

Let the sunshine in:

Renewable energies – a global phenomenon

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Norman Lemm
VACUUMSCHMELZE GmbH &
Co. KG
Phone +49 (0)6181 / 38-0
Fax +49 (0)6181 / 38-2645
norman.lemm@
vacuumschmelze.com

Konzept PR
Simon Federle
Phone +49 (0)821 / 34300-19
s.federle@konzept-pr.de

Contact address for reader requests:
VACUUMSCHMELZE GmbH &
Co. KG
Postfach/P.O.B. 22 53
D-63412 Hanau
Phone +49 (0)6181 / 38-0
Fax +49 (0)6181 / 38-2645
info@vacuumschmelze.com

Hanau – The demand for photovoltaic systems is increasing worldwide, already in 2017 the forecasts with a worldwide installed photovoltaic capacity of more than 400 gigawatts were clearly exceeded and for 2018 the expected expansion is estimated at approx. 100 GW, so that a capacity of more than 500 GW will then be available worldwide. While China recently announced that it would allow around 20 gigawatts less capacity to be added, the French group Total announced that it would invest in the expansion of ten GW of photovoltaic capacity over the next ten years. Above-average growth rates are expected again next year. VACUUMSCHMELZE (VAC) is ideally equipped for this economic boom with three sales locations in China and more than 40 additional sales offices worldwide.

With a broad portfolio of current sensors, common mode chokes and cores as well as application know-how directly in the growth markets, the current development trends, e.g. for inverters with an output of up to 100 kW, can also be served.



A broad array of problem solvers for photovoltaic systems

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A PV system consists of a photovoltaic module in combination with an inverter, which brings the power into the grid or to an accumulator. Defective systems can become dangerous for people or cause a fire, therefore the relevant standards require that the inverter disconnects from the grid before it becomes dangerous for the system or people. The continuous current monitoring is relevant for measuring the actual output of the solar modules and can also be used for MPP tracking. Leakage currents can contain both, direct and alternating portions, therefore AC/DC-sensitive monitoring is necessary.

High-precision current measurement, minimum temperature drift and excellent temperature stability characterize the current sensors, which can be designed for

measuring ranges up to 2,500 A. Monitoring devices, for example in transformerless solar inverters, which monitor the leakage current of the entire system with differential current sensors sensitive to universal current, benefit from the fast response time, low temperature drift and low residual currents of the VAC sensors. Since defective systems can be dangerous for persons or even trigger fires, these properties are decisive when used in safety functions.

Common mode chokes or cores have excellent damping characteristics with the smallest size. Current further developments of the nanocrystalline high-tech material VITROPERM used for this purpose confirm that it is the universal solution for all questions concerning electro-magnetic compatibility (EMC), which is superior to conventional ferrites in many respects.

"We are optimistic about the increasing technical demands of the market thanks to our application competence and are confident that we can further expand our leading position with the PV inverter manufacturers," says Norman Lemm, Marketing Director of VAC.

VACUUMSCHMELZE GmbH & Co. KG

VACUUMSCHMELZE (VAC), based in Hanau, has 4,300 employees worldwide, 1,450 of whom are in Hanau. The company designs, produces and markets advanced materials, particularly with magnetic, but also with other physical qualities as well as related products. In 1914, the first vacuum furnace laid the foundation for today's VACUUMSCHMELZE. Industrial vacuum melting techniques for alloys have been in operation since 1923.

VAC Group today achieves annual sales of approx. 380 million euros in over 50 countries and is holder of around 800 patents. The company is among the world's most highly innovative developers of advanced industrial materials.

VAC's range of products comprises a broad array of advanced semi-finished materials and parts, inductive components for electronics, magnets and magnet systems for use in a wide variety of fields and industries spanning watch-making and medical technology, renewable energies, shipbuilding, installation technology, automotive and aviation. VAC's custom solutions are developed in close collaboration with the customer, reflecting the company's expertise in materials, applications and state-of-the-art production technology.

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