Press release: Electronic components / EMC filters / PCIM 2018

New development from SMP:
EMC filter with high frequency stability –
compact, quiet, versatile

Graben-Neudorf, Germany, May 2018. SMP Sintermetalle Prometheus GmbH & Co KG (SMP), manufacturer of soft-magnetic materials, inductive components and filter systems, presents EMC filters with high frequency stability for power electronic applications. The materials have been developed by SMP especially for this application and are now effective for frequencies up to the gigaHertz range. The new EMC filters will be exhibited alongside the familiar inductive components at this year's PCIM in Nuremberg, Germany.

EMC filters reduce interference currents in power converter systems which are generated by parasitic effects and cyclic elements of the system. The material plays an important part in this: the target is to achieve stable inductance over the entire frequency spectrum in order to maximise interference suppression. Compared with standard technologies which use materials such as ferrite, electrical steel sheets and nanocrystalline metal sheets, interference levels with the new EMC filters from SMP are as much as 40 dB[µV] (decibel microvolt) lower. The SMP filters are compact, up to 30 percent lighter, and noiseless because they are made from magnetostriction-free materials. The overall efficiency of the system is improved due to very low losses through the materials. Moreover, fewer filter components are needed, so volume is reduced and the cost effectiveness of the power electronic system as a whole is increased substantially. The filters can be manufactured with single or magnetically coupled chokes, and so offer a choice for reducing common mode and differential mode interference.

SMP specialises in customer-specific development and manufacture of filter systems and inductive components. The component portfolio is designed for currents of up to 2000 A, up to 3000 A for special applications, and for frequencies up to the gigaHertz range. The materials have been developed and manufactured by SMP specifically for this purpose and have high saturation induction of up to 2 Tesla. The individual components can be produced with dimensions from 19 mm to 300 mm and weights from 0.05 kg to 130 kg. The

temperature class H (up to 180 °C) insulation system is UL certified. Depending on the application, protection ratings up to IP66 are available. HL classes according to EN 45545 can be specified according to requirements.

The filter systems and inductive components are used in industrial applications in the power electronics, automation and signal processing sectors, in drive applications for railway engineering, electromobility and marine engineering among others, in medical technology, renewable energies and power supply and in the aerospace industry.

Photo:

Three-phase choke module (centre) and sine wave filters from SMP

SMP presents:

PCIM Europe 2018, the trade fair for power electronics, intelligent drive technology, renewable energy and energy management, from 5 to 7 June 2018, Nuremberg:
Hall 6, Stand 308

Company information:

SMP Sintermetalle Prometheus GmbH & Co KG develops and manufactures inductive components, filter systems, magnetically soft materials, cores and mouldings. The Products are manufactured according to individual customer specifications and marketed worldwide with an export quota of over 50 percent.

The company was founded in 1982 by material science expert Dr.-Ing. Vasilios Gemenetzis for the purpose of manufacturing sintered metals in a process he had developed himself.

Since 1994, SMP has shifted its focus to manufacturing electrical components. Material science remains an essential factor in the development of ultra-low loss inductive components: The powder composite materials used for the components are specially developed and produced for each application according to customer‘s specifications.

In the course of the years, the family-owned company has become one of the key global suppliers of magnetically soft materials for industrial applications. In order to be able to control the full production cycle, in 2008 a further factory was founded for the proprietary development and manufacture of powder composite materials. In 2011, SMP expanded its production capabilities with an injection moulding facility, so that the company itself can now develop and manufacture coil carriers and insulation systems for the components. With the addition of a new EMC laboratory, SMP is now able to carry out measurements of both conducted and radiated emissions.

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TPR International would be grateful for a sample copy of the publication with this article.