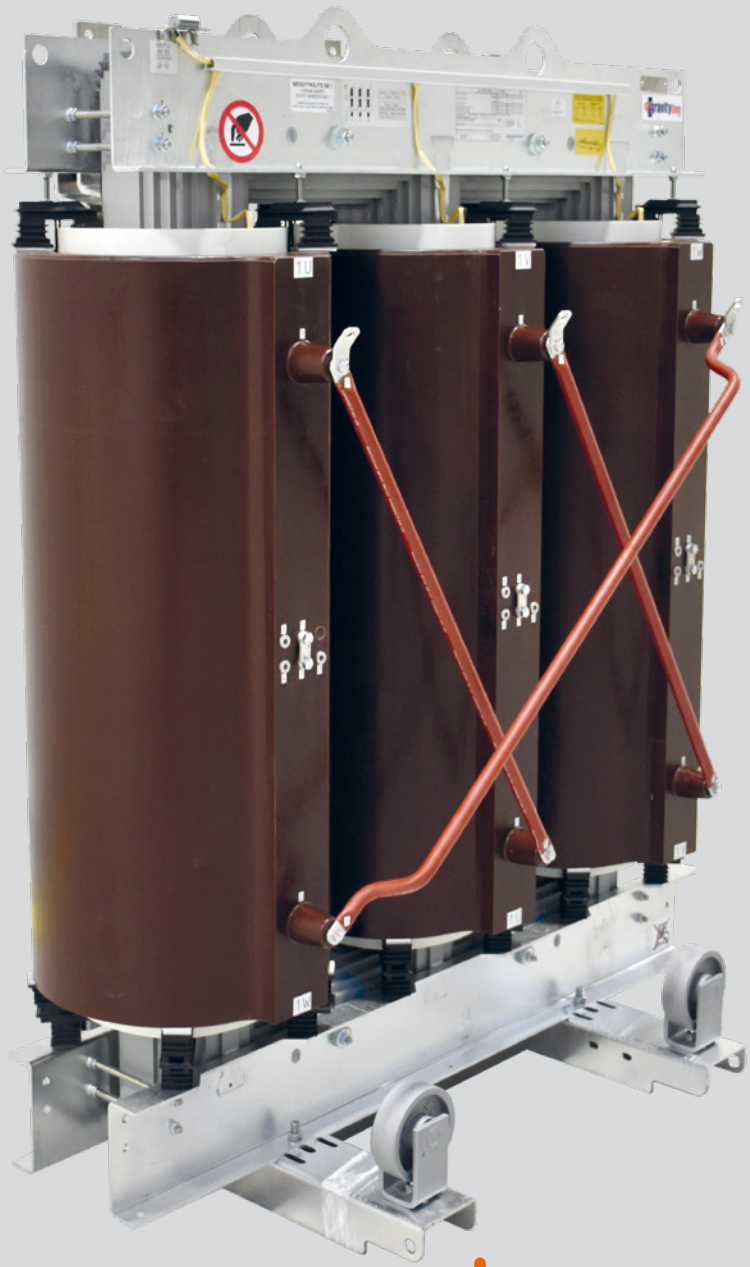
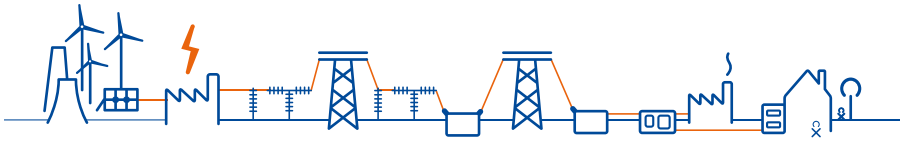
SGB CZECH TRAFO
Your dedicated partner
of the SGB-SMIT Group

CAST RESIN TRANSFORMERS





gravityline

SGB-SMIT AT A GLANCE

Combined, more than

450

YEARS OF EXPERIENCE

Basis for know-how and for know-why

More than

3,600

EMPLOYEES

take care of your project

In more than

80

COUNTRIES

satisfied customers

READY FOR YOUR MARKET

The SGB-SMIT Group 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.

PRODUCTS

- large power transformers
- medium power transformers
- large liquid-immersed distribution transformers
- liquid-immersed distribution transformers
- dry type transformers
  - cast resin transformers
  - VPI transformers (conventional and compact core)
- shunt reactors
- series reactors
- phase shifters
- Lahmeyer-Compactstationen (compact substations)

Transformers from 30 kVA up to incl. 1,200 MVA in the voltage range up to 765 kV.

QUALITY MANAGEMENT

The SGB-SMIT Group is certified in accordance with:

- DIN ISO 9001
- DIN ISO 14001
- DIN ISO 45001

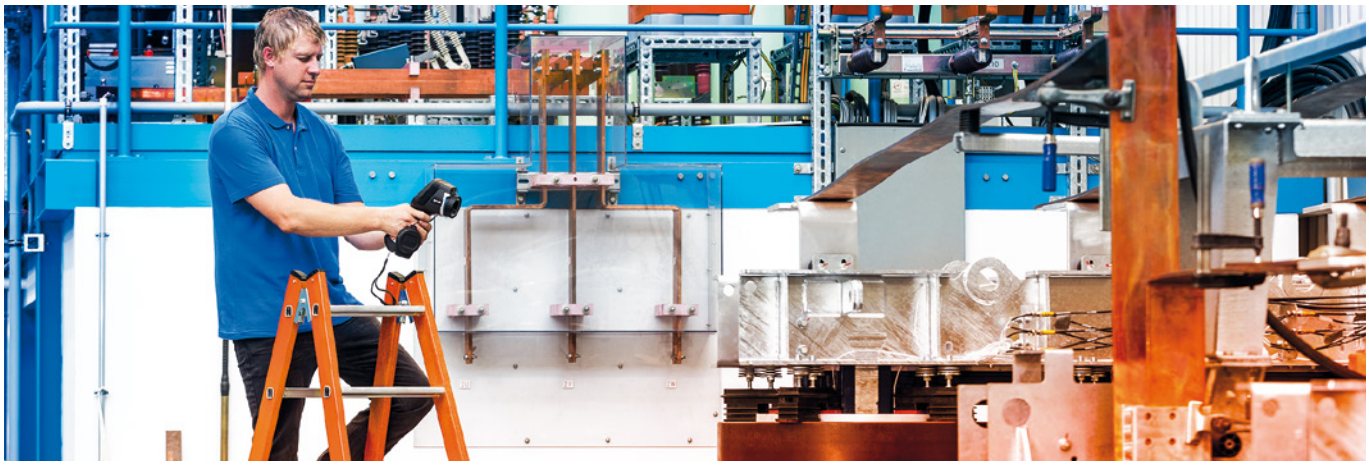
TECHNOLOGIES

Technologies for conventional and renewable energy.

Status: October 2020

ECONOMICALLY EFFICIENT AND CUSTOMER-DRIVEN

Gravity Line by SGB-SMIT comprises various models and power categories of cast resin transformers which can be used for a wide variety of standard applications while completing our standard range for generic applications in the energy distribution sector in a cost-effective way.



THE PRINCIPLE

The Gravity Line benefits from a new, especially efficient winding system which allows us to pass on the cost advantages derived from manufacture to you directly. At the same time, thanks to features such as the completely vacuum-encapsulated high voltage winding, you can rely on the proven SGB quality and superior operation.

Gravity Line was designed according to the ECO-Design directives (acc. to EU 2009/125/CE) from regulation no. 548/2014. With Gravity Line, we offer you convincing standard solutions which excel thanks to their short lead times and immediate design availability.

THE ADVANTAGES

"From design directly to manufacture:" Short routes in development, efficient production methods and standardized specifications enable us to offer you Gravity Line as an especially cost effective transformer solution. Nevertheless, individual solutions are possible here as well:

The additional heating due to operation when encountering inharmonic overloading situations was taken into consideration when designing this transformer series in regards to the thermodynamic dimensioning of the "Standard Converter Operation DIN EN 61378-1 (4.2)". Various enclosure combinations and accessories are available to optimize your transformer specifically for its application. Upon consultation, technical adaptations of electrical and machanical parameters and special designs are also possible. Your contact person will be pleased to explain to you all the advantages of Gravity Line!

SPECIAL FEATURE

We constantly keep a complete range of transformers from Gravity Line in stock for you. Additional models can be produced and delivered at short notice.

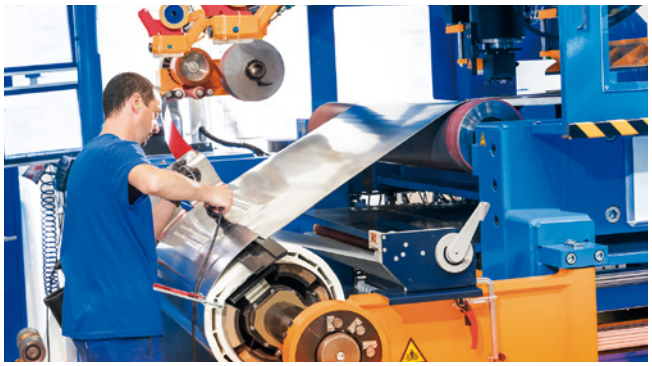
SPECIAL FEATURE

Despite all standardization: with Gravity Line, you will receive the specialist support you are accustomed to, from planning right through to interface clarification.

TECHNICAL PARAMETERS AT A GLANCE

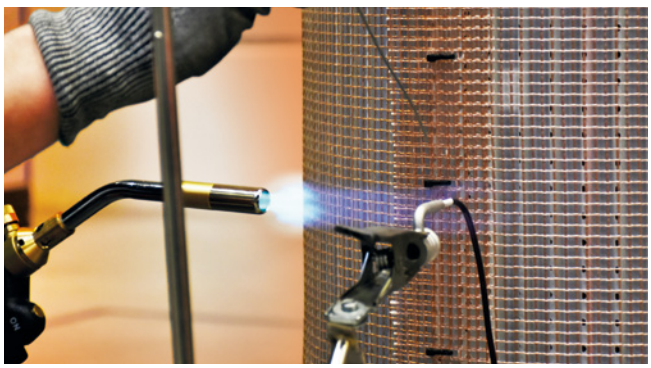
TECHNICAL DATA

- Design acc. to DIN EN 60076-11 or 50588-1
- Transformer also designed for "converter-operation" under typical conditions acc. DIN EN 61378-1 (4.2)
- HV-winding with smooth, dirt-repellent surface, vacuum-encapsulated to form a compact cylinder (100 K)
- LV-winding "baked" together to form a compact cylindrical body (100 K)
- Surge-proof and short-circuit proof, free from partial discharge (< 5 pC)
- Insulating level F
- Flame-resistant, self-extinguishing (fire classification F1)
- Climate class C4 – valid for operation (-40°C) and storage (-50°C). C2 for transportation (-25°C)
- Environmental class E3
- Winding material: Aluminum
- High-voltage taps:
  +/-2 x 2.5 % (can be changed over in no-load condition)
- Insulation level (LI) standard according to List 2
- Color: core in RAL 7045; windings in RAL 8017
- Suitable for operation at altitudes up to </= 1000 m above sea level
- Steel clamps and running gear galvanized
- Incl. the following technical equipment:
  - 1 set of castors (lockable in longitudinal and transverse direction)
  - Lifting lugs
  - Earth studs (M12)
  - HT tappings
  - Temperature sensor (PT100/3L in LV winding) routed to terminal strip
  - Second rating plate and vector group diagram
- Documentation:
  - 3D dimension drawing, vector group diagram, terminal arrangement diagram
  - Test report regarding routine tests acc. to IEC 60076-11
  - Documentation of accessories acc. to manufacturers' specifications



GRAVITY LINE ACC. TO ECO LEVEL 2

SGB-Type		Power in kVA	HV in kV	LV in kV	imp in %	Vector	P_0 in W	P_k 120°C in W	L_{WA} in dB	app. length in mm	app. width in mm	app. height in mm	app. weight in kg
DTTHZ2N	100/10	100	10	0.4	4	Dyn5	252	1800	50	1060	670	1300	950
DTTHZ2N	100/10	100	10	0.4	6	Dyn5	252	1800	50	1080	670	1300	1100
DTTHZ2N	160/10	160	10	0.4	4	Dyn5	360	2600	53	1090	670	1400	1070
DTTHZ2N	160/10	160	10	0.4	6	Dyn5	360	2600	53	1120	670	1300	900
DTTHZ2N	250/10	250	10	0.4	4	Dyn5	468	3400	56	1162	820	1394	953
DTTHZ2N	250/10	250	10	0.4	6	Dyn5	468	3400	56	1203	820	1394	1038
DTTHZ2N	400/10	400	10	0.4	4	Dyn5	675	4500	59	1189	820	1599	1296
DTTHZ2N	400/10	400	10	0.4	6	Dyn5	675	4500	59	1262	836	1589	1407
DTTHZ2N	630/10	630	10	0.4	4	Dyn5	990	7100	61	1315	820	1714	1910
DTTHZ2N	630/10	630	10	0.4	6	Dyn5	990	7100	61	1384	855	1584	1737
DTTHZ2N	800/10	800	10	0.4	6	Dyn5	1170	8000	63	1422	858	1735	2140
DTTHZ2N	1000/10	1000	10	0.4	6	Dyn5	1395	9000	64	1494	980	1742	2448
DTTHZ2N	1250/10	1250	10	0.4	6	Dyn5	1620	11000	66	1558	980	1842	2772
DTTHZ2N	1600/10	1600	10	0.4	6	Dyn5	1980	13000	67	1659	980	2024	3855
DTTHZ2N	2000/10	2000	10	0.4	6	Dyn5	2340	16000	69	1705	1270	2264	4548
DTTHZ2N	2500/10	2500	10	0.4	6	Dyn5	2790	19000	70	1883	1270	2251	5213
DTTHZ2N	100/20	100	20	0,4	4	Dyn5	252	1800	50	1217	769	1444	1284
DTTHZ2N	100/20	100	20	0,4	6	Dyn5	252	1800	50	1204	670	1404	931
DTTHZ2N	160/20	160	20	0,4	4	Dyn5	360	2600	53	1157	755	1444	1002
DTTHZ2N	160/20	160	20	0,4	6	Dyn5	360	2600	53	1217	765	1434	920
DTTHZ2N	250/20	250	20	0,4	4	Dyn5	468	3400	56	1267	847	1474	1358
DTTHZ2N	250/20	250	20	0,4	6	Dyn5	468	3400	56	1232	843	1454	1037
DTTHZ2N	400/20	400	20	0,4	4	Dyn5	675	4500	59	1265	846	1644	1578
DTTHZ2N	400/20	400	20	0,4	6	Dyn5	675	4500	59	1330	861	1654	1621
DTTHZ2N	630/20	630	20	0,4	4	Dyn5	990	7100	61	1328	820	1644	1880
DTTHZ2N	630/20	630	20	0,4	6	Dyn5	990	7100	61	1397	871	1634	1887
DTTHZ2N	800/20	800	20	0,4	6	Dyn5	1170	8000	63	1460	880	1745	2275
DTTHZ2N	1000/20	1000	20	0,4	6	Dyn5	1395	9000	64	1562	980	1862	2731
DTTHZ2N	1250/20	1250	20	0,4	6	Dyn5	1620	11000	66	1604	983	1922	3180
DTTHZ2N	1600/20	1600	20	0,4	6	Dyn5	1980	13000	67	1703	999	2074	3972
DTTHZ2N	2000/20	2000	20	0,4	6	Dyn5	2340	16000	69	1778	1270	2259	4660
DTTHZ2N	2500/20	2500	20	0,4	6	Dyn5	2790	19000	70	1913	1270	2261	5280

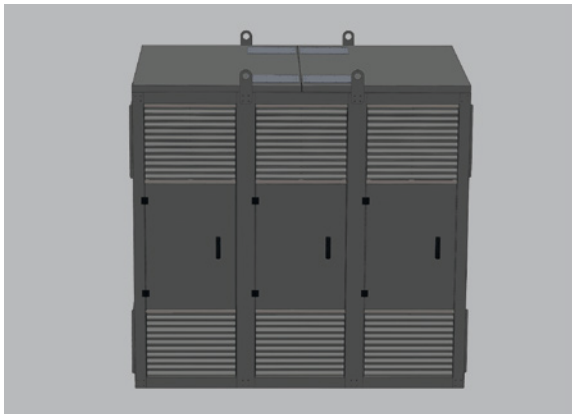


ENCLOSURES

Gravity Line – enclosure combination at U_m 24 kV

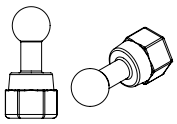
Transformer	Housing dimensions mm	Recommended housing	Weight kg
400, 630, 800	2100 x 1200 x 2400	1	280
1000	2150 x 1250 x 2500	2	300
1250, 1600	2300 x 1300 x 2700	3	380
2000, 2500	2500 x 1500 x 2700	4	480

- Recommended transformer/housing combination between IP21 and IP33 without loss of efficiency
- Suitable for AF mode (capacity 140 %)
- Suitable for indoor / floor installation
- Professional service and expert consultation
- Enhanced degree of protection up to IP5X and poke protection on demand
- Outdoor installation and PEHLA protective housing on demand



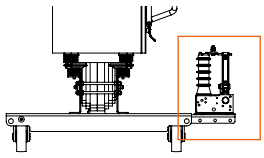
OPTIONS

Fixed ball points



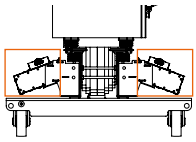
- Internal thread M12, straight model
- Fixed ball point diameter 20 mm or 25 mm
- On HV and LV side

Earthing switch



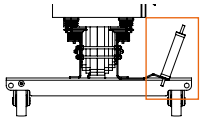
- Mounted to transformer chassis
- Actuation left-hand/right-hand at choice

Ventilation system



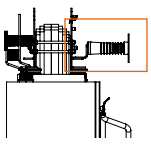
- Capacity increase up to 40%
- To cover brief power peaks

Surge arresters



- Customer information required re. choice of model

HV wired to post insulators



- To relieve the mechanical load on the terminals

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of the SGB-SMIT Group

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