

Maximum quality for maximum loads

Oil Distribution Transformers



Partners in Power



SBG at a Glance

Products

- Oil transformers
- Arc suppression coils
- Earthing transformers
- Neutral earthing transformers

Quality management

The SGB-SMIT Group is certified in accordance with:

- DIN ISO 9001
- DIN ISO 14001

We possess welding certification required by the German Federal Railways. Our own quality check points guarantee a maximum quality level. All operational procedures are controlled via an ERP system.

Core, winding, assembly and housing: these four components and production steps are what characterizes our oil distribution transformers. They are our "T.O.P. 4".

Markets

SBG manufactures transformers for applications worldwide. Sales and Service Centers on all continents ensure optimum processes.

Our products meet the requirements in accordance with the applicable national standards.



Power where power is needed

Our core competence: the ideal basis for powerful advancements.

We manufacture oil transformers for distribution networks in accordance with DIN EN 50464-1. They form the basis for products that can be integrated perfectly in specific applications, e. g.:

- Three-phase oil transformers for distribution networks of energy supply companies
- Three-phase oil transformers in low-loss design for decentralized energy generation
- Three-phase multi-winding oil transformers for special requirements
- Three-phase oil transformers for wind power plants
- Special three-phase oil transformers for industrial plants
- Single-phase oil transformers for railway applications
- Arc suppression coils
- Neutral earthing transformers
- Earthing transformers
- Oil transformers with insulating fluids for special requirements, e. g. fire protection or environmental issues



Quality is no coincidence: the core

The heart of our oil distribution transformers: thanks to state-of-the-art production procedures and high precision, it beats with particular reliability and power. This is what distinguishes cores manufactured in-house at SBG.

- cold-rolled grain-oriented metal sheets
- step-lap design
- max. filling factor

These measures reduce no-load losses and no-load currents as well as noise emission.

T.O.P. 1

At SBG, the actual parameters of the texture tapes used are measured and recorded prior to core slitting.

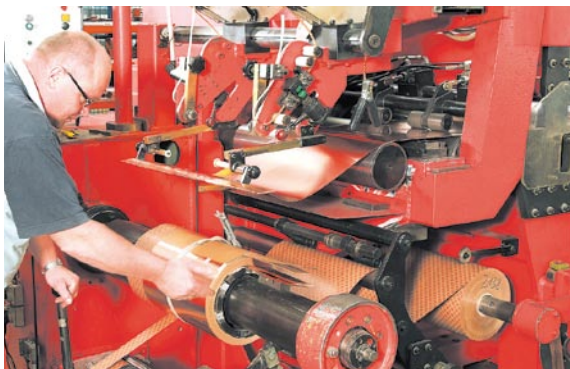


Precise and resistant: the winding

Maximum resistance to

- short-circuit load
- overvoltage peaks

The low-voltage coil-winding



Production of high-tensile coils

- semi-automated winding machines
- current displacement in axial direction adjusts automatically
- reduced thrust forces
- spark-free and splatter-free cold-pressure welding of outgoing lines
- high-tensile coils thanks to concentric coil shape and thermal bonding of the prepreg to the conductor material

The high-voltage winding



Fully-automated winding machine

- fully or semi-automated winding machines
- lacquer- or paper-insulated winding wire
- constant winding tension
- layer insulation made of high-quality cable paper

T.O.P. 2

LV insulation meeting highest safety standards due to:

- two-layer prepreg as LV insulation material
- individually tested pressure-welded joints

Reliable and solid: assembly & drying

Assembly of the active part

All components are assembled and mounted in a short-circuit proof manner using pressed components. The result: additional reserves and increased reliability.



Vacuum drying

Drying and oil filling under vacuum as a basis for:

- maximum impregnation of insulating materials
- ensured compliance with PD specifications as a prerequisite for an extremely long service life



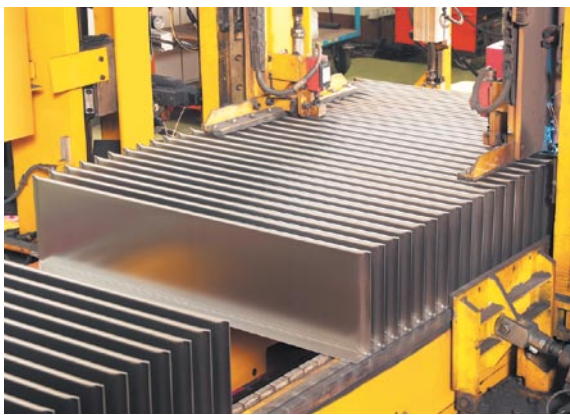
T.O.P. 3

At SBG, all active parts are subjected to an electrical pre-test prior to installation in the housing.

Durable and robust: housing & corrosion protection

Housing and cover

- Corrugated tank manufactured in-house
- State-of-the-art corrugation plant processes using quality sheet steel
- After being welded via the welding robot, the tank is tested for an air tight seal



Manufacture of the corrugated wall

Corrosion protection

- Environmentally friendly, hydro-based coating system for various corrosion protection requirements
- Coating with paint via immersion process (standard RAL 7033)
- In addition, the tank is hot-galvanized for enhanced corrosion protection



Corrosion protection
in special colour upon
customer's request



T.O.P. 4

At SBG, all housings manufactured in-house are subjected to a fourfold leakage test in accordance with factory-specific standards. This ensures oil-tightness over the transformer's entire service life!

Tests

“Transformers should be seen and not heard”

Reducing transformers’ noise emissions is becoming increasingly important. This is why, in addition to the standard design (DIN EN50464), SGB transformers are also available with reduced loss and noise levels.

Alongside the selection of the appropriate induction and core material, the method of dovetailing legs and yokes in step-lap design has a positive impact on the transformers’ noise emissions and losses. Noise measurements are performed as special tests at regular intervals.

Routine tests in accordance with DIN VDE 0532

- Test with applied voltage (winding test)
- Test with induced voltage (turn test)
- Measurement of winding resistances
- Measurement of transformer ratio and determination of vector group;
- Measurement of short-circuit impedance and load losses
- Measurement of no-load currents and no-load losses



Type tests and special tests in accordance with DIN VDE 0532

- Temperature rise test
- Impulse short-circuit test
- Noise measurement
- Partial-discharge measurement

Fault withstand capability

Proof is provided via type tests performed by renowned test laboratories.



Occupational Health & Safety and certification

Only transformers energize

A feeling of reassurance: SBG not only complies with the standards regarding manufacturing quality and occupational safety, but also faces today's challenges when it comes to environmental issues.

Awards and certificates reflect the high demands we place on ourselves in terms of acting responsibly.



Certified transporting agencies and trucks with special superstructures and load-securing equipment

Confirmed many times:

SBG's quality and performance

Environment

Occupational Safety

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service
certifies that



**Sächsisch-Bayerische
Starkstrom-Gerätebau GmbH**
Ohmstraße 1
D-08496 Neumark

has established and applies
a Quality Management System f

The Sales, Design, Production, Testing and
Oil immersed Distribution Transfo
Medium Transformers and Compact -

An audit was performed, Report No. 7
Proof has been furnished that the requ
according to

ISO 9001:2008

are fulfilled. The certificate is valid in cc
with the main-certificate until 2014-4
Certificate Registration No. 12 100 1100

M. Mege

Munich, 2011-04-27

TÜV SÜD Management Service GmbH • Zertifizierungsstelle • Ridlerstraße 85

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service
certifies that



**Sächsisch-Bayerische
Starkstrom-Gerätebau GmbH**
Ohmstraße 1
D-08496 Neumark

has established and applies
an Environmental Management Syst

The Sales, Design, Production, Testing and
Oil immersed Distribution Transfo
Medium Transformers and Compact -

An audit was performed, Report No. 7
Proof has been furnished that the requ
according to

DIN EN ISO 14001: 200

are fulfilled. The certificate is valid in cc
with the main-certificate until 2014-4
Certificate Registration No. 12 104 1100

M. Mege

Munich, 2011-04-27

TÜV SÜD Management Service GmbH • Zertifizierungsstelle • Ridlerstraße 85

Certificate



German Social Accident Insurance Institution for
the energy, textile, electrical and media products sectors certifies
the successful implementation of an Occupational Safety
and Health Management System.

The company

Starkstrom-Gerätebau GmbH
Ohmstraße 10
93055 Regensburg

meets the requirements of systematic and
effective occupational safety, based on

the specific branch implementation of the **National Guidelines in line
with ILO-OSH 2001**, the BG Basic Principles for OSH-MS Auditing,
dated 2009-04 and the requirements in line with **OHSAS 18001:2007**.

The second renewal certificate is valid until 30 November 2013.

Head of Prevention Department

Jens Jühling
Dr. Jens Jühling
Cologne 9 February 2011



OSH-MS Certification

Ute Schneider
Dipl.-Ing. Ute Schneider

Registration No. 022943110000/075-2

Accessories

Enhanced protection, facilities for monitoring and extended supervision: our transformers can be equipped with accessories and special solutions for even better integration in your application conditions.

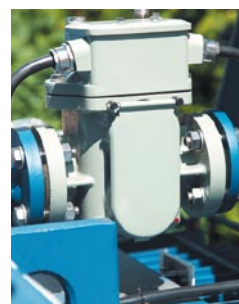
Protection and monitoring equipment for:

- temperature
- oil level
- pressure
- gas formation



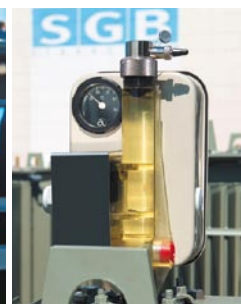
Shock hazard protection on HV & LV

- HV
 - inner cone-type bushings
 - outer cone-type bushings
- LV
 - terminals with covers
 - cable hoods



Special solutions for especially challenging applications

- flat-bar terminal system
- electromagnetic compatibility (EMC)
- for converter operation
- for vibration-resistant designs
- regarding climatic conditions and installation altitudes



Request form

Would you like us to submit an offer? To be able to define your transformer requirements, please provide us with the following information. Please send this form by fax to

fax no. +49 (0) 37600 / 3414 or send an **email to sgb@sgb-neumark.de**

You can also use the direct line to Sales and Development: **phone number +49 (0) 37600 / 8300.**

Request/order information on three-phase oil transformers in accordance with DIN EN50474

Quantity:	_____
Design:	Hermetic / expansion tank*
Type of installation:	Indoor / Outdoor*
Nominal power:	_____
High voltage:	_____
- can be changed over to:	_____
High-voltage tapings:	_____
Low voltage:	_____
Impedance:	_____
No-load losses:	_____
Load losses:	_____
High-voltage bushings:	Porcelain / plug-in connector, type _____
Low-voltage bushings:	DIN EN50386/ _____
equipped with:	_____
Protection/monitoring equipment:	_____
Corrosion protection:	Coating with paint (c3) / hot-galvanized with coating paint (c4)
Special Duties:	_____
Converter operation	_____

Place, date, company _____

* Delete as applicable

Partners in Power

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www.sgb-trs-to.de

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