

*Press release: Wind Energy / Renewable Energy / Inverter Technology / Power Electronics / Electronic Components:*

**Now also for offshore installations:  
Inductive components for inverters in wind turbines**

*Graben-Neudorf, Germany, July 2010.* SMP's chokes for inverters in wind turbines are now also approved for use in offshore installations. These inductive components feature low losses, very low stray fields and a highly compact design. The chokes' cores consist of powder composites, which SMP has specifically engineered for this application.

The direct current from the wind turbines must be converted into a sinusoidal waveform with the values required by the grid. The converter's filters, which consist of capacitors and filter chokes, ensure that the current being fed into the grid exhibits a near sinusoidal waveform. To maximize the inverter's efficiency, its components must exhibit low losses. The materials that SMP developed especially for use in its energy-efficient, high-performance chokes have low magnetostriction and exceptionally low eddy current and hysteresis losses. Their encapsulated design ensures that the power converters emit only low-intensity stray fields, so that they do not affect other components. The chokes have a space-saving compact design, are maintenance-free and have a long lifespan – a significant contribution to cutting the maintenance costs for offshore wind turbines.

Offshore wind turbines are prone to corrosion. To protect them from the corrosive action of the sea water, special salt-resistant materials, additional corrosion protection and a complete encapsulation of certain subassemblies are necessary. SMP's inductive components for wind turbine inverters are now certified IP66 and approved for use in offshore installations. Because of their high protection class of IP66, these chokes can be fitted outside the inverters, which means that the heat generated by the choke is not discharged inside the inverter. This results in a lower internal inverter temperature, which removes the need for cooling fans, saving both energy and installation space. Placing the choke outside the inverter has the further advantage of reducing the inverter's overall dimensions, which further cuts space and energy demand. To simplify mounting outside the inverters, SMP provides the chokes with special mounting fixtures. The choke and the mounting plate are fitted on the device's outside and the connecting cables pass through a sealed opening.

SMP supplies inductive components for frequencies up to 200 kHz and current ratings up to 1000 amperes for use in onshore wind turbines, photovoltaic plants, railway engineering, medical engineering as well as in drives, power electronics, power generation, and instrumentation and control. Depending on their application, they are constructed either as single-conductor chokes for high-current applications, single-phase individual chokes, three-phase choke modules or LC filters. These components offer a high energy storage capacity in a compact and cost-conscious design as well as reduced losses and good EMC characteristics. SMP manufactures all components to customer specifications using in-house developed powder composites. All products are RoHS- and REACH-compliant and the materials used are UL-listed. To allow for a wide range of requirements, components can be made to all common international standards.

**Illustration:**

SMP choke with mounting plate in protection class IP66 for inverters in wind turbine installations.

**Company information:**

SMP Sintermetalle Prometheus GmbH & Co KG develops and manufactures inductive components and magnetically soft materials, cores and mouldings. Based in Graben-Neudorf near Karlsruhe, Germany, the company was founded in 1982 by Vasilios Gemenetzis and today employs 180 people. Research and development have been key aspects of the company's philosophy ever since its foundation. SMP's product range includes low-loss inductive custom components based on in-house-developed powder composites, such as filter, commutating, step-up converter, power recovery and single-conductor chokes. Many of its products are used in the railway industry. The market for inverters for photovoltaic systems that feed solar energy into the electricity grid and for converters for wind turbines is also experiencing strong growth. SMP has become one of the key global suppliers of magnetically soft materials for industrial applications, serving customers throughout the world.

**Contact:**

SMP Sintermetalle Prometheus GmbH & Co KG  
Ottostraße 4  
D-76676 Graben-Neudorf  
Tel: +49 (0)7255 716 0  
Fax: +49 (0)7255 716 160  
E-mail: [info@smp.de](mailto:info@smp.de)  
Internet: [www.smp.de](http://www.smp.de)

**PR Contact:**



**Sintermetalle Prometheus  
GmbH & Co KG**

D-76676 Graben-Neudorf

[www.smp.de](http://www.smp.de)

TPR International

Christiane Tupac-Yupanqui

Hermann-Löns-Weg 57

D-69207 Sandhausen, Germany

Tel.: +49 6224 172751

Fax: +49 6224 172752

E-mail: [c.tupac@tradeppressrelations.com](mailto:c.tupac@tradeppressrelations.com)

Internet: [www.tradeppressrelations.com](http://www.tradeppressrelations.com)

*We would be grateful for a sample copy of the publication with this article.*