



Press release

**Energy efficient, low-loss inductive components
for environmental applications:
Resource conservation begins with component efficiency**

Graben-Neudorf, Germany, March 2022. SMP Sintermetalle Prometheus GmbH & Co KG (SMP) introduces inductive components for environmental applications. The components are fitted in inverters, power converters and high frequency converters, which are installed for example in waste and raw material recycling plants, in garbage processing, or in sewage and water treatment plants. The chokes, EMC filters, mid frequency transformers and soft magnetic cores from SMP are extremely energy-efficient, low-loss, and designed to perform flawlessly even in harsh environmental conditions.

Components in environmental applications must withstand challenging environmental conditions such as dirt, dust or moisture, extreme weather and high temperatures. In order to satisfy these requirements, the components conform to thermal class H (180°C) according to DIN EN 60085, fire protection class HL3 according to DIN EN 45545 and protection class from IP00 to IP66 according to DIN EN 60529. Thus, components from SMP can be used in PD4 environmental conditions, both inside and outside the power converter or electric plant. Cooling methods for which the components are suitable include air cooling, water cooling and free convection. To guarantee long-term operation, reliability is also a key factor in environmental applications. Consequently, many components from SMP have been in operation for more than 30 years without breakdown.

In order to ensure long-term conservation of resources and minimise ongoing operating costs, the components must maintain an optimal energy balance. The materials for the components are developed and produced by SMP especially for this purpose and are characterised by minimal eddy current and hysteresis losses. The materials are exceptionally energy-efficient, enabling the manufacture of extremely low loss, compact components with high energy density and maximum efficiency, however demanding the requirements. In order to minimise their impact on the environment, humans and wildlife, all powder-metallurgical materials are magnetostriction-free, which means that they are completely noiseless. The



closed construction of the components minimises the magnetic stray field, which is not only beneficial for adjacent electronic components, it also prevents interference with the keen senses of animals in the vicinity of the plants. The compact construction with smallest possible volume and weight also offers savings with regard to the installation space required.

The range of uses for the components from SMP extends from currents up to 3000 A, frequencies up to 5 GHz, and a saturation flux density of up to 2 Tesla. All components are RoHS- and REACH-compliant and CE, EAC and UKCA certified. The materials used are UL listed.

At its factory near Karlsruhe in Germany, SMP develops and manufactures chokes, EMC filters, transformers and soft magnetic moulded parts. The soft magnetic powder composite materials used in the passive components are specially developed and produced in-house, thereby ensuring high availability. Besides the environmental engineering sector, components from SMP are used in applications in power electronics, drive technology, automation, signal processing, medical engineering, electromobility, marine engineering, railway engineering, energy generation, renewable energies and aerospace. The products are distributed worldwide, with an export rate of over 50 percent. The family-run company was founded in 1982, and since then has become a major provider of components with soft magnetic materials for industrial applications.

Summary:

- Currents: up to 3000 A
- Saturation flux density: up to 2 T
- Frequency: DC to 5 GHz
- Thermal class: H (180°C) according to DIN EN 60085
- Protection class: IP00 to IP66 according to DIN EN 60529
- Fire protection class: HL3 according to DIN EN 45545
- Cooling methods: free convection, air cooling, water cooling

Images:

Image 1: Protective coating according to IP66 protects SMP chokes from dust and water

Image 2: Example of environmental applications: sewage treatment plant

**Company information:**

SMP Sintermetalle Prometheus GmbH & Co KG develops and manufactures inductive components, filter systems and magnetically soft materials mouldings. The products are 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. 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 develop and manufacture coil carriers and insulation systems for the components. With the addition of a EMC laboratory, SMP carries out measurements of both conducted and radiated emissions.

Contact:

SMP Sintermetalle Prometheus GmbH & Co KG
Ottostraße 4
76676 Graben-Neudorf, Germany
Tel: +49 (0)7255 716 0
Fax: +49 (0)7255 716 160
E-mail: sales@smp.de
Internet: www.smp.de

PR Contact:

TPR International
Christiane Tupac-Yupanqui
PO Box 11 40
82133 Olching, Germany
Tel: +49 (0)8142 44 82 301
E-mail: c.tupac@tradeppressrelations.com
Internet: www.tradeppressrelations.com

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