Tailored to your requirements
You can count on our quality

**Products**
- Power transformers from 5 to 100 MVA up to Um 170 KV
- ONAN / ONAF / OFWF
- 16-25 Hz / 50 Hz / 60 Hz
- Oil chokes
- Neutral electromagnetic coupler
- Earthing transformers and Peterson coils
- Single phase transformers
- Resonant circuit reactivators
- Coupling transformers and reactors for ripple control
- Shunt reactors and current limiting reactors
- Transformers with line drop and parallel regulation
- Rectifier and furnace transformers

**No-load losses / Noise**
Up to the minute core-laying technology (step lap) and the application of high quality, extremely low loss sheet steel with low magnetism, guarantees the customer low no-load losses and noise emissions.

**Short-circuit losses**
Thanks to the optimisation of the conductor cross sections, low-load losses can be achieved in relation to the additional losses. As a result, SGB transformers completely meet the technical as well as the economical requirements with regard to short circuit proofing.

**Repair**
- All types of transformers > 5 MVA
- Manufacture of complete spare parts

**Maintenance**
Provider of services for everything to do with transformers

**Quality management**
The complete operational process is controlled by a tried and tested quality management system
The SGB Group is certified in accordance with
- ISO 9001
- Federal railways welding authorisation
- KTA 1401

**Markets**
The SGB group manufactures and tests transformers for the world market.
We comply with the standards of
- DIN / VDE
- IEC 76
- British standard
- ANSI / IEEE
- CAN / CSA
- NEMA
- and others

**Values in accordance with standards**
- DIN / VDE
- IEC 76
- British standard
- ANSI / IEEE
- CAN / CSA
- NEMA

**Typical utility specification**
- UL
- ENEL
- ÖVE
- SVV
- UNE
- NF

**Values achievable by SGB**
- DIN / VDE
- IEC 76
- British standard
- ANSI / IEEE
- CAN / CSA
- NEMA

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<th>MVA</th>
<th>P (kW)</th>
<th>LWA (dB)</th>
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Good quality cores

Iron core design details

The SGB transformers cores contain good characteristics. Both the painstaking selection of the materials and the dependable design of the moulded pieces and their solid manufacture are decisive for the high quality. The concurrence of these factors permits progressive optimisation of no-load losses and currents, in addition to noise levels. In the case of dimension limitations, even the most extreme customer demands can be accommodated.

- Cold-rolled grain-oriented sheet of steel from well known manufacturers in the best available quality, with a sheet thickness of 0.3, 0.27 and 0.23 mm.
- Computer-controlled core cutting equipment.
- 45° roof cut.
- Step lap process to mortise join the columns and yokes.
- Processing equipment for precise laminating.
- Uniform core pressing through bindings and compacting steel frames.
Always well wound

Winding design details

• During the optimisation of the conductor cross-sections, the influence of the conductor size on the amount of the additional losses is equally considered, as are the requirements on the short-circuit proofing.

• The stabilisation of the axial winding dimensions is achieved through predrying, then establishing the defined winding lengths during application of the intended gripping force and the thorough, symmetrical design of the windings. At the same time, possible necessary measures of compensation must be included in the calculation to avoid unsymmetrical forces.

• The correctness of the basic methods of calculation and design principles is proved through repeated short-circuit tests. Proofing is carried out both on our own account and at the customer’s request.

• In order to optimally use the winding space, the winding principles and the conductor types are carefully selected for each individual case.

• The stabilisation of the axial winding dimensions is achieved through predrying. The requirements of the dielectric strength and the short-circuit proofing, are taken into account equally as much as the thermal requirements.

• The transformer is carried out using machines especially constructed for this, which ensures high quality and precise results.

• The selection of the type of winding and conductor is made, taking the dimensioning currents and the dimensioning tension into account, together with the required test level as well as the expected thermal and mechanical stress.
Everything from one supplier

From the order centre …

… your order is converted into an internal order by experienced staff.

Thus, our short delivery terms of 5 months are accomplished through bundling the competences of sales, calculation, work preparation, purchasing and design. Hand in hand, all necessary documents are prepared and quickly handed over...

… to the production centre

Deadline control
Design monitoring
Manufacturing monitoring
Deadline monitoring
Material monitoring

Supplier assessment
Material queries / Supplier selection,
Material scheduling, Supplier auditing, Deadline monitoring with regard to supply term

Sales
Order processing with customers
Preparation of work orders
Efficient processing from the order to the shipment
Work preparation
Preparation of all manufacturing documents with the support of the modern PPS system

Calculation
Creation of all calculation documents using modern computers.

Design
CAD supported design
Values are measurable

Shielding

Resulting values

The shielding of the testing rooms with 82 mm thick perforated plate panels with regard to:

- Air conditioning (with cooling installation)
- Sound insulation
- HF-shielding

resulted in the following values:

- Hall desired temperature value 20°C
- Maximum increase during heating on +5 K during this, 400 kW output which can be dissipated
- Sound-proof level 42 dB, walls
- 37 dB Roller doors,
- HF interference level 5 pc

Most important test facilities

Some of the most important test facilities follow:

- Impulse voltage equipment 1200 kV / 60 kJ
- Alternating voltage test equipment 300 kV (75 kVA / 150 kVA) 100 kV (25 kVA)
- Frequency converter 60 Hz / 125-350 Hz / 125 Hz
- Testing transformers
- Audio frequency converter 83.33/100/116.67/183.33/200/216.67 Hz
- 16.2/3 - power supply by Deutsche Bahn AG
- Calibration laboratory to calibrate electrical measuring devices

Building details

The testing building comprises the steel construction hall, which is the actual test room, and a concrete construction building with the necessary rooms to serve as testing shops and to accommodate the testing machines.

<table>
<thead>
<tr>
<th>Steel construction hall</th>
<th>Concrete construction building</th>
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<tbody>
<tr>
<td>Length</td>
<td>42 m</td>
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<tr>
<td>Width</td>
<td>20 m</td>
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<tr>
<td>Height</td>
<td>14 m</td>
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<tr>
<td>Walled-in space</td>
<td>13964 m²</td>
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<td>4180 m³</td>
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Transformers for all the world
The SGB complete service

Our service encompasses the following individual measures:

- On-site assembly
- Commissioning
- Round the clock accessibility
- Monitoring
- Overhauling and all year servicing of your transformers

Contact us!

OS Voltage from control room (if necessary)
If you do not find a checklist for your query here, please contact us immediately. The SGB-Employees are standing by ready to offer you competent support and advice. Dial the number next to your chosen language.

**German:** +49 (0) 9 41/78 41-245

**English:** -354

**French:** -382

**Spanish:** -456

**French:** -386

**Spanish:** -463

Or send us an email to:
ntv@sbg-trafo.de
Excellent quality

Our supply and work program

New manufacture:

• Oil immersed transformers up to and including 1.000 MVA, operating voltages up to 525 kV, in accordance with all current standards and for special designs
• Regulation transformers with on-load tap changers
• Cast resin dry-type transformers up to and including 24 MVA and rated voltages up to 36 kV
• System enclosures for cast resin transformers
• Transformers with line drop or parallel regulation
• Pole mounted transformers
• Earthing transformers and Peterson coils
• Rectifier and furnace transformers
• Resonant-circuit reactances, coupling transformers and reactors for AF ripple control system
• Shunt reactors and current limiting reactors
• Compact stations

Subject to technical modifications