



MPE
Quality, Reliability, Performance

Company Bulletin

for EMC, EMP & TEMPEST Protection

Issue 3



The Amphenol Rhino 38999 Series, high-power, filtered connector

Ground-breaking filtered connectors & assemblies from Amphenol®

High-power, filtered connectors for military vehicles

Amphenol is one of the largest manufacturers of interconnect products in the world for the military, commercial aerospace and industrial markets, manufacturing a variety of electrical, electronic and fibre optic connectors, coaxial and flat-ribbon cable, and interconnect systems for use in harsh environments.

The company identified a distinct trend towards increased power and voltage requirements on such applications as military and electric drive vehicles, aircraft and communications base stations. Accordingly the new and innovative Amphenol Rhino 38999 Series of high-power, single-pole, connectors have been developed to fulfil those requirements and are simple and straightforward to install and to use.

Amphenol recognised that many military vehicle applications have a need for EMC suppression and traditionally utilise a box-type filter that adds unnecessary cost and takes up too much space. Hence Amphenol approached MPE last year with a view to developing a ground-breaking range of connectors with integrated filtering. In conjunction with Amphenol, MPE has produced the Rhino range of filtered connectors to deliver a high level of EMC suppression performance, yet in a footprint that can be used within very tight physical constraints.

The challenge was to deliver that high degree of suppression within the envelope of a filtered connector that provides mechanical compliance to MIL-DTL-38999 Series III and EMC suppression compliance to DEF STAN 59-411 and MIL-STD-461.

Amphenol's Rhino 38999 Series are now available with a standard range of cost-effective MOTS (Military-Off-The-Shelf) filters suitable for EMC suppression of COTS (Commercial-Off-The-Shelf) equipment on military vehicles. This, combined with the benefits of field-proven MIL-DTL-38999 Series III circular connectors and hyperbolic contacts, greatly extends the boundaries of high-power connector technology. Rhino has been developed in conjunction with MPE as a world-leading manufacturer of high-performance EMC and EMP filters and capacitor products.

[Click here to download the Amphenol Rhino filtered connectors datasheet](#)

High-power, filtered, interconnect assemblies

In co-operation with MPE, Amphenol now also supplies high-power, EMI- and EMP-filtered, interconnect assemblies, suitable for EMC suppression and EMP protection of COTS equipment on military vehicles. The assemblies are supplied with the Rhino connector interface.



The high-power, filtered, interconnect assembly new from Amphenol



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Assemblies can be supplied with C or Pi filter circuits and can also include high-power varistors that provide protection against EMP and lightning strikes. The assemblies are supplied with pin contacts at one end and sockets at the other.

The use of RADSOK® contacts creates an electrical interface that exceeds typical interconnect requirements via a hyperbolic socket contact construction. The latter distributes normal forces over a high percentage of the mating surface, to ensure a smooth and even engagement force with exceptionally high performance under vibration. The large surface area of the socket contact also results in a very low contact resistance, enabling much higher current ratings compared to other power contact designs. Designed to accord with the latest military and Industrial specifications, Rhino 38999 filtered connectors also meet stringent safety requirements.

[Click here to download the Amphenol filtered assemblies datasheet](#)

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