ZTELEC GROUP
Powered Green & Reliability

OIL IMMERSED TRANSFORMER

Selection Guide

河南中天宇光电气装备有限公司

ZTELEC YUGUANG ELECTRIC TECHNOLOGY (HENAN) CO.,LTD

Content

Content

Founded in 1958, Henan Zhongtian Electric Equipment Group (hereinafter referred to as Ztelec Group) was formerly owned by the Ministry of Light Industry. Ztelec Group adheres to the core value concept of “Vision, Innovation, and Responsibility” and takes “Power the world with green and reliability” as its own responsibility. Focusing on production and manufacturing for over 50 years, the group has developed into an integrated group company specializing in four industries: Electric equipment, Composite materials, Enamelled copper wires, and Photovoltaic energy. Ztelec Group is represented by 5 manufacturing bases across 4 cities (Xuchang, Guiyang, Chengdu, and Dongguan) in China, with more than 1500 employees worldwide.

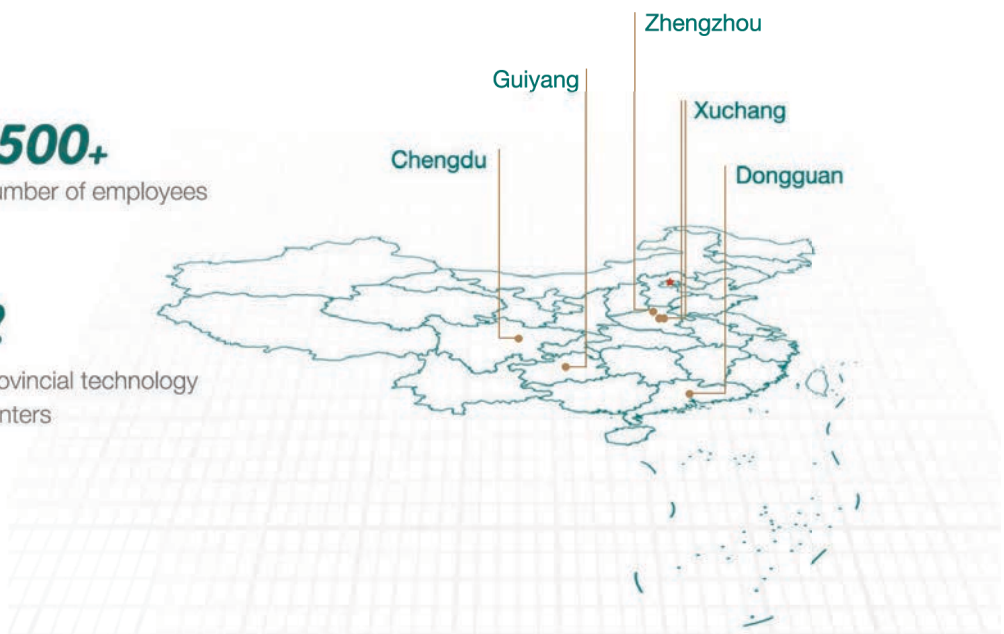
Ztelec is focusing on manufacturing MV and LV power generation, transmission, and distribution equipment, as well as PV equipment, including flexible solar panels, energy storage system, energy management devices, and substations. Ztelec owns 1 national postdoctoral research station and 2 provincial technology centers. It closely cooperates with the National Advanced Materials Laboratory of Beihang University and the Institute of Plasma of the Chinese Academy of Sciences to promote intelligent manufacturing levels and digital transformation. Ztelec is a Chinese enterprise committed to the global development, promoting an open technology and partner ecosystem, and actively practicing the common values of meaning, inclusiveness, and empowerment.

5
Manufacturing base

1500+
Number of employees

1
National postdoctoral research station

2
Provincial technology centers



02
Sustainability at Ztelec

The continuous improvement of the economy and environment in our community and the enhancement of the life quality of our staff and their families are the sustained aims of Ztelec.

In order to achieve these aims, Ztelec has made great efforts toward the balance between economic development and environmental protection, including how to design and manufacture products, how to refine products and services provided, how to cooperate with local suppliers and evaluate risks and opportunities, and how to fulfill its responsibilities.

03 Certificates & Patents

36 National Patents Granted -Validated

(Innovations in core technologies, product design, and manufacturing excellence)

Global Compliance & Certification-Certified by ISO, CE, CB,

and International Standards

04 Industrial development history

We introduced complete testing equipment and manufacturing machines, and started to produce power equipment, including 10kV and 35kV oil-immersed transformers and 10kV switchgear.

2003

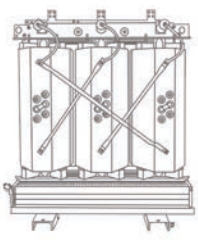
国家电网 STATE GRID

Won multiple bids with a total amount of approximately $6 million for the power transmission and transformation projects from the State Grid Corporation of China.

2009

2010

Started the production of S11 and S13 series cast resin dry-type transformers. Achieved significant progress in developing the S15 series of high-efficiency amorphous alloy transformers.



2006

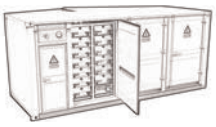
Successfully obtained ISO9001:2008 and ISO14001 certifications; the full series of 6kV, 10kV, and 35kV transformers passed the “type test” and “special test” conducted by the Suzhou Electrical Appliance Research Institute.

Through the cooperation with CNOOC, developed transformers for offshore power supply system under marine operation environment.

2012

Successfully passed the audit of SAM supplier management system from Schneider Electric and became their supplier in the field of Variable frequency transformer.

2017



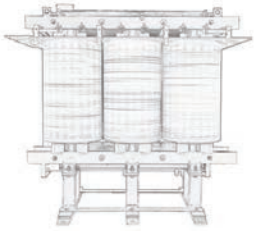
Began to provide container-type or box-type step-up integrated equipment for energy storage power stations (CESS), which integrates 35kV high-voltage switchgear, low-voltage switchgear and dry-type isolation transformers.

2022

2023

2014

It has gradually formed four product production lines, including oil immersed transformer, dry type transformer, high and low voltage switch gear, and box type substation. Meanwhile, started the sample making and market development of mining transformer, open type transformer and variable frequency transformer.



2019

Started batch production of traction transformer for railway, prefabricated photovoltaic intelligent substation and photovoltaic power generation system equipment.

05 Flexible & High efficient manufacture

Respond quickly to the customer's special requirements regarding environment, appearance, efficiency, delivery time, transportation, special quality requirements, and others. Provide personalized design and shorten the delivery cycle time.

Organize production in accordance with GB and international (IEC and IEEE) standards, implement a full-process control concept from raw material warehousing control to finished product inspection, focus on customers' experiences and core needs, and provide products and services that exceed customers' expectations

+ Maufacturing equipment

1 Vacuum casting system

2 Cut-to-length line for core sheets

3 Vacuum drying equipment

4 Winding equipment

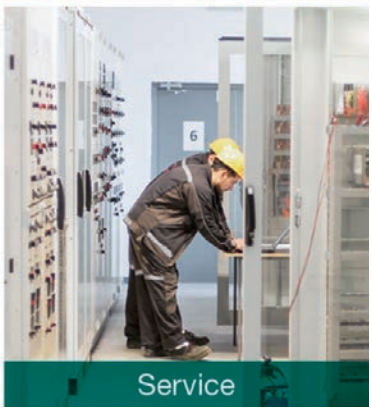
+ Implementation of TQM and Systerm

After introducing the lean production concept, we established 50 lean improvement quality criteria. Each process is provided with operation instructions and standardized operation criteria to implement the production plan, using timely management to improve communication efficiency and continuously shorten delivery time. The Toyota Production System (TPS), with a core focus on production process management (MPS), has gradually been developed by connecting sales, materials, planning, supply chain, services, and other areas.


Kanban System


Design


Test


Service

06 Testing

Regular Tests

- Voltage ratio measurement
- Applied withstand voltage test
- Induced withstand voltage test
- Partial discharge measurement
- No load loss and current measurement
- Winding resistances measurement
- Insulation resistance test
- Load loss and short circuit impedance measurement
- Transformer oil test

Type Tests

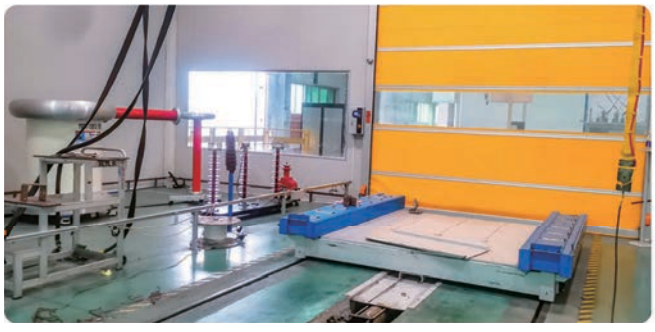
On customer requirements

- Temperature rise test
- Lightning impulse test
- Noise level test

Special Tests

On customers' requirements, below parameters can be checked

- Zero-sequence impedance
- No-load voltage harmonic
- Parallel capacity of windings
- Anti-corrosion protection checking
- Short circuit test



07 Installation and Service

Warehouse

+ In the warehouse, transformers should be protected from the pollution of water droplets, dust and sand. If provided with plastic cover, the transformer should be covered during storage.

Transport

+ The transformer is equipped with safety transport devices. The transformer without shell shall be lifted with lifting lugs, the medium and small dry transformers with shell shall be lifted with lifting rings, and the large transformer shall be lifted with special lifting device for foundation channel steel.

Shipping

+ The product is ready for shipping either by truck or sea freight once it has passed the tests.We take care of all official doucments, depending on destinations and delivery terms. We also provide different packaging for special applications or conditions.

Installation

+ We supply the installation guide and user manual for each transformer. Under normal conditions, check the transformer once a year and clear the dust by vacuum cleaner. The frequency of cleaning depends on the running conditions.

Service

+ When some parts need to be replaced or any information is required, the main parameters on the nameplate must be provided, especially the serial number. We provide stock in regular quantities of spare parts, in case of customer needs.

08 Customer cases

Subway Line 01, Zhengzhou 2014

Xinzheng Airport Terminal

A carrier rocket with Shenzhou-11 spacecraft, CASA, 2016

SAIF 225MW Gas Turbine Combined Cycle Power Project, Pakistan

Yuzhou Peak Photovoltaic Power Station Project

Khutul, "CEMENT-SHOKHO" JSC, Mongolia, 2015

Other achievements (in no particular order)

Aerospace and military projects:

+ Xinxiang Aviation Industry Group
+ Guilin Aerospace Electronics Co., Ltd.
+ Guizhou Aerospace Electric Co., Ltd.
+ AVIC Chengdu Aircraft Industry Group

Wind and light new energy projects:

+ Mahayana Wind Power Project
+ Mingyang Electric Co., Ltd.
+ Xuchang City Public Traffic Power Charging Construction

Automation field:

+ Huichuan Technology Co., Ltd.
+ Hekang New Energy Technology Co., Ltd.
+ Wolong Electric Group Co., Ltd.
+ Leadford Electric Technology Co., Ltd.
+ Shandong Xinfeng Electronics Technology Co., Ltd.
+ Shenzhen Kumark Drier & Automation
+ Shanghai Dongfang Electric

Metallurgy and petrochemical:

+ Shenhua Group
+ Yongfeng Iron and Steel Group Co., Ltd.
+ Harbin Electric Wind Energy Co., Ltd.
+ China Pingmei Shenma Group
+ China Shenhua Coal
+ Anyang Iron and Steel
+ State Grid Henan Electric Power Company

Business school program:

- Xinzheng South China City
- Xinzheng Wuyue Plaza
- The main venue of the National Peasant Games
- Zhengshang Stock Business Centers
- Jianye Group
- Yongwei Group
- CRCC No.18 Bureau Group
- Country Gradend Holdings Group
- Henan National University Science Park

Industrial manufacturing project:

- Puyang Longfeng Power Plant
- Xuchang Jinhui Stainless Steel Group Co., Ltd.
- Henan Zhigu Industrial Park
- Vietnam Tinh Bac Ninh Solar Project
- Philippine Paper Mill Powering System
- Geely Automobile Zhejiang Intelligent Plant

Pulp & Paper:

- Huatai Group
- Chenming Group
- Hengan Group
- Yinge Group
- Lee & Man Paper Mill
- Henli Group
- Yilin Paper Mill

ZTELEC GROUP
Powered Green & Reliability

ZTELEC is a top brand group company strongly supported by our own R&D team.

Oil-immersed transformer

Oil immersed transformer

Overview

Our company can produce a variety of oil immersed transformers with high voltage up to 35kV and capacity up to 31500kVA, including S9, S11 series and S13, S15 series of energy-saving products, S18, S20, S22 series. The product is widely used in industrial and mining enterprises, agriculture, civil construction and other distribution sites as well as places with more oil and chemical substances in oil and chemical industries.

Implementation standards

IEC60076: Power transformer

EN60076-11: Power transformers

EN50588-1: Medium power transformers for 50 Hz with a highest voltage for equipment not exceeding 36 kV - Part 1: General requirements

EU548 Tier 2

IEEE C57.12.10-2017: IEEE Standard Requirements for Liquid - Immersed Power Transformers

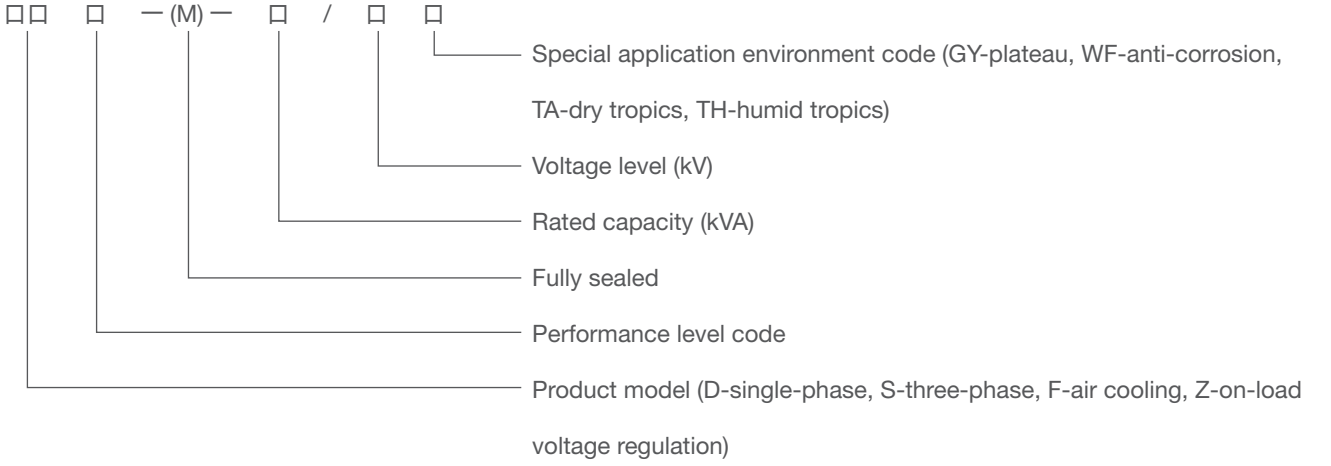
GB1094: Power transformer

GB/T6451: Specification and technical requirements of oil immersed power transformers

JB/T10088: 6kV~500kV power transformer noise level

GB/T7595: Quality standard of transformer oil in service

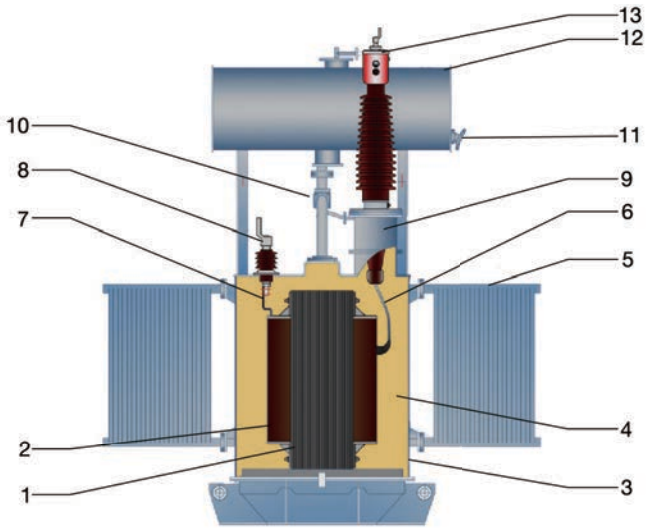
Type description



Features

+ The body adopts a new type of insulation structure to improve the ability to withstand short-circuits;
+ Spiral coil with longitudinal oil passage has better internal heat dissipation performance;
+ With high efficiency and low loss, it can save a lot of power and operating costs;
+ The surface of the corrugated oil tank is coated with conformal coating after oil removal, rust removal, and phosphating. It is suitable to use in metallurgy, petrochemical, and mining environments.

Configuration



1. Iron core
2. Winding
3. Oil tank
4. Transformer oil
5. Heat sink
6. Hv down-lead
7. LV down-lead
8. LV bushing
9. Elevating seat
10. Gas relay
11. Oil level gauge
12. Oil conservator
13. HV bushing

Single phase transformer

Overview

The single phase transformers are specifically designed for the decentralization distribution network to service residential overhead distribution loads of town and countryside.

They are also suitable for light and diversified power applications. These transformers are designed for the application conditions normally encountered in electric utility power distribution systems.

We offer two kinds of metal core types for two basic transformer types: conventional type and complete self protect type.

Two types of materials are available: CRGO iron core and amorphous Iron core.

Implementation standards

JB/T 10317-2014: Technical parameters and requirements of single phase oil immersed distribution transformers

Features

- Meet or exceed ANSL standard, IEC standard, GB standard, SANS standard and IEEE standard;
- Robust construction, excellent short circuit resistance and high temperature resistance;
- Safe running, installation and operation;
- Excellent modern appearance;
- Higher system reliability;
- Fully- sealed;
- Reasonable structure;
- High security and reliability in operation;
- High capacity of overload and high efficiency;

Technical parameters

D10 series 11kV single phase transformer

Rated capacity (kVA)	Voltage group		Vector group	Impedance voltage (%)	Loss (W)		No-load current (%)	Weight (kg)			Boundary dimension (L×W×H, mm)	Gauge vertical / Horizonta
	HV (kV)	LV (kV)			No-load loss	Load loss		Body weight	Oil weight	Gross weight		
5	11 10.5 10 6.3 6	0.22 0.24	Li0 Li6	3.5	35	145	4	50	40	130	530*450*850	400/250
10					35	260	3.5	65	40	150	560*450*870	400/300
16					65	365	3.2	80	40	180	600*450*920	400/300
20					80	430	3.0	100	50	205	620*450*940	400/300
30					100	625	2.5	115	50	225	700*450*980	400/300
40					125	775	2.5	150	55	270	700*480*1040	400/300
50					150	950	2.3	175	70	310	650*510*1100	400/300
63					180	1135	2.1	190	80	340	660*520*1100	400/300
80					200	1400	2.0	240	100	420	770*530*1120	400/300
100					240	1650	1.9	295	100	490	840*600*1150	400/300
125					285	1950	1.8	370	110	560	890*740*1160	500/400
160					365	2365	1.7	430	130	650	950*790*1170	500/400

Note: Due to continuous product improvement, the dimensions provided in this sample are for reference only. If necessary, our company can design and produce according to user requirements.

S11-M-30~6300/10
series of oil immersed transformer

Features

+ The three-phase oil immersed transformer produced by our company uses a new insulating structure to improve the ability to withstand short-circuits. The iron core is made of high-quality cold-rolled silicon steel sheet, and the winding is made of multilayer cylinder or foil structure. All fasteners adopt special anti-loose treatment;

+ The product has the characteristics of high efficiency and low loss. It can greatly save power consumption and operating costs, bringing significant social benefits. It is a national high-tech product.

Implementation standards

GBT6451-2015: Oil immersed power transformer technical parameters and requirements
GB 1094.1-2013: Power transformers Part 1: General rules
GB 1094.2-2013: Power transformers Part 2: Temperature rise of liquid immersed transformers
GB 1094.5-2008: Power transformers Part 5: Capability to withstand short circuit
GBT 1094.7-2008: Power transformers Part 7: Load guidelines for oil immersed power transformers.

Regular service conditions

a The Elevation (m.a.s.l.) is below 1000m;

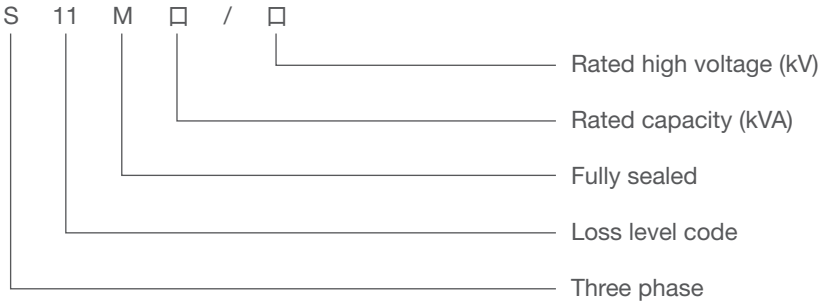
b Ambient temperature;

c Highest ambient temperature +40℃ ;

d Highest daily average air temperature +20℃ ;

e Lowest outdoor ambient temperature -25℃ ;

Type description

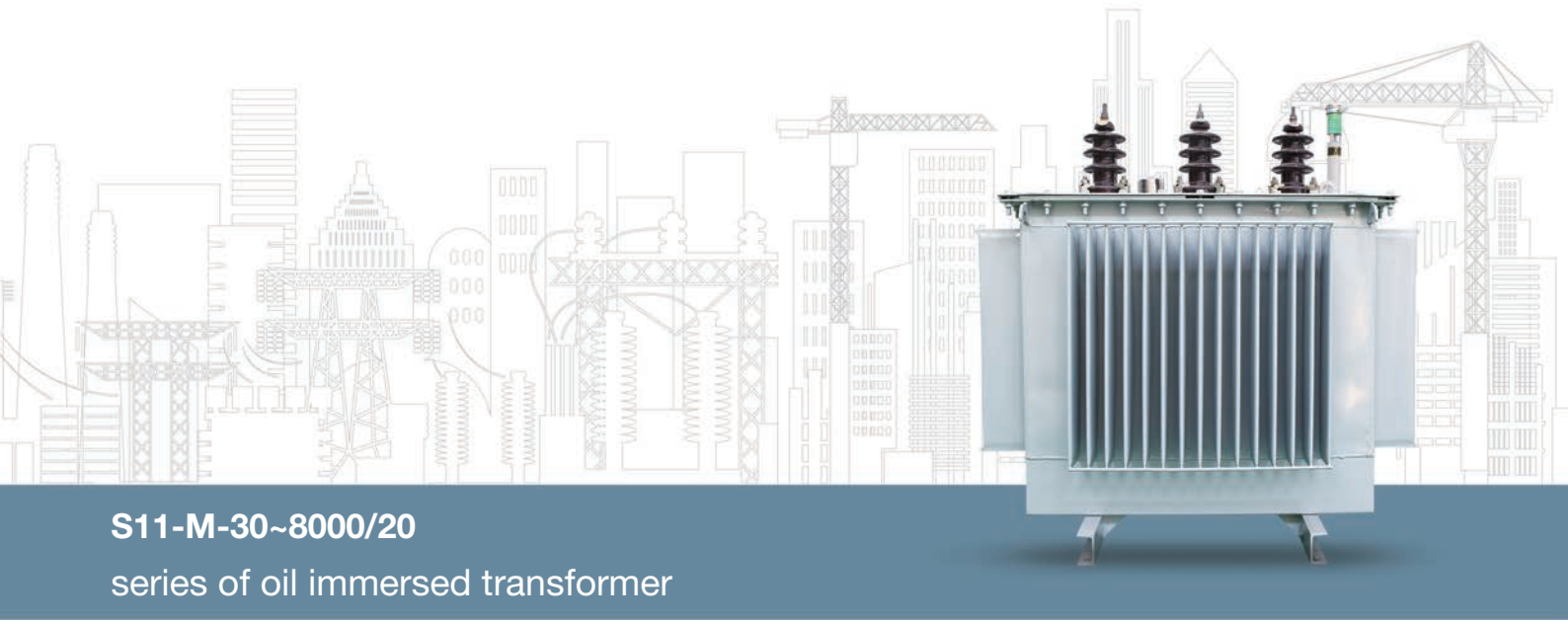


Technical parameters

Rated capacity (kVA)	Voltage group		Vector group	Loss (W)		No-load current (%)	Impedance voltage (%)	Boundary dimension (L×W×H, mm)	Weight (kg)
	HV (kV)	LV (kV)		No-load loss (W)	Load loss (W)				
30	11 10.5 10 6	0.4	Dyn11 or Yyn0	100	630/600	1.5	4	670×310×615	346
50				130	910/870	1.3		700×325×630	417
80				180	1310/1250	1.2		755×355×690	556
100				200	1580/1500	1.1		785×360×685	619
125				240	1890/1800	1.1		805×370×720	703
160				280	2310/2200	1.0		850×385×735	794
200				340	2730/2600	1.0		865×405×805	935
250				400	3200/3050	0.9		905×415×935	1086
315				480	3830/3650	0.9		925×440×915	1226
400				570	4520/4300	0.8		970×465×960	1468
500				680	5410/5150	0.8		1035×500×1010	1758
630				810	6200	0.6	4.5	1110×525×1075	2074
800				980	7500	0.6		1190×580×1155	2840
1000				1150	10300	0.6		1205×560×1195	2842
1250				1360	12000	0.5		1185×590×1205	3168
1600				1640	14500	0.5		1225×565×1345	3800
2000				1940	18300	0.4	5.0	1310×615×1435	4633
2500				2290	21200	0.4		1390×660×1510	5329

Note: 1. The load loss above the diagonal line in the table applies to the Dyn11 vector group. The load loss below the diagonal line applies to the Yyn0 vector group.

2. Due to continuous product improvement, the dimensions provided in this sample are for reference only. If necessary, our company can design and produce according to user requirements. Please contact the company in time.



S11-M-30~8000/20
series of oil immersed transformer

Features

The fully sealed transformer adopts a fully oil-filled sealed type. The shell of the corrugated oil tank adapts to the expansion of the oil with its own elasticity and it is a sealed oil tank, which has been widely used in various power distribution equipment.

- The iron core is made of high-quality cold-rolled oriented silicon steel sheet, which is manufactured by the automatic cross - cutting process and the step - lap process and the the step-lap process, which improves the distribution of magnetic flux density inside the iron core, reduces the vibration energy of the iron core, and effectively reduces the noise and loss;
- The coil is wound with high - strength enameled wire (or paper - covered wire), cylindrical (or cake) structure with uniform ampere-turn distribution, reasonable insulation structure, and strong short-circuit resistance;
- The transformer body is fastened with an anti-loosening structure, the fastening part is equipped with a locknut, and the non-hanging core structure is adopted to ensure that it will not come loose after long-distance transportation;
- The corrugated sheet of the corrugated oil tank replaces the oil conservator. The corrugated sheet can expand and shrink with the change of the transformer oil volume, isolate the transformer from the atmosphere, prevent and slow down the deterioration of the oil and insulation being affected with damp, enhance the reliability of operation, and keep the transformer operating normally without maintenance;
- Equipped with "remote monitoring" signal thermometer and pressure release valve, which enhances the reliability of transformer operation.

Technical parameters

Rated capacity (kVA)	Voltage group		Vector group	Loss (W)		No-load current (%)	Impedance voltage (%)	Boundary dimension (L×W×H, mm)	Weight (kg)
	HV (kV)	LV (kV)		No-load loss (W)	Load loss (W)				
30	20 22 24	0.4	Dyn11 or Yyn0	100	690/660	2.1	5.5	670×310×615	346
50				130	1010/960	2.0		700×325×630	417
80				180	1440/1370	1.8		755×355×690	556
100				200	1730/1650	1.6		785×360×685	619
125				240	2080/1980	1.5		805×370×720	703
160				290	2540/2420	1.4		850×385×735	794
200				340	3000/2860	1.3		865×405×805	935
250				400	3520/3350	1.2		905×415×935	1086
315				480	4210/4010	1.1		925×440×915	1226
400				570	4970/4730	1.0		970×465×960	1468
500				680	5940/5660	1.0		1035×500×1010	1758
630				810	6820	0.9	6.0	1110×525×1075	2074
800				980	8250	0.8		1190×580×1155	2840
1000				1150	11330	0.7		1205×560×1195	2842
1250				1380	13200	0.7		1185×590×1205	3168
1600				1660	15950	0.6		1225×565×1345	3800
2000				1950	19140	0.6		1310×615×1435	4633
2500				2340	22220	0.5		1390×660×1510	5329

Note: 1. The load loss above the diagonal line in the table applies to the Dyn11 vector group. The load loss below the diagonal line applies to the Yyn0 vector group.
2. Due to continuous product improvement, the dimensions provided in this sample are for reference only. If necessary, our company can design and produce according to user requirements. Please contact the company in time.

S13-M-30~6300/10
series of 3D oil immersed transformer

Features

+ The series of oil immersed transformers breaks through the traditional planar structure and adopts a three-phase symmetrical three-dimensional structure. The magnetic circuit of the three phase iron core is completely symmetrical, the magnetic resistance is greatly reduced, and the excitation current and no-load loss are significantly reduced. It is an energy-efficient transformer that uses traditional materials but has lower noise and compact structure. Its outstanding performance in energy conservation and environmental protection is completely in compliance with China's energy conservation policy.

Type description

S 13 — (M) — RL — □ / □

- Voltage level (kV)
- Rated capacity (kVA)
- Three-dimensional structure wound core
- Fully sealed
- Loss Level code:13
- Three-phase

Technical parameters

Rated capacity (kVA)	Voltage group		Vector group	Loss (W)		No-load current (%)	Impedance voltage (%)	Boundary dimension (L×W×H, mm)	Weight (kg)
	HV (kV)	LV (kV)		No-load loss (W)	Load loss (W)				
30	11 10.5 10 6	0.4	Dyn11 or Yyn0	80	630/600	0.3	4	800×620×1100	300
50				100	910/870	0.24		840×640×1150	380
80				130	1090/1040	0.22		980×670×1210	480
100				150	1310/1250	0.21		1040×700×1230	540
125				170	1580/1500	0.20		910×800×1260	590
160				200	1890/1800	0.19		1110×970×1290	720
200				240	2310/2200	0.18		1180×1020×1310	860
250				290	2730/2600	0.17		1190×1030×1300	970
315				340	3200/3050	0.16		1290×1120×1360	1170
400				410	3830/3650	0.16		1280×1110×1410	1320
500				480	4520/4300	0.16		1400×1210×1420	1490
630				570	6200	0.15	4.5	1440×1250×1490	1910
800				700	7500	0.15		1540×1340×1520	2160
1000				830	10300	0.14		1600×1420×1630	2550
1250				970	12000	0.13		1680×1460×1730	3160
1600				1170	14500	0.12		1780×1540×1810	3850

Note: 1. The load loss above the diagonal line in the table applies to the Dyn11 vector group. The load loss below the diagonal line applies to the Yyn0 vector group.

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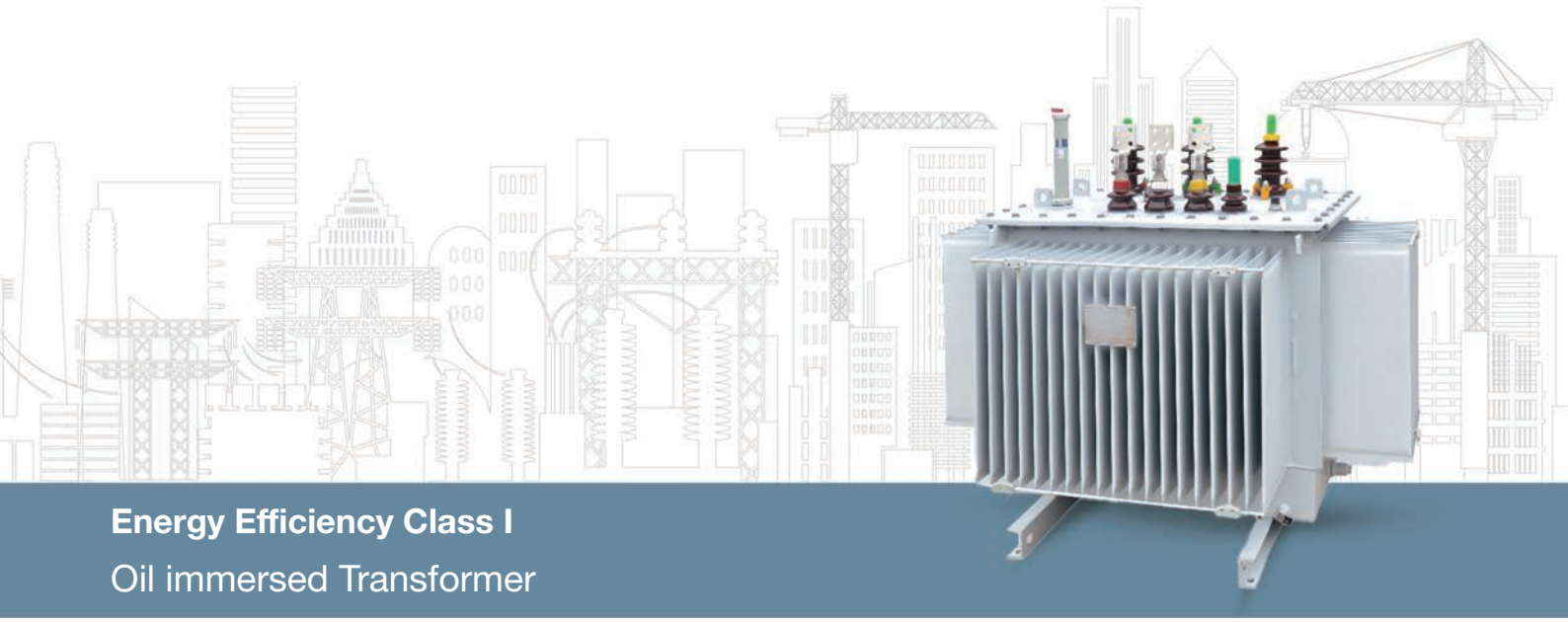


Energy Efficiency Class I
Oil immersed Transformer

Overview

Through the research and application of new materials and processes and continuous independent innovation, our company has achieved the purpose of reducing losses and noise through optimized design and continuous improvement of iron core and winding, meeting the requirements of the national standard GB20025-2024, GB/T 6451 - 2023 , and the product performance has reached the domestic advanced level. Compared with the energy efficiency level 2, the energy efficiency level 1 product has lower losses.

Implementation standards

GB/T 1094.1: Power transformers - Part 1: General
GB/T 2900.95: Electrical terms transformers, voltage regulators and reactors
GB/T 6451: Oil immersed power transformer technical parameters and requirements
GB/T 25438: Three-phase oil immersed three-dimensional wound core transformer technical parameters and requirements
GB/T 25446: Technical parameters and requirements of oil immersed amorphous alloy iron core transformers

Type description

S — (M) — □ / □ — NX1

- NX1 — Energy efficiency grade
- □ — Voltage level (kV)
- □ — Rated capacity (kVA)
- (M) — Fully sealed
- S — Three-phase

Technical parameters

Rated capacity (kVA)	Electrical steel strip			Amorphous alloy			Short-circuit impedance (%)
	No-load loss (W)	Load loss (W)		No-load loss (W)	Load loss (W)		
		Dyn11 / Yzn11	Yyn0		Dyn11 / Yzn11	Yyn0	
30	65	455	430	25	510	480	4.0
50	80	655	625	35	735	700	
63	90	785	745	40	880	840	
80	105	945	900	50	1060	1010	
100	120	1140	1080	60	1270	1215	
125	135	1360	1295	70	1530	1450	
160	160	1665	1585	80	1870	1780	
200	190	1970	1870	95	2210	2100	
250	230	2300	2195	110	2590	2470	
315	270	2760	2630	135	3100	2950	
400	330	3250	3095	160	3660	3480	
500	385	3900	3710	190	4380	4170	
630	460	4460		250	5020		4.5
800	560	5400		300	6075		
1000	665	7415		360	8340		
1250	780	8640		425	9720		
1600	940	10440		500	11745		
2000	1085	13180		550	14000		5.0
2500	1280	15270		670	16230		

Note: Due to continuous product improvement, the dimensions provided in this sample are for reference only. If necessary, our company can design and produce according to user requirements. Please contact the company in time.

Energy Efficiency Class II Oil immersed Transformer

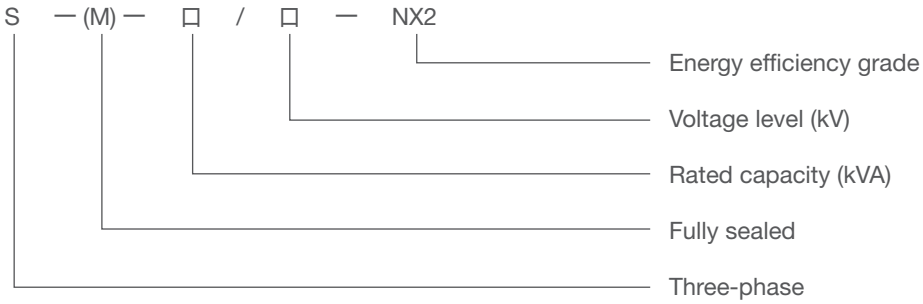
Overview

Through the research and application of new materials and processes and continuous independent innovation, our company has achieved the purpose of reducing losses and noise through optimized design and continuous improvement of iron core and winding, meeting the requirements of the national standard GB20025-2024, GB/T 6451 - 2023, and the product performance has reached the domestic advanced level. Compared with the energy efficiency level 2, the energy efficiency level 1 product has lower losses.

Implementation standards

GB/T 1094.1: Power transformers - Part 1: General
GB/T 2900.95: Electrical terms transformers, voltage regulators and reactors
GB/T 6451: Oil immersed power transformer technical parameters and requirements
GB/T 25438: Three-phase oil immersed three-dimensional wound core transformer technical parameters and requirements
GB/T 25446: Technical parameters and requirements of oil immersed amorphous alloy iron core transformers

Type description



Technical parameters

Rated capacity (kVA)	Electrical steel strip			Amorphous alloy			Short-circuit impedance (%)
	No-load loss (W)	Load loss (W)		No-load loss (W)	Load loss (W)		
		Dyn11 / Yzn11	Yyn0		Dyn11 / Yzn11	Yyn0	
30	70	505	480	33	535	510	4.0
50	90	730	695	43	780	745	
63	100	870	830	50	930	890	
80	115	1050	1000	60	1120	1070	
100	135	1265	1200	75	1350	1285	
125	150	1510	1440	85	1615	1540	
160	180	1850	1760	100	1975	1880	
200	215	2185	2080	120	2330	2225	
250	260	2560	2440	140	2735	2610	
315	305	3065	2920	170	3275	3120	
400	370	3615	3440	200	3865	3675	
500	430	4330	4120	240	4625	4400	
630	510	4960		320	5300		4.5
800	630	6000		380	6415		
1000	745	8240		450	8800		
1250	870	9600		530	10260		
1600	1050	11600		630	12400		
2000	1225	14640		710	14800		5.0
2500	1440	16960		860	17150		

Note: Due to continuous product improvement, the dimensions provided in this sample are for reference only. If necessary, our company can design and produce according to user requirements. Please contact the company in time.

Energy Efficiency Class III Oil immersed Transformer

Overview

Through the research and application of new materials and processes and continuous independent innovation, our company has achieved the purpose of reducing losses and noise through optimized design and continuous improvement of iron core and winding, meeting the requirements of national standards GB20025 - 2024 and GB/T 6451 - 2023, and the product performance has reached the domestic advanced level.

Implementation standards

IEC60076 Power Transformer

GB/T 1094.1: Power transformers - Part 1: General

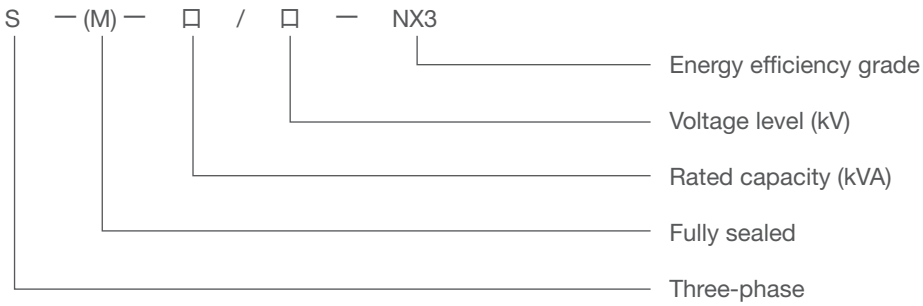
GB/T 2900.95: Electrical terms transformers, voltage regulators and reactors

GB/T 6451: Oil immersed power transformer technical parameters and requirements

GB/T 25438: Three-phase oil immersed three-dimensional wound core transformer technical parameters and requirements

GB/T 25446: Technical parameters and requirements of oil immersed amorphous alloy iron core transformers

Type description



Technical parameters

Rated capacity (kVA)	Electrical steel strip			Amorphous alloy			Short-circuit impedance (%)
	No-load loss (W)	Load loss (W)		No-load loss (W)	Load loss (W)		
		Dyn11 / Yzn11	Yyn0		Dyn11 / Yzn11	Yyn0	
30	80	630	600	33	630	600	4.0
50	100	910	870	43	910	870	
63	110	1090	1040	50	1090	1040	
80	130	1310	1250	60	1310	1250	
100	150	1580	1500	75	1580	1500	
125	170	1890	1800	85	1890	1800	
160	200	2310	2200	100	2310	2200	
200	240	2730	2600	120	2730	2600	
250	290	3200	3050	140	3200	3050	
315	340	3830	3650	170	3830	3650	
400	410	4520	4300	200	4520	4300	
500	480	5410	5150	240	5410	5150	
630	570	6200		320	6200		4.5
800	700	7500		380	7500		
1000	830	10300		450	10300		
1250	970	12000		530	12000		
1600	1170	14500		630	14500		
2000	1360	18300		720	18300		5.0
2500	1600	21200		865	21200		

Note: Due to continuous product improvement, the dimensions provided in this sample are for reference only. If necessary, our company can design and produce according to user requirements. Please contact the company in time.

S(B)H15-M-30~1600/10
series of amorphous oil type transformer

Features

+ Amorphous alloy is a new type energy-saving material. Its metal atoms are arranged in a disorderly, amorphous manner, and its crystal structure is completely different from that of silicon steel, which is more conducive to magnetization and demagnetization. The iron core sheet is extremely thin, only 0.025mm, even thinner than one-tenth of the thickness of ordinary silicon steel sheet. When this new material is used for transformer cores, with the features of high saturation magnetic induction, low loss, low excitation current, and good temperature stability. Amorphous alloy transformer has the advantages of low no-load loss, strong anti-short-circuit capability, advanced structure, energy - saving property, and obvious environmental - protection effect, and is an ideal option for energy saving currently.

Type description

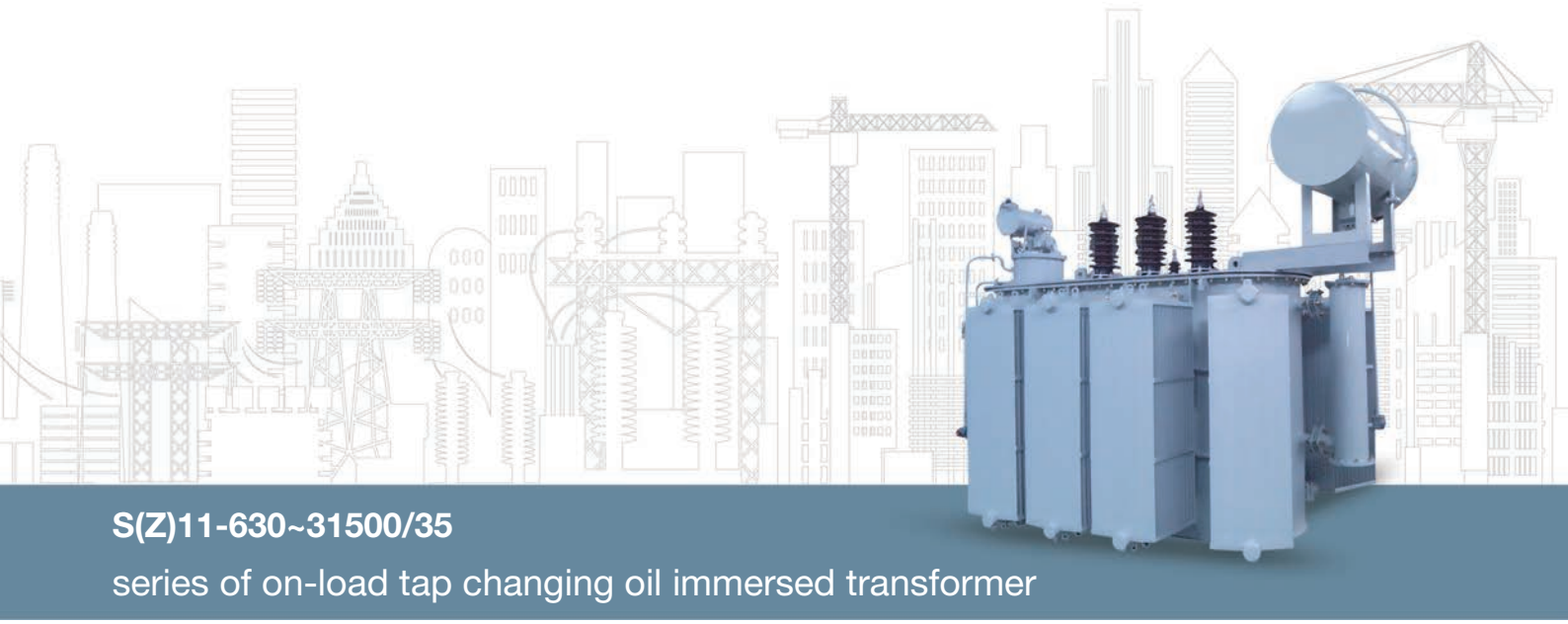
S (B) H 15 — (M) — □ / □

- Voltage level (kV)
- Rated capacity (kVA)
- Fully sealed
- Performance code: 15
- Amorphous alloy core
- Low-voltage foil coil
- Three-phase

Technical parameters

Rated capacity (kVA)	Voltage group		Vector group	Loss (W)		No-load current (%)	Impedance voltage (%)	Boundary dimension (L×W×H, mm)	Weight (kg)
	HV (kV)	LV (kV)		No-load loss (W)	Load loss (W)				
30	11 10.5 10 6.3 6	0.4	Dyn11 or Yyn0	33	600	1.5	4	920×850×830	410
50				43	870	1.2		1040×780×870	520
63				50	1040	1.1		1010×810×880	570
80				60	1250	1.0		1060×830×910	640
100				75	1500	0.9		1140×830×860	750
125				85	1800	0.8		1110×880×950	830
160				100	2200	0.6		1130×880×1000	940
200				120	2600	0.6		1240×900×1020	1090
250				140	3050	0.6		1290×900×1070	1250
315				170	3650	0.5		1380×840×1110	1470
400				200	4300	0.5		1420×920×1250	1710
500				240	5150	0.5	4.5	1360×1040×1180	1990
630				320	6200	0.3		1530×1120×1310	2390
800				380	7500	0.3		1880×1210×1360	2760
1000				450	10300	0.3		2040×1520×1360	3240
1250				530	12000	0.2		2140×1520×1430	3820
1600				630	14500	0.2		2260×1540×1500	4620

Note: 1. The load loss above the diagonal line in the table applies to the Dyn11 vector group. The load loss below the diagonal line applies to the Yyn0 vector group.
2. Due to continuous product improvement, the dimensions provided in this sample are for reference only. If necessary, our company can design and produce according to user requirements. Please contact the company in time.



S(Z)11-630~31500/35

series of on-load tap changing oil immersed transformer

Technical parameters

SZ11- □ /35 on-load regulating oil immersed power transformer

Rated capacity (kVA)	Voltage group		Vector group	Loss (W)		No-load current (%)	Impedance voltage (%)	Boundary dimension (L×W×H, mm)	Weight (kg)
	HV (kV)	LV (kV)		No-load loss (W)	Load loss (W)				
2000	35-38.5	6.3 10.5	Yd11	2300	19200	0.50	6.5	2460×2050×2500	2610
2500				2720	20600	0.50		2340×2300×2930	3310
3150	35-38.5	6.3 10.5		3230	24700	0.50	7.0	2350×2350×2990	3580
4000				3870	29100	0.50		2400×2410×3050	3990
5000				4640	34200	0.50		2440×2450×3100	4740
6300				5630	36700	0.50	8.0	2470×2510×3170	5120
8000	35-38.5	6.3 6.6 10.5 11	YNd11	7870	40600	0.40		2500×2590×3230	5880
10000				9280	48000	0.40		2550×2610×3250	7770
12500				10940	56800	0.35	8.0	2780×2660×3300	8750
16000				13160	70300	0.35		3020×2710×3370	9930
20000				15560	82700	0.30		3250×2760×3410	12760

Note:Due to continuous product improvement, the dimensions provided in this sample are for reference only. If necessary, our company can design and produce according to user requirements. Please contact the company in time.

Technical parameters

S11-35kv power transformer

Rated capacity (kVA)	Voltage group		Vector group	Loss (W)		No-load current (%)	Impedance voltage (%)	Boundary dimension (L×W×H, mm)	Weight (kg)
	HV (kV)	LV (kV)		No-load loss (W)	Load loss (W)				
630	35-38.5	3.15 6.3 10.5	Yd11	830	7860	0.65	6.5	2300×1100×2000	2610
800				980	9400	0.65		2390×1130×2070	3310
1000				1150	11500	0.65		2420×1200×2110	3580
1250				1400	13900	0.55		2500×1270×2130	3990
1600				1690	16600	0.45		2510×1290×2340	4740
2000				2170	18300	0.45		2420×2070×2390	5120
2500				2560	19600	0.45		2520×2210×2470	5880
3150	35-38.5	3.15 6.3 10.5		3040	23000	0.45	7.0	2630×2280×2510	7770
4000				3610	27300	0.45		2720×2430×2570	8750
5000				4320	31300	0.45		2870×2470×2750	9930
6300				5250	35000	0.45	8.0	3100×2580×2950	12760
8000	35-38.5	3.15 3.3 6.3 6.6 10.5 11	YNd11	7200	38400	0.35		3250×2680×3150	14500
10000				8700	45300	0.35		3320×2720×3230	16900
12500				10000	53800	0.30		3410×2950×3410	19980
16000				12100	65800	0.30		3600×3220×3630	24200
20000				14400	79500	0.30		3810×3640×4040	31200
25000				17000	94000	0.25	10.0	4180×4170×4260	36100
31500				20200	112000	0.25		4820×4630×4440	42600

Note:Due to continuous product improvement, the dimensions provided in this sample are for reference only. If necessary, our company can design and produce according to user requirements. Please contact the company in time.

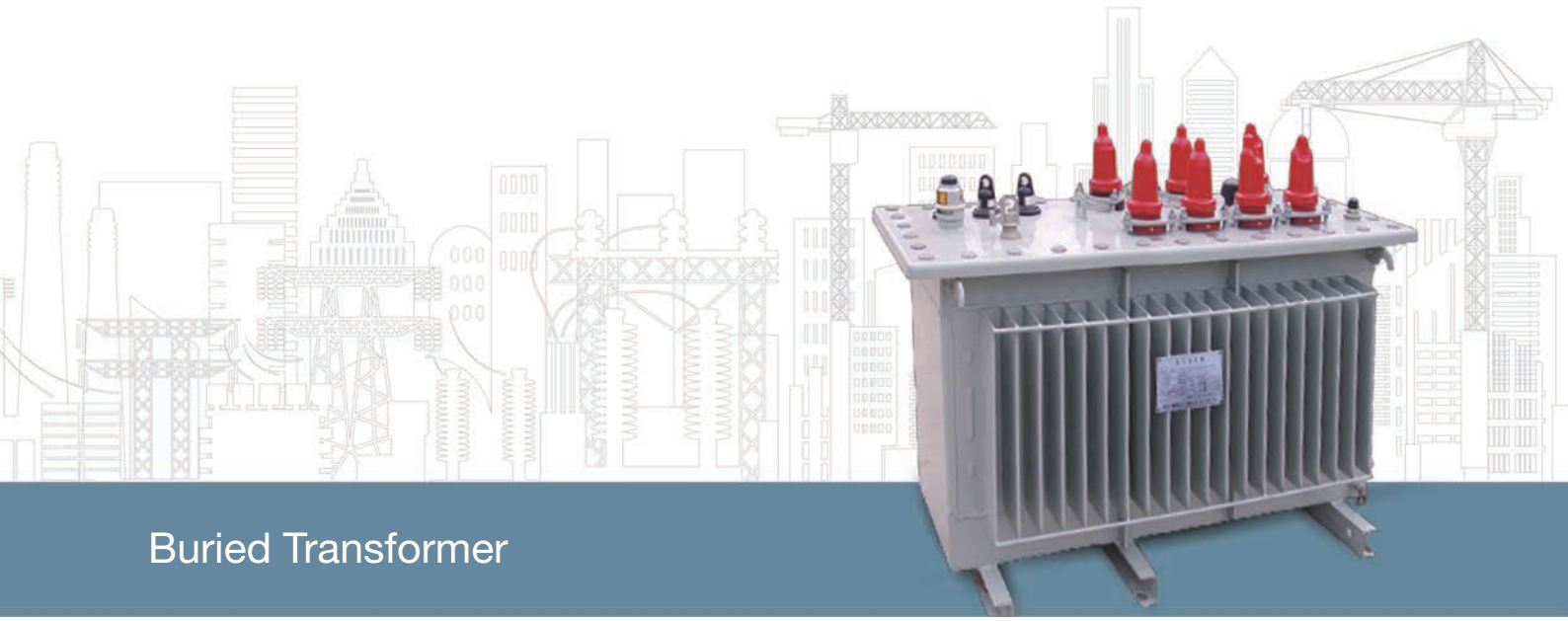
Intelligence on-load capacity-regulating and voltage-regulating combined transformer

Overview

Intelligent on - load capacity - regulating and voltage - regulating combined transformer is a new technology and energy-saving distribution transformer. This equipment is composed of three parts: the main body of the transformer, the intelligent control unit and the remote control loop.

The transformer body is equipped with a special new type of switch that integrates on-load capacity regulation and voltage regulation. It has two rated capacities, large and small. The two rated - capacity operation modes can be automatically switched according to the load size, and the voltage can be automatically adjusted according to the power consumption at the output terminal. It solves the problem of large transformer loss caused by the large seasonal and periodic load changes in the power distribution station area, and overcomes the problem of operation and maintenance caused by manual operation of no-load capacity regulating and voltage regulating transformers.

The intelligent control unit is equipped with a low-voltage power distribution terminal management part, a low-voltage power distribution metering part and a reactive power compensation part, which can automatically detect and compensate the transformer on-site, effectively improve the power factor and solve the three-phase grid unbalance problem through the common compensation and sub-compensation of capacitors. By configuring a remote management terminal through the GPS wireless network, it can monitor and collect data on voltage, current, active and reactive power, other power - consumption parameters, transformer oil, gas, temperature, etc. It can achieve "remote control, telemetry, remote adjustment, remote signaling" functions.



Buried Transformer

Overview

The buried transformer, also known as the buried box transformer, adopts a split combined structure and consists of a buried transformer, a prefabricated pit, and a low-voltage power distribution cabinet with a light box structure. The high-voltage and transformer units are buried below the ground and do not occupy the surface area, which greatly reduce high-voltage danger and electromagnetic radiation. Above the surface is the media advertising light box. The low-voltage distribution box is hidden in the light box, which has become a highlight to beautify the city. Its occupied area is only 1/ 5 of the traditional European box transformer.

In addition, some media advertising light boxes use energy-saving and long-lasting LED light sources, which are 80% more energy-efficient than traditional light sources, they are suitable for street lighting, airports, commercial centers, tourist attractions, municipal squares and other places. It is an energy - saving and environmentally friendly distribution network solution. It is very consistent with the "energy-saving society" currently advocated around the world.

Our company can produce buried transformers with high voltage up to 35kV and capacity up to 2000kVA. This product can be customized and produced according to the specific requirements of customers.

Electric furnace transformer

Overview 概述

Electric furnace transformers are mainly used in resistance furnaces and salt bath furnaces for heat treatment of mechanical parts, powder metallurgy sintering, non-ferrous metal smelting, etc., and can also be used as power transformers for steel making electric arc furnaces. The capacity of electric furnace transformers is configured according to the size of the electric arc furnace and the smelting process. It meets the requirements of the smelting process by means of voltage regulation.

There are two types of voltage regulation: on-load voltage regulation and non-excitation voltage regulation. Large-scale electric furnace transformers with on-load voltage regulation do not have series reactors, and small and medium-sized electric furnace transformers without excitation voltage regulation can be divided into two types with series reactors and those without reactors. The former relies on the input and removal of the series reactor to change the impedance. The latter changes the winding impedance by changing the connection method of the high-voltage winding of the furnace transformer itself.

Type description

H S SP Z (K) □ / □

- Voltage level (kV)
- Rated capacity (kVA)
- Built-in reactor
- On-load voltage regulation
- SP Forced oil circulating water cooling / FP Forced oil circulating air cooling
- S Three-phase, D Single-phase
- H Steel making electric arc furnace transformer / HJ Ladle refining furnace transformer / HZ Electroslag furnace transformer / HG Power frequency furnace transformer

Order Information

Normal use conditions for the product

a Environment temperature: highest temperature 40℃ , lowest -30℃ .

b Elevation: no more than 1000m.

c Relative humidity: daily average≤95%, monthly average≤90%.

d Maximum wind speed (outdoor): 35m/s (10m above the ground and average value over 10 min).

e Anti-earthquake performance (withstand): 8.

Order Information

In order to provide you with better service, the following data are required when ordering.

- + Specification and type
- + High voltage
- + Low voltage
- + Coil material
- + Phases
- + Tapping range
- + Rated frequency
- + Vector group
- + Insulation grade
- + Ambient environment

Note: Please specify your requirements for special products.

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