacitors for military vehicles



EMI-suppressed 24V alternator shroud

Bespoke solutions tailormade for military vehicle filters

According to the latest figures, defence spending worldwide increased during 2015 and is set to grow further during 2016. Unsurprisingly within Europe, the UK, France and Germany allocate the largest defence budgets. However, in a reversal of recent yearly trends, the proportion of these budgets being invested in land-based vehicle platforms is once again on the rise. Within these ever more sophisticated defence vehicle platforms, the threat of interference between equipment is ever more prevalent, and the need to ensure EMC integrity ever more critical.

Whilst military vehicle filters have always been a well-established MPE offering, MPE have recently updated their military vehicle catalogue to encompass the full breadth of standard ranges and describe MPE's custom capability in greater depth as well as various updated compliances.

MPE have been designing and manufacturing custom EMC filters for military vehicles for more than 50 years. This has provided a wealth of experience and understanding of the types of suppression required to provide EMC solutions for a wide variety of applications on military vehicles and enable them to comply with the relevant military EMC specifications.

During this time MPE has supplied thousands of filter and capacitor solutions, all of which will have been tested and approved for use in their specific end application. Many of these designs have been NATO codified, and many have also been allocated UK MOD Fighting Vehicle registration numbers for use on military vehicles. All products are designed and manufactured by MPE in the UK in an ISO 9001:2008 approved factory and, importantly, are RoHS compliant and CE marked.

Many MPE solutions relate to standard vehicle equipment such as alternators, wiper motors, blower motors, washer motors, oil cooler fans, air-conditioning equipment and engine management systems to enable vehicles to comply with Fitted For Radio (FFR) requirements. Other designs relate to more specialist devices such as beacons, smoke dischargers, door actuators, turret motors – and onboard ancillaries such as shielded containers, communications systems and medical equipment.

Experience has shown that, for every given application, the design will enable defence quality feedthrough capacitors to achieve the necessary high-frequency performance and – although the solution may vary either in current rating or number of filtered lines to suit the application – the type of filter circuit configuration will often be very similar.

Of course each customised filter solution adopted needs to be application-tested to verify that the equipment complies with the suppression figures as specified, but the chances of vehicle



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equipment passing first time is greatly increased compared to where general-purpose filters are used which are not specifically designed for the application.

What is more, the mechanical customisation of MPE's standard products is often necessary to accommodate practical constraints such as confined spaces, differing shielding requirements and alternative mounting arrangements, termination styles and connections.

You can download your personal copy of MPE's comprehensive, new, 14-page military vehicle filter catalogue from [here](#).