SOJO 华珠

Transformer

BEIJING SOJO ELECTRIC CO., LTD.
WUXI POWER TRANSFORMER CO.,LTD.

Honor & Certificate


中联认证中心

环境管理体系认证证书

注册号：01410E10123ROM

兹证明

无锡市电力变压器有限公司

江苏省无锡市惠山区洛社镇杨市扇杨路8号　　邮编：214154

环境管理体系符合：

GB/T 24001-2004 idt ISO 14001:2004

通过认证范围如下：

110KV 及以下油浸式电力变压器和 10kV 干式变压器的设计、生产和相关管理活动

证证日期：2010 年 10 月 13 日　　有效期至：2013 年 10 月 12 日

中心主任（签字）：


中联认证中心

职业健康安全管理体系认证证书

注册号：01411S10038ROM

兹证明

无锡市电力变压器有限公司

江苏省无锡市惠山区洛社镇杨市扇杨路8号　　邮编：214154

职业健康安全管理体系符合：

GB/T28001-2001

（本标准覆盖了 OHSAS 18001：1999 标准的所有技术内容）

通过认证范围如下：

110KV 及以下油浸式电力变压器和 10KV 干式变压器的设计、生产和相关管理活动

证证日期：2011 年 7 月 25 日　　有效期至：2014 年 7 月 24 日

中心主任（签字）：


中联认证中心

质量管理体系认证证书

注册号：01411Q10236R1M

兹证明

无锡市电力变压器有限公司

江苏省无锡市惠山区洛社镇杨市扇杨路8号　　邮编：214154

质量管理体系符合：

GB/T19001-2008/ISO9001:2008

通过认证范围如下：

110KV 及以下油浸式电力变压器和 10KV 干式变压器的设计、生产和服务

证证日期：2011 年 7 月 25 日　　有效期至：2014 年 7 月 24 日

中心主任（签字）：


证书号第2421529号

实用新型专利证书

实用新型名称：叠积式变压器铁芯结构

发　明　人：王佳美;李华萍

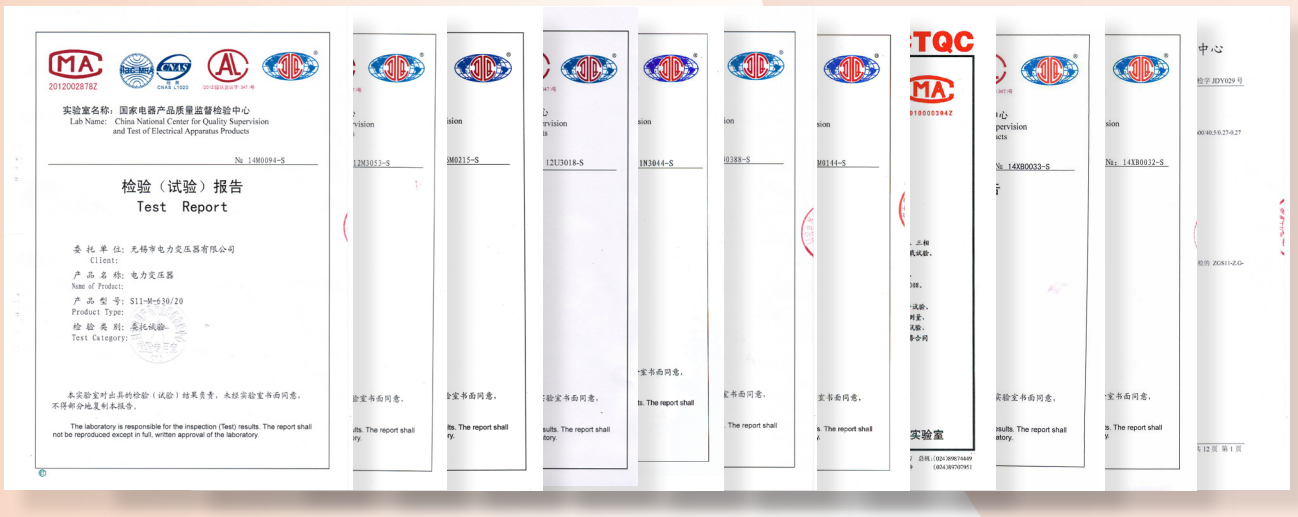
专　利　号：ZL 2011 2 0542431.2

专利申请日：2011 年 12 月 22 日

专 利 权 人：无锡市电力变压器有限公司

授权公告日：2012 年 09 月 26 日

局长


检验（试验）报告

Test Report

实验室名称：国家电器产品质量监督检验中心

Lab Name: China National Center for Quality Supervision and Test of Electrical Apparatus Products

No 14M0094-S

委 托 单 位：无锡市电力变压器有限公司

Client:

产 品 名 称：电力变压器

Name of Product:

产 品 型 号：S11-M-630/20

Product Type:

检 验 类 别：委托试验

Test Category:

本实验室对出具的检验（试验）结果负责，未经实验室书面同意，不得部分地复制本报告。

The laboratory is responsible for the inspection (Test) results. The report shall not be reproduced except in full, written approval of the laboratory.

Contents

Introduction to SOJO Electric Co., Ltd.

Founded in December 2002, Beijing SOJO Electric Co., Ltd. is a joint-stock high-tech enterprise, whose registered capital is 276 million RMB. Currently there are more than 700 employees. The headquarter is located at Silicon Valley of China—Zhongguancun Shangdi Information Industry Zone, Beijing. SOJO is mainly

engaged in the research, production, sales and export of power distribution equipment and automation equipment in the field of 35kV (or lower) power transmission and distribution networks.

In April, 2015, SOJO was officially listed in Shenzhen Stock Exchange (SZSE) (Stock Code: 300444; Stock name: SOJO Electric).

Through more than 12 years, SOJO constantly grows in strength; its products are applied in over 97% of provinces and municipalities of China, wining wide applause from users. In 2009 and 2010, 2-year continuous, SOJO has been named as “Top 12 Best Innovated SMEs in Z-Park” and 3-year continuous named as “Forbes China Best SMEs”. SOJO is the first batch of domestic companies which independently research and produce compact switchgear, has nearly hundred products including switching station, ring main unit , sectionalising cabinet, overhead switchgear, medium and low voltage switchboard, intelligent switchgear, power distribution remote monitoring system, fault detection equipment, cable accessories and etc. The products such as switching station, ring main unit, cable distribution cabinet, secondary substation, pole mounted switch and etc. are intensively and stably used in the State Grid, China Southern Power Grid and their sub-companies of province levels or municipal levels, power plant, wind power industry, railway and aviation industry, petroleum and chemical industry, mining industry and other industries.

Since the establishment of SOJO Electric, it commits itself to research and develop green, clean energy and environmentally friendly products. In 2007, SOJO became the first Chinese company introducing solid Insulated metal enclosed switchgear, an exclusive patent possessed product, which broke the monopoly market status of SF_6 switchgear to realize the clean energy and environment protection of power distribution switches. The product has gained a series of international patents and four domestic patents, has been listed in the National Key New Product, Beijing Independent Innovation Product Category and “Beijing Torch Project” Key Promoting New Product Category, taking leading place of international and domestic markets.

The factory is located at Huairou Yanqi Economic Development Area. The land area of factory is 53360 sqm, the building area is 30800 sqm. SOJO’s factories have advanced production equipments and testing equipments, such as Helium leak detector, salt spray chamber, current generator and etc. There are more than 100 technical engineers and relevant technical staffs, which form a young team with strength and potential providing high quality services in the power distribution industry.

SOJO’s second phase factory had put into operation on Nov.11th, 2013 After it came into production, SOJO has the largest solid insulated switchgear manufacture base in China and the newly increased production value will be over 1 billion RMB.

In the future 3 to 5 years, SOJO will keep its steps in the production of power transmission and distribution equipments and control systems, focused on the market segment of switchgear which will be the direction of business development. Moreover, the high value-added products will take over 70% of SOJO’s revenue. SOJO will try its best to become top 1 brand in domestic switchgear industry, so that to realize the SOJO’s scenario “to be the first class equipment supplier in power transmission and distribution industry, lead the progress of domestic equipment industry, be responsible to the society and contribute to the people”.

SOJO will keep the pace with the time, steadily step into the future!

▲ SOJO factory of the SF_6 Gas Insulated Switchgear
Fisrt batch of self-developed SF6 Switchgear in China

▲ SOJO factory of the Solid Insulated Switchgear
SOJO first launched solid insulated switchgear into the market, this product is international invention, domestic initiative design and environmentally friendly.

▲ 57 Express Automated Production Line
5: the max assembly error is less than 0.5mm.
7: One solid insulated switchgear is produced

▲ Automatic metal sheet processing production line
China’s first full set of intelligent sheet metal processing production line, sheet metal bending, cutting, perforation are all realized by the robots, fully fits the production accuracy requirements of solid insulated switchgear.

Introduction to Wuxi Power Transformer Co., Ltd

Wuxi Power Transformer Co., Ltd. is located in the beautiful Luoshe town of Huishan District, Wuxi City. Beijing-Shanghai high-speed railway and Shanghai-Nanjing high-speed railway pass through this area, and the Shanghai-Nanjing Express Way, 312 State Road, Beijing-Hangzhou Grand Canal intersected here. The company is on the east of Wuxi International Airport, to the north of the port of Zhangjiagang and Jiangyin port, and to the south of Taihu Lake. It has beautiful scenery, good location and convenient transportation and communication.

Founded in 1967, the company was formerly known as Wuxi Power Transformer Factory, and being restructured as Wuxi Suyuan Transformer Co., Ltd., in the year of 2005, its name was changed to Wuxi Power Transformer Co., Ltd. The company shares were acquired by SOJO Electric Co., Ltd in May 2016, becoming a subsidiary company of SOJO Electric. The company is the specialized transformer professional manufacturers of low-loss power transformers, the registered trademark is “Hua Zhu”.

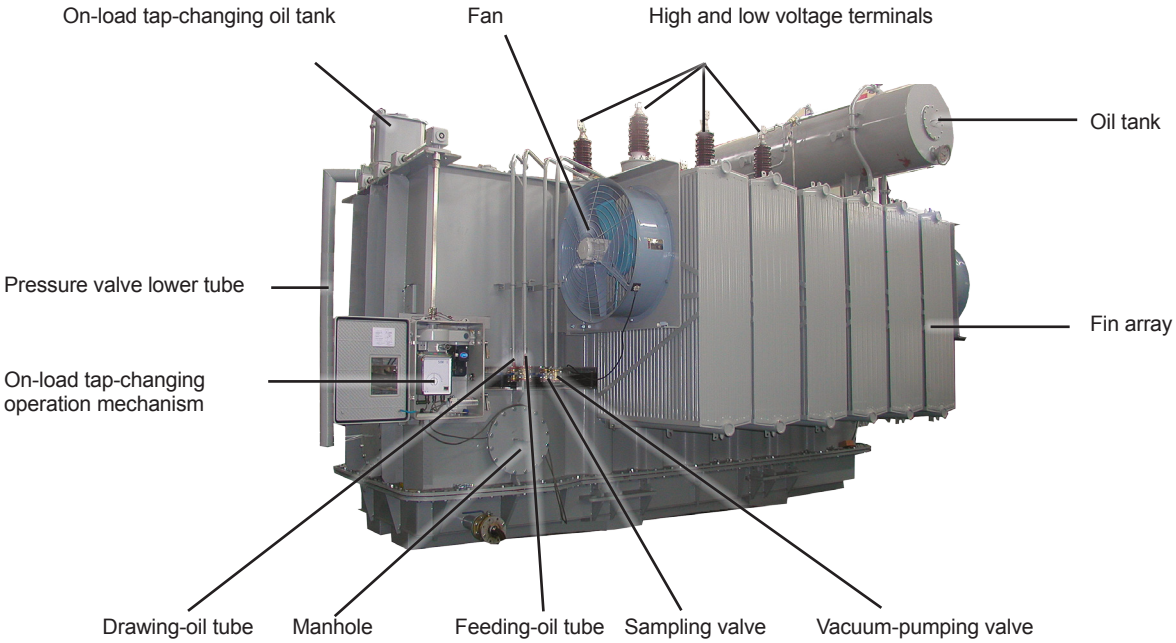
The company covers 76000 m^2 area, the building area is 38500 m^2, and the total assets are 220 million RMB. It has six major production workshops including core manufacturing, coil manufacturing, insulation part manufacturing, machinery processing, steel sheet pre-treatment, painting, transformer assembly, and a high-voltage laboratory. Departments focus on product development and technology, equipment management and quality supervision were established and play important roles. The annual production capacity is 10 million kVA.

▲ The office building of Wuxi Power Transformer Co., Ltd.

Oil Immersed Power Transformer

Introduction

The oil immersed power transformer is composed of core, coil, voltage regulating switch, oil tank and other components, and the dielectric medium is dielectric oil. The oil immersed power transformer is used for regulating voltage and AC power transmission. The advantages include small dimension, reasonable price, strong weather resistance and so on. It is applicable to power systems, industrial and mining enterprises, transportation, post and telecommunications sector, research institutes, etc. A variety of transformers under 110kV are included in the product line: the stacked iron core structure series, the rolled iron core structure series, amorphous alloy series, etc. Smart and diverse structures and nice appearance make this product to meet the needs of different users.



Model Explanation

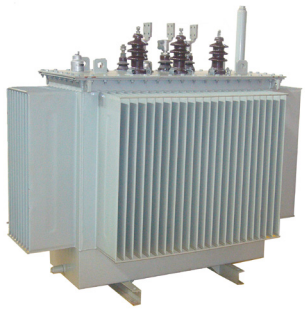
SFSZ 11 - M - 6300 / 110 □

- Special environment code
- Rated voltage (kV)
- Rated capacity(kVA)
- Special purpose or special structure code:
  M - sealed; T - capacity adjustable;R - common roll core structure;
  RL - three-dimensional roll core structure
- Loss level code: 11/13 (of which '13' represents lower loss)
- Product model code:
  1st S - three phases, F - air cooling, 2nd S - three-winding;
  Z - on-load voltage regulation, H - amorphous alloy core material.

Normal Service Condition

Ambient air temperature
Maximum temperature: +40℃
Minimum temperature: -45℃
Average temperature of the warmest month: +30℃
The hottest annual average temperature: +20℃
Altitude: ≤ 1000m
Contamination class: III;
Seismic intensity: VIII
Power supply voltage waveform: approximately sinusoidal;

Note: If the above conditions are exceeded, please specify when ordering, for special consideration.



S13-M-630 Hermetically sealed distribution transformer

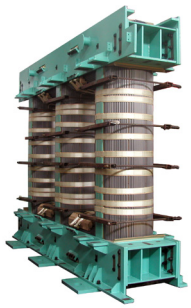
Product Standards

GB1094.1	«Power transformers Part 1: General»
GB1094.2	«Power transformers Part 2: Temperature rise»
GB1094.3	«Power transformers Part 3: Insulation levels, dielectric tests and external clearances in air»
GB1094.5	«Power transformers Part 5: Ability to withstand short circuit»
GB1094.10	«Power transformers Part 10: Determination of sound levels»
GB/T6451	«Specification and technical requirements for oil-immersed power transformers»
GB/T15164	«Loading guide for oil-immersed power transformers»
GB311.1	«Insulation co-ordination-Part 1: Definitions, principles and rules»
GB1208	«Current transformers»
GB/T7595	«Quality of transformer oils in service»
GB/T10230	«Tap changer»
GB/T17468	«The guide for choice power transformers»
GB2536	«Fluids for electrictechnical applications - Unused mineral insulating oils for transformers and switchgear»
GB/T13499	«Power transformers - Application guide»
JB/T10088	«Sound level for 6kV～500kV power transformers»
GB50150	«Standard for hand-over test of electric equipment electric equipment installation engineering»
GB191	«Packaging - Pictorial marking for handling of goods»
GB5582	«External insulation pollution of high-voltage electric power equipments»
GB/T7449	«Guide to the lightning impulse and switching impulse testing of power transformers and reactors»
GB/T4109	«Insulated bushings for alternating voltages above 1000 V»
GB/T5273	«Terminals for transformers, high-voltage apparatus and bushings»

Product Features

Core

High-quality grain-oriented cold-rolled silicon steel sheet are employed, and the whole oblique non-porous banding structure are used here. The core has a multi-level ladder shape, with three joints or five joints, which is of low no-load loss and low noise. Rolled cores are direct rolled by certain special equipments, which gives the advantages including no seam, no corner weight, reluctance reduction, low no-load loss. Amorphous alloy is an advanced core material, which leads to an average reduction of 72% no-load loss and a reduction of 50% no-load current.

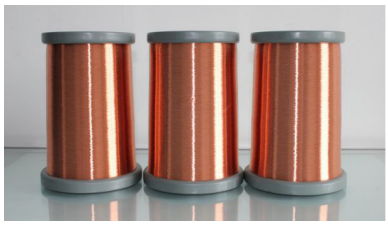


Core

Coil

The high-quality QQ acetal enameled round copper wire and oxygen-free copper rod are used to form the coil. The coil type includes cylinder type, continuous type, new type spiral type, split type, etc. It has sufficient electrical strength, mechanical strength and cooling capacity.

In order to increase the capacity of anti-short-circuit of the transformer, self-adhesive transposition wire is used in the 35kV and above windings. The wire is made of self-adhesive acetal enameled flat wire, and after winding into a coil, it is heated so that the flat wire could be bonded between each other to form a rigid coil, which can withstand greater bending stress, thereby enhancing the capacity of anti-short-circuit of the transformer. The most important feature of the self-adhesive transposition wire is that it can reduce the loss of the transformer, and as a result of multi-stranded conductor with transposition, the eddy current loss and circulation loss are greatly reduced, it can also reduce the temperature rise of the partial hot spots of winding, thus the winding temperature distribution is more uniform.



QQ polyvinylacetal enamelled round copper wire

Oil tank

The oil tank is made of high quality steel plate, and the shape includes elliptical shape, rectangular shape, etc. The type of the radiator includes: corrugated sheet type radiator, expansion type radiator and corrugated type tank. The sealing performance test is conducted on oil tanks. The inside and outside surfaces are pickling and phosphate treated, and then spray priming paint for three times and surface paint for one time, which give its corrosion resistance.

Self-adhesive transposed conductor(CTC)

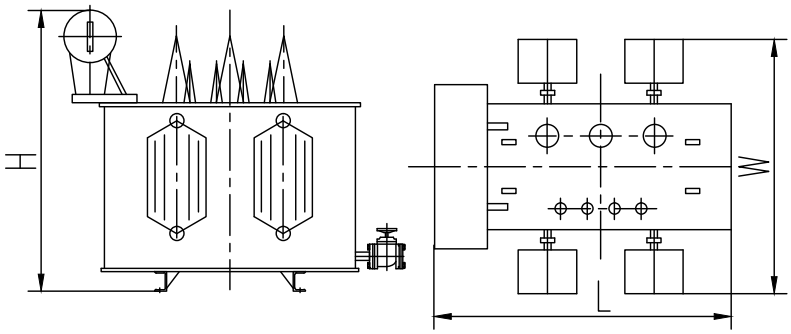
SH15-1000/10 Distribution transformer with amorphous alloy core

S13-M.RL-630 Hermetically sealed distribution transformer

Product Parameter

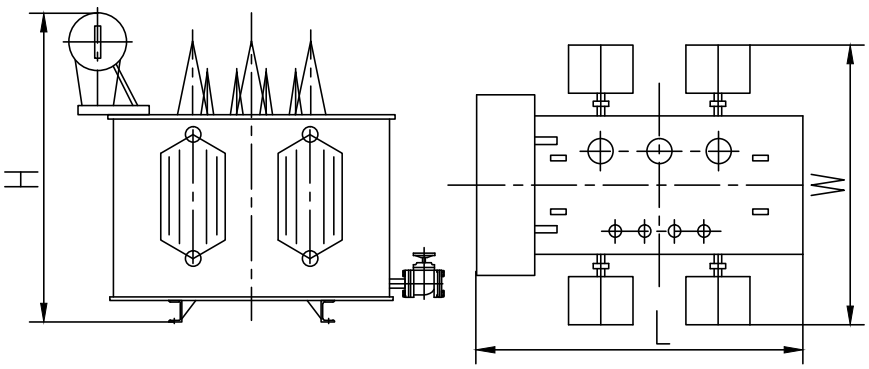
For 10kV Series:

S11 10kV Three Phase Oil Immersed Natural Air Cooling Double Winding Off Circuit Tap Changing Distribution Transformer



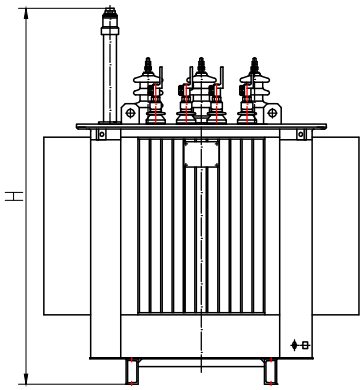
Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S11-30/10	30	H.V. 6,6.3,10,10.5 ±2×2.5% ±5% L.V. 0.4	Dyn11 Yyn0	4	0.35	720*480*850	100	630/600
S11-50/10	50				0.4	750*500*900	130	910/870
S11-63/10	63				0.5	800*600*950	150	1090/1040
S11-80/10	80				0.55	1000*720*980	180	1310/1250
S11-100/10	100				0.6	1050*750*1000	200	1580/1500
S11-125/10	125				0.7	1100*760*1050	240	1890/1800
S11-160/10	160				0.75	1120*770*1070	280	2310/2200
S11-200/10	200				0.8	1150*800*1100	340	2730/2600
S11-250/10	250				1.0	1300*950*1100	400	3200/3050
S11-315/10	315				1.2	1400*1000*1100	480	3830/3650
S11-400/10	400				1.4	1400*1000*1200	570	4520/4300
S11-500/10	500				2.0	1700*1200*1400	680	5410/5150
S11-630/10	630			4.5	2.5	1800*1300*1500	810	6200
S11-800/10	800				2.8	2150*1950*2000	980	7500
S11-1000/10	1000				3.2	2200*2000*2050	1150	10300
S11-1250/10	1250				3.7	2300*2100*2100	1360	12000
S11-1600/10	1600				4.5	2400*2200*2200	1640	14500
S11-2000/10	2000			5	5.5	2500*2400*2300	1940	18300
S11-2500/10	2500				6.4	2700*2600*2500	2290	21200

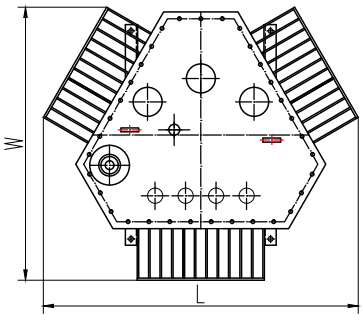
S13 10kV Three Phase Oil Immersed Natural Air Cooling Double Winding Off Circuit Tap Changing Distribution Transformer



Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S13-30/10	30	H.V. 6,6.3,10,10.5 ±2×2.5% ±5% L.V. 0.4	Dyn11 Yyn0	4	0.35	720*480*850	80	630/600
S13-50/10	50				0.4	750*500*900	100	910/870
S13-63/10	63				0.5	800*600*950	110	1090/1040
S13-80/10	80				0.55	1000*720*980	130	1310/1250
S13-100/10	100				0.6	1050*750*1000	150	1580/1500
S13-125/10	125				0.7	1100*760*1050	170	1890/1800
S13-160/10	160				0.75	1120*770*1070	200	2310/2200
S13-200/10	200				0.8	1150*800*1100	240	2730/2600
S13-250/10	250				1.0	1300*950*1100	290	3200/3050
S13-315/10	315				1.2	1400*1000*1100	340	3830/3650
S13-400/10	400				1.4	1400*1000*1200	410	4520/4300
S13-500/10	500				2.0	1700*1200*1400	480	5410/5150
S13-630/10	630			4.5	2.5	1800*1300*1500	570	6200
S13-800/10	800				2.8	2150*1950*2000	700	7500
S13-1000/10	1000				3.2	2200*2000*2050	830	10300
S13-1250/10	1250				3.7	2300*2100*2100	970	12000
S13-1600/10	1600				4.5	2400*2200*2200	1170	14500
S13-2000/10	2000			5	5.5	2500*2400*2300	1390	18300
S13-2500/10	2500				6.4	2700*2600*2500	1650	21200

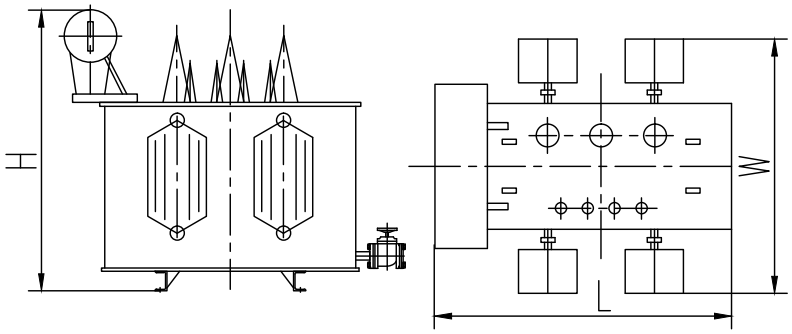
S13-M.RL 10kV Three Phase Oil Immersed Wound Core Natural Air Cooling Double Winding Off Circuit Tap Changing Distribution Transformer





Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S13-M.RL-30/10	30	H.V. 6,6.3,10,10.5 ±2×2.5% ±5% L.V. 0.4	Dyn11 Yyn0	4	0.35	0.8*0.7*0.8	80	630/600
S13-M.RL -50/10	50				0.45	1*0.85*0.95	100	910/870
S13-M.RL -63/10	63				0.5	1.1*0.8*1.2	110	1090/1040
S13-M.RL -80/10	80				0.58	1.1*0.8*1.35	130	1310/1250
S13-M.RL -100/10	100				0.65	1.1*0.8*1.35	150	1580/1500
S13-M.RL -125/10	125				0.7	1.1*0.85*1.4	170	1890/1800
S13-M.RL -160/10	160				0.8	1.1*0.95*1.42	200	2310/2200
S13-M.RL -200/10	200				0.95	1.15*1*1.5	240	2730/2600
S13-M.RL -250/10	250				1.1	1.2*1.1*1.5	290	3200/3050
S13-M.RL -315/10	315				1.3	1.3*1.12*1.5	340	3830/3650
S13-M.RL -400/10	400				1.45	1.35*1.2*1.55	410	4520/4300
S13-M.RL -500/10	500				1.9	1.5*1.3*1.6	480	5410/5150
S13-M.RL -630/10	630			4.5	2.1	1.5*1.3*1.7	570	6200
S13-M.RL -800/10	800				2.5	1.55*1.35*1.75	700	7500
S13-M.RL -1000/10	1000				3	1.75*1.5*1.75	830	10300
S13-M.RL -1250/10	1250				3.5	1.8*1.5*1.9	970	12000
S13-M.RL -1600/10	1600				4.5	1.9*1.7*2	1170	14500

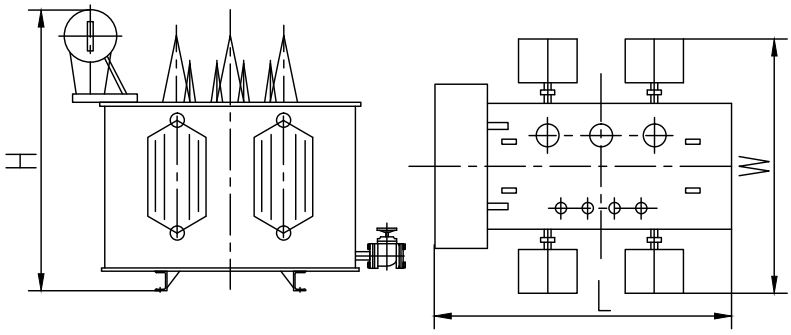
SH15 10kV Three Phase Oil Immersed Natural Air Cooling Double Winding Off Circuit Tap Changing Distribution Transformer With Amorphous Alloy Core



Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
SH15-30/10	30	H.V. 6,6.3,10,10.5 ±2×2.5% ±5% L.V. 0.4	Dyn11 Yyn0	4	0.4	1000*550*700	33	630/600
SH15-50/10	50				0.6	1100*600*700	43	910/870
SH15-63/10	63				0.65	1100*650*900	50	1090/1040
SH15-80/10	80				0.7	1150*650*900	60	1310/1250
SH15-100/10	100				0.65	1200*700*900	75	1580/1500
SH15-125/10	125				0.83	1250*950*900	85	1890/1800
SH15-160/10	160				0.9	1300*1100*900	100	2310/2200
SH15-200/10	200				1.0	1400*1000*900	120	2730/2600
SH15-250/10	250				1.4	1600*1100*950	140	3200/3050
SH15-315/10	315				1.6	1700*1100*970	170	3830/3650
SH15-400/10	400				1.7	1750*1100*1000	200	4520/4300
SH15-500/10	500				2.3	1800*1100*1100	240	5410/5150
SH15-630/10	630			4.5	2.6	1900*1100*1100	320	6200
SH15-800/10	800				2.9	2000*1500*1200	380	7500
SH15-1000/10	1000				3.5	2100*1600*1350	450	10300
SH15-1250/10	1250				4.5	2200*1700*1350	530	12000
SH15-1600/10	1600				6	2300*1900*1400	630	14500
SH15-2000/10	2000				7	2400*2000*1700	750	18300
SH15-2500/10	2500				9	2550*2500*1700	900	21200

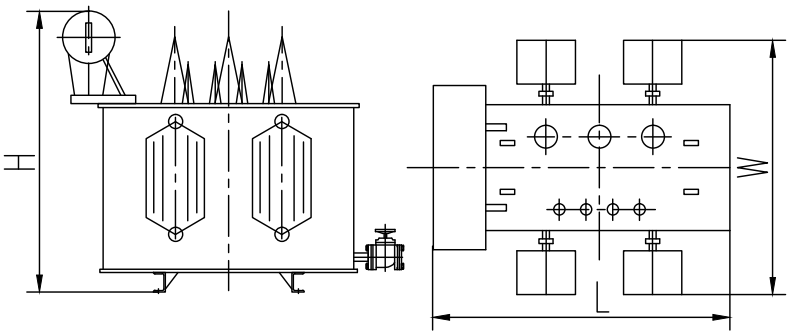
For 20kV Series:

S11 20kV Three Phase Oil Immersed Natural Air Cooling Double Winding Off Circuit Tap Changing Distribution Transformer



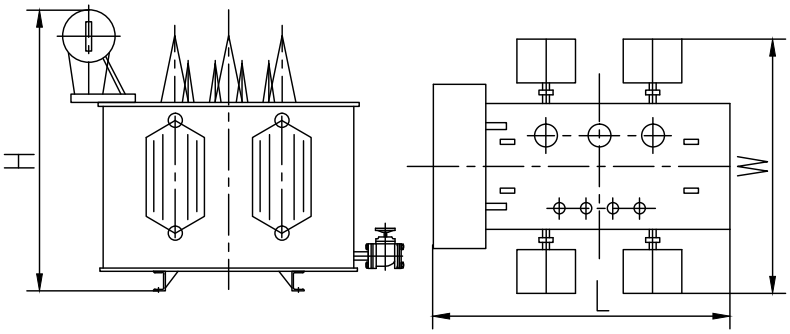
Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S11-30/20	30	H.V. 20 ±2×2.5% ±5% L.V. 0.4	Dyn11 Yyn0	4	0.9	1200*950*1400	100	690/660
S11-50/20	50				1.0	1200*950*1500	130	1010/960
S11-63/20	63				1.1	1200*950*1500	150	1200/1150
S11-80/20	80				1.2	1200*950*1600	180	1440/1370
S11-100/20	100				1.4	1300*1000*1750	200	1730/1650
S11-125/20	125				1.6	1400*1100*1800	240	2080/1980
S11-160/20	160				1.7	1450*1200*1850	290	2540/2420
S11-200/20	200				1.8	1500*1300*1900	340	3000/2860
S11-250/20	250				2.0	1600*1500*2000	400	3520/3350
S11-315/20	315				2.2	1800*1600*2100	480	4210/4010
S11-400/20	400				2.4	1900*1700*2200	570	4970/4730
S11-500/20	500				2.7	2000*1800*2300	680	5940/5660
S11-630/20	630			4.5	3.0	2150*2000*2350	810	6820
S11-800/20	800				3.4	2250*2050*2400	980	8250
S11-1000/20	1000				4.0	2400*2200*2450	1150	11330
S11-1250/20	1250				4.5	2500*2300*2500	1380	13200
S11-1600/20	1600				5.0	2600*2400*2600	1660	15950
S11-2000/20	2000				5.6	2700*2450*2700	1950	19140
S11-2500/20	2500				7.1	2850*2650*2800	2340	22220

S13 20kV Three Phase Oil Immersed Natural Air Cooling Double Winding Off Circuit Tap Changing Distribution Transformer



Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S13-30/20	30	H.V. 20 ±2×2.5% ±5% L.V. 0.4	Dyn11 Yyn0	4	0.9	1200*950*1400	80	690/660
S13-50/20	50				1.0	1200*950*1500	100	1010/960
S13-63/20	63				1.1	1200*950*1500	110	1200/1150
S13-80/20	80				1.2	1200*950*1600	130	1440/1370
S13-100/20	100				1.4	1300*1000*1750	150	1730/1650
S13-125/20	125				1.6	1400*1100*1800	170	2080/1980
S13-160/20	160				1.7	1450*1200*1850	200	2540/2420
S13-200/20	200				1.8	1500*1300*1900	240	3000/2860
S13-250/20	250				2.0	1600*1500*2000	290	3520/3350
S13-315/20	315				2.2	1800*1600*2100	340	4210/4010
S13-400/20	400				2.4	1900*1700*2200	410	4970/4730
S13-500/20	500				2.7	2000*1800*2300	480	5940/5660
S13-630/20	630			4.5	3.0	2150*2000*2350	570	6820
S13-800/20	800				3.4	2250*2050*2400	700	8250
S13-1000/20	1000				4.0	2400*2200*2450	830	11330
S13-1250/20	1250				4.5	2500*2300*2500	970	13200
S13-1600/20	1600				5.0	2600*2400*2600	1170	15950
S13-2000/20	2000				5.6	2700*2450*2700	1390	19140
S13-2500/20	2500				7.1	2850*2650*2800	1650	22220

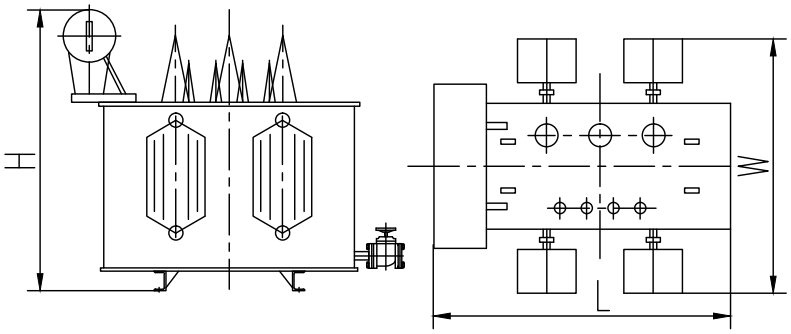
SH15 20kV Three Phase Oil Immersed Natural Air Cooling Double Winding Off Circuit Tap Changing Distribution Transformer With Amorphous Alloy Core



Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
SH15-30/20	30	H.V. 20 ±2×2.5% ±5% L.V. 0.4	Dyn11 Yyn0	5.5	0.7	1100*1100*650	40	690/660
SH15-50/20	50				0.8	1200*1100*650	55	1010/960
SH15-63/20	63				0.95	1300*1250*650	65	1200/1150
SH15-80/20	80				1	1400*1300*700	75	1440/1370
SH15-100/20	100				1.25	1450*1300*850	90	1730/1650
SH15-125/20	125				1.3	1450*1300*950	100	2080/1980
SH15-160/20	160				1.4	1450*1300*1000	120	2540/2420
SH15-200/20	200				1.5	1500*1300*1100	145	3000/2860
SH15-250/20	250				1.7	1600*1350*1150	165	3520/3350
SH15-315/20	315				1.9	1700*1350*1200	200	4210/4010
SH15-400/20	400				2.2	1800*1400*1200	240	4970/4730
SH15-500/20	500				2.5	1900*1500*1200	290	5940/5660
SH15-630/20	630			6	3	2000*1600*1300	370	6820
SH15-800/20	800				3.5	2100*1700*1400	450	8250
SH15-1000/20	1000				4	2200*1800*1500	530	11330
SH15-1250/20	1250				5	2300*1900*1600	620	13200
SH15-1600/20	1600				6	2600*2000*1700	750	15950
SH15-2000/20	2000				7.5	2900*2200*1900	900	19140
SH15-2500/20	2500				9.5	3000*2500*2000	1080	22220

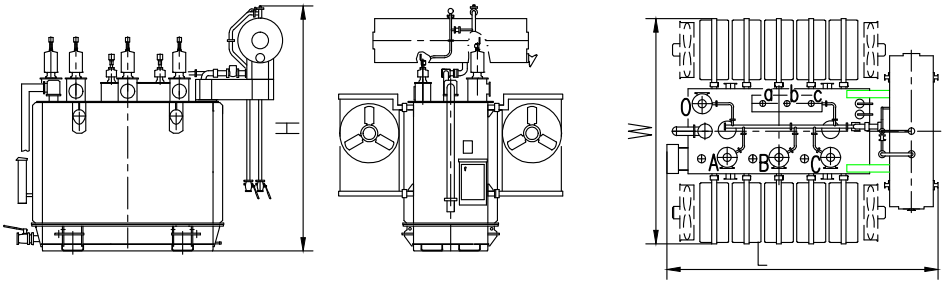
For 35kV Series:

S11 35kV Three Phase Oil Immersed Natural Air Cooling Double Winding Off Circuit Tap Changing Distribution Transformer



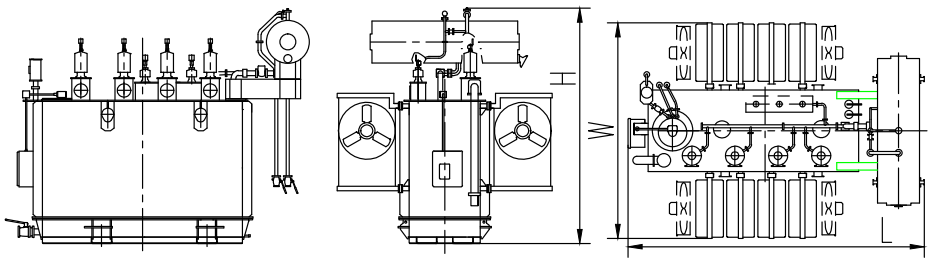
Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S11-50/35	50	H.V. 35,38.5 ±2×2.5% ±5% L.V. 0.4	Dyn11 Yyn0	6.5	1.28	1400*1000*1800	0.16	1.2/1.14
S11-100/35	100				1.67	1450*1050*1900	0.23	2.01/1.91
S11-125/35	125				1.9	1500*1100*1900	0.27	2.37/2.26
S11-160/35	160				2.2	1550*1150*1950	0.28	2.82/2.68
S11-200/35	200				2.4	1600*1200*2000	0.34	3.32/3.16
S11-250/35	250				2.5	1700*1600*2100	0.4	3.95/3.76
S11-315/35	315				2.6	1900*1700*2200	0.48	4.75/4.53
S11-400/35	400				2.8	2000*1800*2300	0.58	5.74/5.47
S11-500/35	500				3.0	2100*1900*2400	0.68	6.91/6.58
S11-630/35	630				3.3	2310*2200*2500	0.83	7.86
S11-800/35	800				3.8	2500*2250*2550	0.98	9.4
S11-1000/35	1000				4.2	2550*2300*2600	1.15	11.5
S11-1250/35	1250				4.8	2680*2400*2700	1.4	13.9
S11-1600/35	1600				5.7	2700*2450*2750	1.69	16.6
S11-2000/35	2000				6.2	2800*2500*2900	1.99	19.7
S11-2500/35	2500				7.8	2850*2650*2950	2.36	23.2

S(F)11 35kV Three Phase Oil Immersed Natural (Forced) Air Cooling Double Winding Off Circuit Tap Changing Power Transformer



Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Shipping Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S(F)11-6300/35	6300	H.V. 35~38.5 ±2×2.5% L.V. 3.15,3.3,6.3, 6.6,10.5	YNd11	8	15	11	3600*3200*3100	5.24	35
S(F)11-8000/35	8000				18	14	3800*3300*3300	7.2	38.4
S(F)11-10000/35	10000				20	15	3900*3300*3500	8.7	45.3
S(F)11-12500/35	12500				24	19	4000*3400*3700	10	53.8
S(F)11-16000/35	16000				28	21	4200*3600*3800	12.1	65.8
S(F)11-20000/35	20000				33	26	4500*3800*4000	14.4	79.5
S(F)11-25000/35	25000			10	37	29	4700*4000*4100	17	94
S(F)11-31500/35	31500				44	36	5000*4200*4300	20.2	112

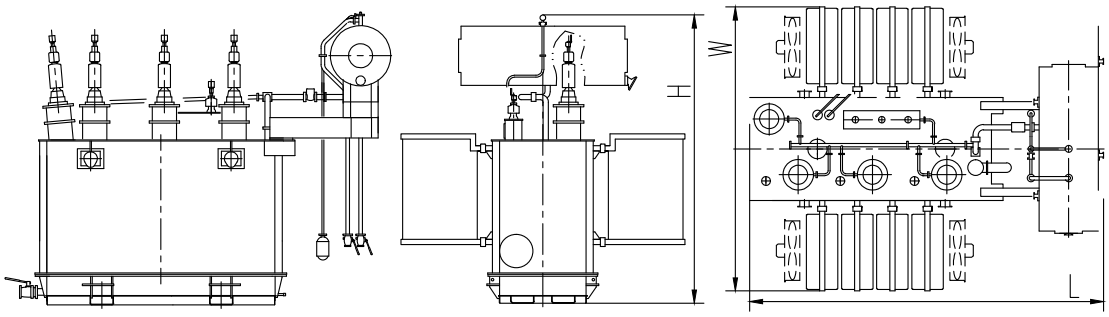
35 kV Three Phase Oil Immersed Natural (Forced) Air Cooling Double Winding On Load Tap Changing Power Transformer



Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Shipping Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S(F)Z11-6300/35	6300	H.V. 35~38.5 ±2×2.5% L.V. 3.15,3.3,6.3, 6.6,10.5	YNd11	8	18	13	4000*3300*3100	5.63	36.7
S(F)Z11-8000/35	8000				21	16	4200*3400*3300	7.87	40.6
S(F)Z11-10000/35	10000				23	17	4300*3500*3500	9.28	48
S(F)Z11-12500/35	12500				28	21	4800*3500*3700	10.71	56.8
S(F)Z11-16000/35	16000				33	24	5000*3800*3800	13.1	70.3
S(F)Z11-20000/35	20000				38	29	5300*4000*4000	15.5	82.7
S(F)Z11-25000/35	25000			10	43	33	5500*4200*4100	18.3	97.8
S(F)Z11-31500/35	31500				50	39	5800*4400*4300	21.8	116

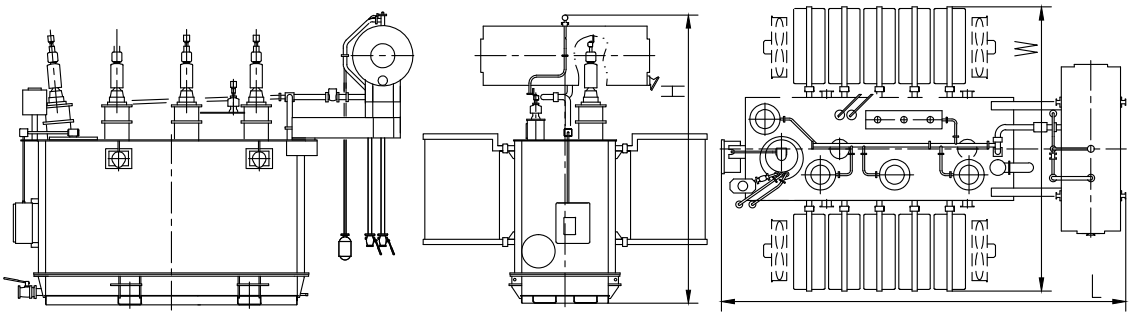
For 66kV Series:

S(F)11 66kV Three Phase Oil Immersed Natural (Forced) Air Cooling Double Winding Off Circuit Tap Changing Power Transformer



Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Shipping Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S(F)11-6300/66	6300	H.V. 63,66,69 ±2×2.5% L.V. 6.3,6.6,10.5	YNd11	9	20	15	4800*3900*4000	7.3	34.2
S(F)11-8000/66	8000				22	17	4900*4100*4200	8.9	40.5
S(F)11-10000/66	10000				25	19	5000*4300*4400	10.5	47.8
S(F)11-12500/66	12500				28	21	5100*4400*4500	12.4	56.8
S(F)11-16000/66	16000				30	25	5200*4600*4600	15	69.8
S(F)11-20000/66	20000				34	28	5300*4700*4800	17.6	84.6
S(F)11-25000/66	25000				41	32	5500*4700*5000	20.8	100
S(F)11-31500/66	31500				46	36	5600*4800*5200	24.6	120
S(F)11-40000/66	40000				57	44	5800*5000*5300	29.4	141
S(F)11-50000/66	50000				67	51	6000*5300*5500	35.2	167
S(F)11-63000/66	63000				73	55	6200*5600*5700	41.6	198

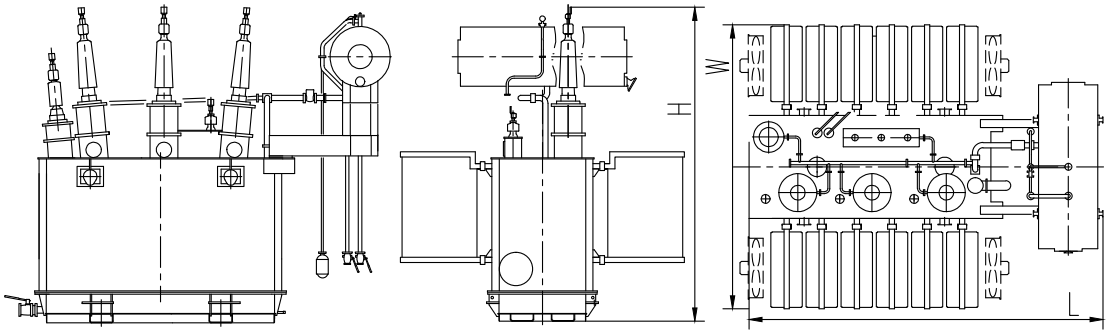
S(F)Z11 66kV Three Phase Oil Immersed Natural (Forced) Air Cooling Double Winding On Load Tap Changing Power Transformer



Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Shipping Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S(F)Z11-6300/66	6300	H.V. 63,66,69 ±2×2.5% L.V. 6.3,6.6,10.5	YNd11	9~11	22	18	5600*3800*4000	8	34.2
S(F)Z11-8000/66	8000				24	20	5700*4000*4200	9.6	40.5
S(F)Z11-10000/66	10000				27	22	5800*4200*4400	11.3	47.8
S(F)Z11-12500/66	12500				30	24	5900*4300*4500	13.4	56.8
S(F)Z11-16000/66	16000				33	29	6000*4400*4600	16.1	69.8
S(F)Z11-20000/66	20000				36	32	6100*4500*4800	19.2	84.6
S(F)Z11-25000/66	25000				43	36	6500*4500*5000	22.7	100
S(F)Z11-31500/66	31500				49	41	6600*4600*5200	26.9	120
S(F)Z11-40000/66	40000				59	49	6800*4800*5300	32.2	141
S(F)Z11-50000/66	50000			10~12	69	57	7000*5000*5500	38	167
S(F)Z11-63000/66	63000				75	62	7400*5300*5700	44.9	198

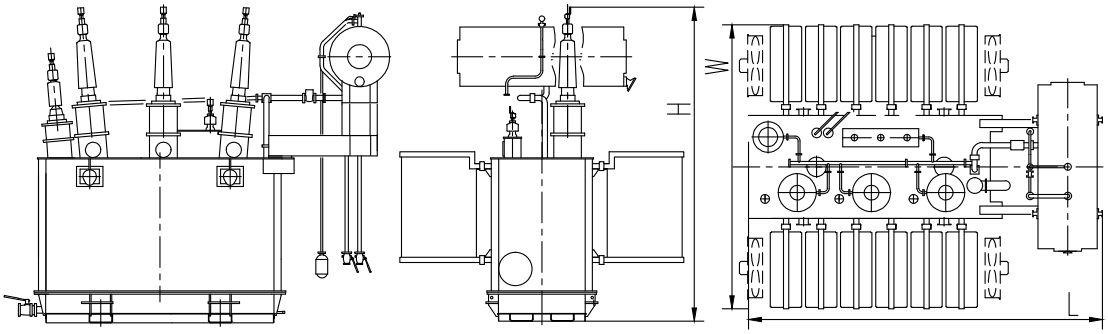
For 110kV Series:

S(F)11 110 kV Three Phase Oil Immersed Natural (Forced) Air Cooling Double Winding (L.V.: 10kV) Off Circuit Tap Changing Power Transformer



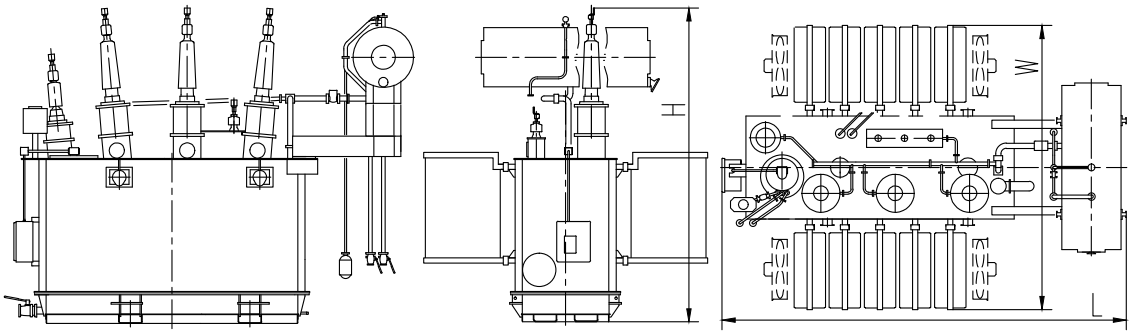
Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Shipping Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S(F)11-6300/110	6300	H.V. 110,115,121 ±2×2.5% L.V. 6.3,6.6,10.5	YNd11	10.5	21	16	5000*3900*4200	7.4	35
S(F)11-8000/110	8000				23	18	5100*4100*4400	8.9	42
S(F)11-10000/110	10000				26	20	5200*4300*4600	10.5	50
S(F)11-12500/110	12500				29	22	5300*4400*4700	12.4	59
S(F)11-16000/110	16000				31	26	5400*4600*4800	15	73
S(F)11-20000/110	20000				35	29	5500*4700*5000	17.6	88
S(F)11-25000/110	25000				42	33	5700*4700*5200	20.8	104
S(F)11-31500/110	31500				47	37	5800*4800*5400	24.6	123
S(F)11-40000/110	40000				58	45	6000*5000*5500	29.4	148
S(F)11-50000/110	50000				68	52	6200*5300*5700	35.2	175
S(F)11-63000/110	63000				74	56	6400*5600*5900	41.6	208
S(F) 11-75000/110	75000	H.V. 110,115,121 ±2×2.5% L.V. 13.8,15.75,18,21		12~14	83	62	6500*5900*6200	47.2	236
S(F) 11–90000/110	90000				94	70	6800*6300*6400	54.4	272
S(F) 11–120000/110	120000				118	90	7000*6700*6600	67.8	337

S(F)11 110 kV Three Phase Oil Immersed Natural (Forced) Air Cooling Double Winding (L.V.: 35kV) Off Circuit Tap Changing Power Transformer



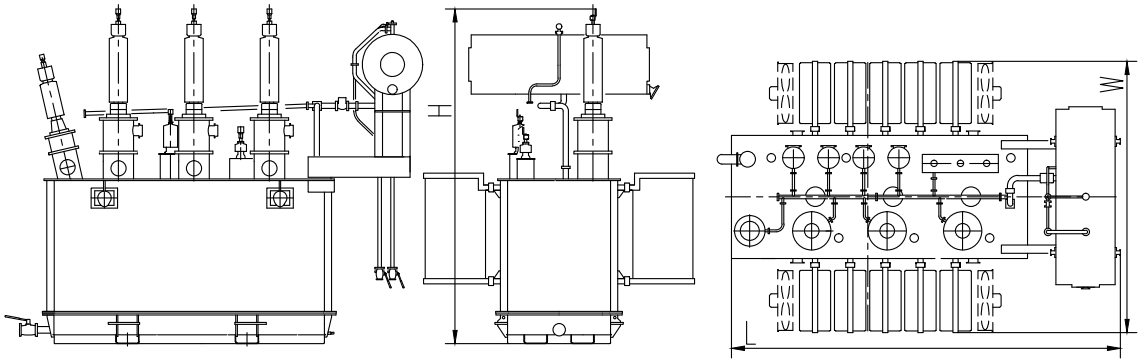
Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Shipping Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S(F)11-6300/110	6300	H.V. 110,115,121 ±2×2.5% L.V. 36,37,38.5	YNd11	10.5	21	16	5000*3900*4200	8	37
S(F)11-8000/110	8000				23	18	5100*4100*4400	9.6	44
S(F)11-10000/110	10000				26	20	5200*4300*4600	11.2	52
S(F)11-12500/110	12500				29	22	5300*4400*4700	13.1	62
S(F)11-16000/110	16000				31	26	5400*4600*4800	15.6	76
S(F)11-20000/110	20000				35	29	5500*4700*5000	18.5	94
S(F)11-25000/110	25000				42	33	5700*4700*5200	21.9	110
S(F)11-31500/110	31500				47	37	5800*4800*5400	25.9	133
S(F)11-40000/110	40000				58	45	6000*5000*5500	30.8	155
S(F)11-50000/110	50000				68	52	6200*5300*5700	36.9	193
S(F)11-63000/110	63000				74	56	6400*5600*5900	43.6	232

S(F)Z11 110 kV Three Phase Oil Immersed Natural (Forced) Air Cooling Double Winding On Load Tap Changing Power Transformer



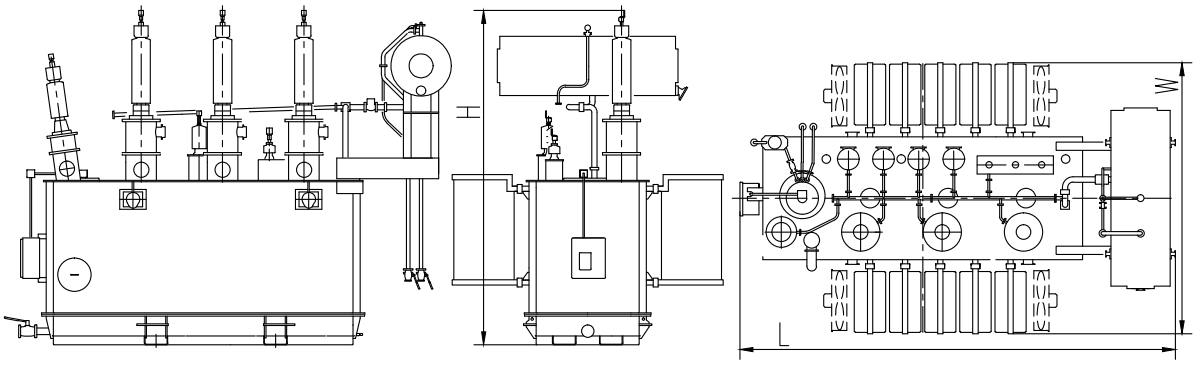
Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Shipping Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S(F)Z11-6300/110	6300	H.V. 110 ±8×1.25% L.V. 6.3,6.6, 10.5,21	YNd11	10.5	24	19	5800*3900*4200	8	35
S(F)Z11-8000/110	8000				26	21	5900*4100*4400	9.6	42
S(F)Z11-10000/110	10000				29	23	6000*4300*4600	11.3	50
S(F)Z11-12500/110	12500				32	25	6100*4400*4700	13.4	59
S(F)Z11-16000/110	16000				36	30	6200*4600*4800	16.1	73
S(F)Z11-20000/110	20000				39	33	6300*4700*5000	19.2	88
S(F)Z11-25000/110	25000				46	37	6700*4700*5200	22.7	104
S(F)Z11-31500/110	31500				52	42	6800*4800*5400	27	123
S(F)Z11-40000/110	40000			12~18	63	50	7000*5000*5500	32.3	156
S(F)Z11-50000/110	50000				74	58	7200*5300*5700	38.2	194
S(F)Z11-63000/110	63000				81	63	7600*5600*5900	45.4	232

S(F)S11 110kV Three Phase Oil Immersed Natural (Forced) Air Cooling Three Winding Off Circuit Tap Changing Power Transformer



Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Shipping Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S(F)S11-6300/110	6300	H.V. 110,115,121 ±2×2.5% M.V. 36,37,38.5 L.V. 6.3,6.6,1 0.5,21	YNyn0 d11	H.V.-L.V. 18~19 H.V.-M.V. 10.5 M.V.-L.V. 6.5	27	23	5300*4100*4200	8.9	44
S(F)S11-8000/110	8000				31	25	5400*4300*4400	10.6	53
S(F)S11-10000/110	10000				33	28	5500*4500*4600	12.6	62
S(F)S11-12500/110	12500				39	33	5600*4600*4700	14.7	74
S(F)S11-16000/110	16000				45	37	5700*4800*4800	17.9	90
S(F)S11-20000/110	20000				51	41	5800*4900*5000	21.1	106
S(F)S11-25000/110	25000				56	46	6000*4900*5200	24.6	126
S(F)S11-31500/110	31500				62	52	6100*5000*5400	29.4	149
S(F)S11-40000/110	40000				73	60	6300*5200*5500	34.8	179
S(F)S11-50000/110	50000				80	65	6500*5500*5700	41.6	213
S(F)S11-63000/110	63000				97	80	6700*5800*5900	49.2	256

S(F)ZS11 110kV Three Phase Oil Immersed Natural (Forced) Air Cooling Three Winding On Load Tap Changing Power Transformer



Type	Rated Power(kVA	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Shipping Weight(t)	Reference Dimension(mm)	No Load Loss (W)	Load Loss (W)
S(F)SZ11-6300/110	6300	H.V. 110±8×1.25% M.V. 36,37,38.5 L.V. 6.3,6.6, 10.5,21	YNyn0 d11	H.V.-L.V. 18~19 H.V.-M.V. 10.5 M.V.-L.V. 6.5	30	26	6100*4100*4200	9.6	44
S(F)SZ11-8000/110	8000				34	28	6200*4300*4400	11.5	53
S(F)SZ11-10000/110	10000				36	31	6300*4600*4600	13.6	62
S(F)SZ11-12500/110	12500				42	36	6400*4600*4700	16.1	74
S(F)SZ11-16000/110	16000				49	41	6500*4800*4800	19.3	90
S(F)SZ11-20000/110	20000				55	45	6600*4900*5000	22.8	106
S(F)SZ11-25000/110	25000				60	50	7000*4900*5200	27	126
S(F)SZ11-31500/110	31500				67	57	7100*5000*5400	32.1	149
S(F)SZ11-40000/110	40000				78	65	7300*5200*5500	38.5	179
S(F)SZ11-50000/110	50000				86	71	7500*5500*5700	45.5	213
S(F)SZ11-63000/110	63000				104	87	7900*5800*5900	54.1	256

Main Components

Pressure Relief Valve

In large and medium-sized transformer, the pressure relief valve is employed instead of the explosion-proof tube, and it is usually installed on the top of the transformer tank. The pressure relief valve protects the transformer oil from external air during normal operation of the transformer. In the event transformer short-circuit fault, arc and spark will occur on the transformer winding, leading the transformer oil to produce a large number of gas in a short time, then the pressure inside the tank increases. When the pressure reaches a greater level, the pressure relief valve opens in 2 ms to release the pressure; the pressure relief valve closes automatically when the pressure value returns to a steady state. In this way, the transformer oil tank is avoided of deformation and explosion due to excessive pressures.

Gas Relay

A display which could identify the action signals of the relay baffle is added into this relay, without changing the inner and outside structure of the relay. When the baffle action causes the gas action, this display could distinguish the action, so as to distinguish from the relay action caused by the relay secondary circuit fault. A reset device is employed to restore the original signal position as the fault is eliminated.

The upper case and the inspection window plate are made of die-casting aluminum alloy, and the sealing groove structure is adopted to ensure no leakage and nice appearance.

The terminal box adopts double sealed enclosure to overcome the leakage problem of unsealed terminal box.

Pointer Type Oil Level Gauge

Pointer type oil level gauge is used in the wholly sealed, large and medium-sized transformer oil conservator. When the oil level inside the oil conservator changes, the float ball on the oil level gauge rod could drift up and down, through the mechanism inside the oil gauge, the pointer could be driven to be rotated, thus the oil conservator oil level could be indicated on the dial plate. Meanwhile, the signal transmission circuit converts the oil level signal to 4 ~ 20mA industry standard current signal, and sent it to the control room. Thus the remote oil level monitoring and alarming can be achieved.

Transformer Temperature Controller

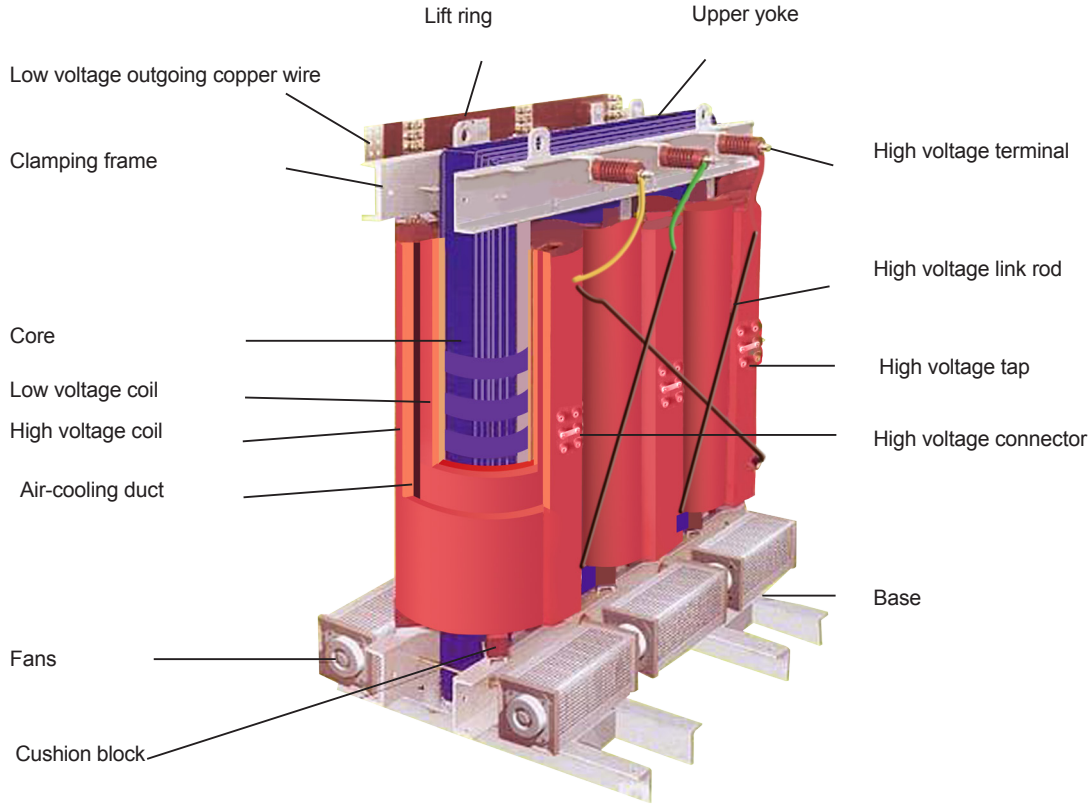
The controller is used to measure the oil temperature of the large and medium-sized oil-immersed transformer. Its functions are starting and shutdown the cooling system, signal alarming and over-temperature tripping. In order to transmit the real-time temperature signal to the control room, the temperature controller can be equipped with digital thermometer, which synchronously displays the transformer oil temperature, and the digital thermometer can be connected with the computer.

Dry Type Transformer

Introduction

SC(B) 10/11 epoxy cast dry-type transformer is a dry-type transformer with strong mechanical strength, electrical strength, good heat-resistance performance. It is made of F class epoxy resin mixture with filler, and after vacuum film degassing, the mixture is cast onto the glass fiber formed net frame to enhance the mechanical strength, electrical strength, and heat-resistance performance.

. This type of transformer is an excellent product for urban power network transformation, which is very suitable for urban power grid, high-rise buildings, business centers, theaters, hospitals, hotels, tunnels, subway, underground power stations, laboratories, stations, terminals, airports, combined substation, explosion prevention and explosion proof in urban power network, high-rise buildings, business center, theaters, hospitals, hotels, tunnels, subways, underground power stations, laboratories, railway stations, docks, airports and combined substations, etc, which need high level of retardant, anti-explosion, anti-moisture performances.



Model Explanation

SC B 10 – xxxx / xx

- xx — High voltage level (kV)
- xxxx — Rated capacity(kVA)
- 10 — Performance level code
- B — Low voltage foil coil
- SC — Three phase epoxy resin cast

Normal Service Conditions

Ambient air temperature:
- Maximum temperature: +40℃
- Minimum temperature: -25℃ (Outdoor dry type transformer)
- Minimum temperature: -5℃ (Indoor dry type power transformer)
- Highest average temperature of month: +30℃
- Highest average temperature of year month: +30℃

Altitude: ≤1000m
Outdoor wind speed: ≤35m/s
Relative air humidity: ≤90%(+25℃)

SCB10-630/10 Epoxy Resin
Cast Dry-type Power Transformer

Product Standards

GB1094.1	«Power transformers Part 1: General»
GB1094.11	«Power transformers Part 11: Dry-type transformer»
GB/T10228	«Specification and technical requirements for dry-type power transformers»
GB311.1	«Insulation co-ordination-Part 1: Definitions, principles and rules»
GB/T311.2	«Insulation co-ordination-Part 2:Application guide for insulation co-ordination for high voltage transmission and distribution equipment»
GB/T311.6	«Voltage measurement by means of standard air gaps»
GB50150	«Standard for hand-over test of electric equipment electric equipment installation engineering»
GB/T5273	«Terminals for transformers, high-voltage apparatus and bushings»
GB/T17211	«Loading guide for dry-type power transformers»
GB/T191	«Packaging - Pictorial marking for handling of goods»
GB/T2900.15	«Electrotechnical terminology--Transformer, instrument transformer, voltage regulator and reactor»
JB/T10088	«Sound level for 6kV~500kV power transformers»

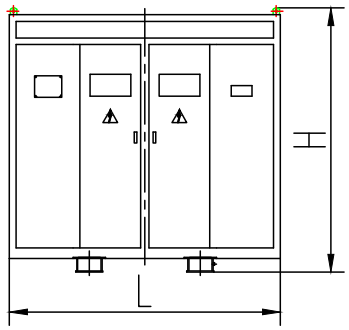
Product Features

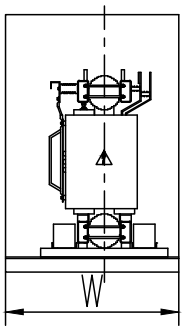
- Strong anti-short-circuit ability, low loss, low no-load current, strong impact resistance capability, low partial discharge, low noise, good heat sinking capacity.
- Performance parameters are better than GB and IEC standards.
- Safe, flame retardant, fireproof, non-polluting, it can be installed directly in the load site.
- Maintenance-free, easy to install, low operating costs.
- High reliability, high mechanical strength.
- Good seismic capability.
- Good anti-moisture & anti-corrosion features.
- Good overload capability, in the absence of air-cooling, it can withstand 120% of the load long-term service.
- Suitable to: substations located in densely populated, narrow urban places.

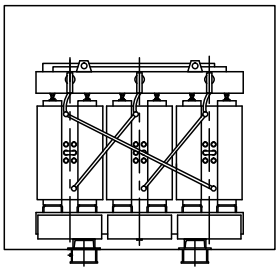
Product Parameters

10kV Series

SC(B)10 Three Phase Epoxy Resin Cast Dry Type Power Transformer

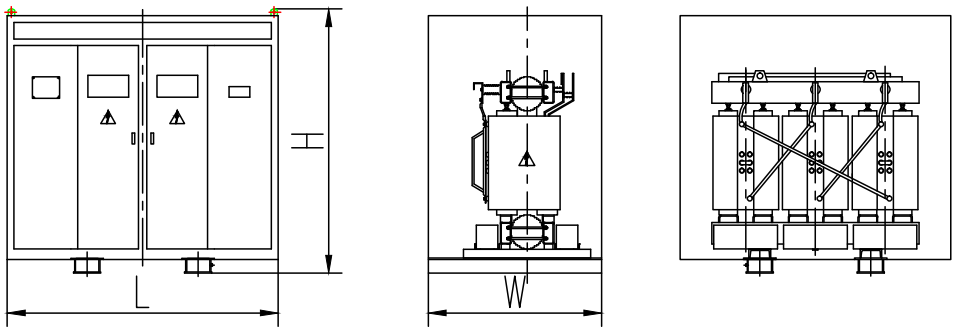






Type	Rated Power(kVA)	Rated Voltage(kV)		Vector Group	No Load Loss (W)	Load Loss (W)	Transformer Weight(kg)	Reference Dimension(mm)	Enclosure Dimension(mm	Total Weight(kg)	Impedance Voltage(%)
		HV	LV								
SC10-30	30	6,6.3, 10, 10.5,11	0.4	Dyn11 Yyn0	190	710	250	680*450*640	1080*850*1020	400	4
SC10-50	50				270	1000	300	700*450*640	1100*850*1040	450	
SC10-80	80				370	1380	430	860*450*760	1260*850*1150	600	
SC10-100	100				400	1570	630	920*780*900	1500*1300*2200	830	
SC10-125	125				470	1850	700	920*780*950	1500*1300*2200	900	
SC10-160	160				540	2130	800	920*780*1000	1500*1300*2200	1000	
SC10-200	200				620	2530	950	1100*780*960	1800*1300*2200	1150	
SC10-250	250				720	2760	1100	1100*650*1150	1800*1300*2200	1300	
SC10-315	315				880	3470	1300	1100*940*1150	1800*1300*2200	1500	
SC(B)10-400	400				980	3990	1500	1100*940*1200	1800*1300*2200	1800	
SC(B)10-500	500				1160	4880	2000	1350*940*1200	2000*1500*2200	2250	
SC(B)10-630	630				1340	5880	2050	1350*940*1300	2300*1500*2200	2300	
SC(B)10-630	630				1300	5960	2050	1400*940*1130	2300*1500*2200	2300	6
SC(B)10-800	800				1520	6960	2350	1450*940*1140	2300*1500*2200	2600	
SC(B)10-1000	1000				1770	8130	2750	1500*940*1250	2300*1500*2200	3000	
SC(B)10-1250	1250				2090	9690	3100	1500*940*1300	2300*1800*2200	3300	
SC(B)10-1600	1600				2450	11730	3600	1550*940*1410	2300*1500*2200	4000	
SC(B)10-2000	2000				3050	14450	4600	1650*1190*1780	2400*1600*2200	5000	
SC(B)10-2500	2500				3600	17170	5500	1720*1190*1800	2500*1600*2200	6000	

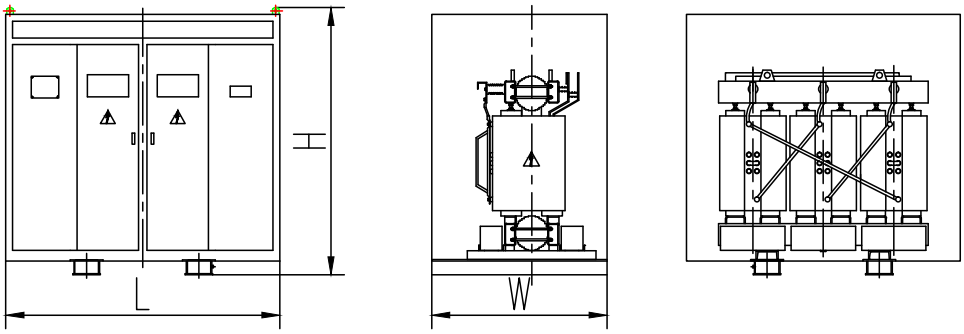
SC(B)11 Three Phase Epoxy Resin Cast Dry Type Power Transformer



Type	Rated Power(kVA)	Rated Voltage(kV)		Vector Group	No Load Loss (W)	Load Loss (W)	Transformer Weight(kg)	Reference Dimension(mm)	Enclosure Dimension(mm	Total Weight(kg)	Impedance Voltage(%)
		HV	LV								
SC11-30	30	6,6.3, 10, 10.5,11	0.4	Dyn11 Yyn0	168	710	250	680*450*640	1080*850*1020	400	4
SC11-50	50				238	1000	300	700*450*640	1100*850*1040	450	
SC11-80	80				322	1380	430	860*450*760	1260*850*1150	600	
SC11-100	100				350	1570	630	920*780*900	1500*1300*2200	830	
SC11-125	125				413	1850	700	920*780*950	1500*1300*2200	900	
SC11-160	160				476	2130	800	920*780*1000	1500*1300*2200	1000	
SC11-200	200				546	2530	950	1100*780*960	1800*1300*2200	1150	
SC11-250	250				630	2760	1100	1100*650*1150	1800*1300*2200	1300	
SC11-315	315				770	3470	1300	1100*940*1150	1800*1300*2200	1500	
SC(B)11-400	400				854	3990	1500	1100*940*1200	1800*1300*2200	1800	
SC(B)11-500	500				1015	4880	2000	1350*940*1200	2000*1500*2200	2250	
SC(B)11-630	630				1176	5880	2050	1350*940*1300	2300*1500*2200	2300	
SC(B)11-630	630				1134	5960	2050	1400*940*1130	2300*1500*2200	2300	6
SC(B)11-800	800				1330	6960	2350	1450*940*1140	2300*1500*2200	2600	
SC(B)11-1000	1000				1547	8130	2750	1500*940*1250	2300*1500*2200	3000	
SC(B)11-1250	1250				1827	9690	3100	1500*940*1300	2300*1800*2200	3300	
SC(B)11-1600	1600				2142	11730	3600	1550*940*1410	2300*1500*2200	4000	
SC(B)11-2000	2000				2905	14450	4600	1650*1190*1780	2400*1600*2200	5000	
SC(B)11-2500	2500				3500	17170	5500	1720*1190*1800	2500*1600*2200	6000	

20kV Series

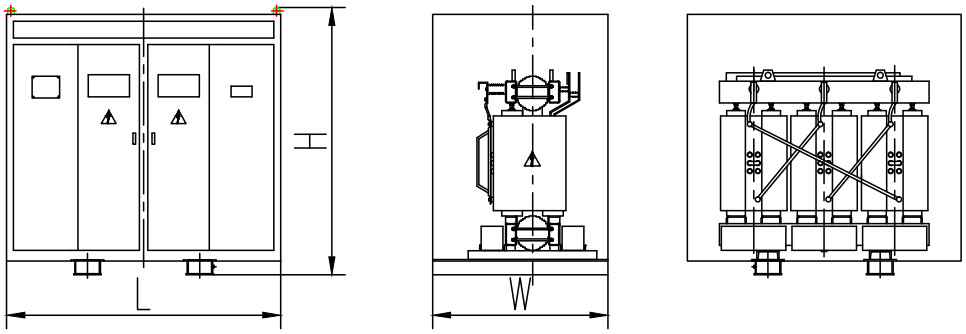
SC(B)10 Three Phase Epoxy Resin Cast Dry Type Power Transformer



Type	Rated Power(kVA)	Rated Voltage(kV)		Vector Group	No Load Loss (W)	Load Loss (W)	Transformer Weight(kg)	Reference Dimension(mm)	Enclosure Dimension(mm	Total Weight(kg)	Impedance Voltage(%)
		HV	LV								
SC10-50	50	20,22 24 ±2× 2.5%	0.4	Dyn11 Yyn0	340	1230	600	1050*700*950	1600*1300*2200	800	6
SC10-100	100				540	1990	900	1100*700*1200	1600*1300*2200	1100	
SC10-160	160				670	2470	1100	1200*800*1200	1600*1300*2200	1300	
SC10-200	200				730	2940	1200	1250*800*1250	1800*1350*2200	1400	
SC10-250	250				840	3420	1500	1300*800*1280	1800*1350*2200	1700	
SC10-315	315				970	4080	1700	1400*940*1280	1800*1350*2200	1950	
SC(B)10-400	400				1150	4840	1800	1450*940*1300	2000*1400*2200	2050	
SC(B)10-500	500				1350	5790	2200	1450*940*1340	2000*1400*2200	2450	
SC(B)10-630	630				1530	6840	2250	1500*940*1480	2000*1400*2200	2500	
SC(B)10-800	800				1750	8260	2500	1540*940*1510	2150*1450*2200	2750	
SC(B)10-1000	1000				2070	9780	2940	1580*940*1730	2150*1450*2200	3200	
SC(B)10-1250	1250				2380	11500	3290	1580*940*1760	2300*1500*2200	3800	
SC(B)10-1600	1600				2790	13800	4240	1860*1190*1800	2400*1550*2200	4550	
SC(B)10-2000	2000				3240	16300	5200	1910*1190*1900	2600*1600*2200	5500	
SC(B)10-2500	2500				3870	19300	6020	2000*1190*2000	2600*1600*2200	6400	

Продукции напряжением 35 кВ

SC(B)10 Three Phase Epoxy Resin Cast Dry Type Power Transformer



Type	Rated Power(kVA)	Rated Voltage(kV)		Vector Group	No Load Loss (W)	Load Loss (W)	Transformer Weight(kg)	Reference Dimension(mm)	Enclosure Dimension(mm	Total Weight(kg)	Impedance Voltage(%)
		HV	LV								
SC10-50	50	35,36 37 38.5 ±2× 2.5%	0.4	Dyn11 Yyn0	450	1420	610	1100*750*1350	2000*1550*2200	860	6
SC(B)10-100	100				630	2090	920	1300*750*1450	2000*1550*2200	1170	
SC(B)10-160	160				790	2810	1200	1450*750*1450	2150*1550*2200	1500	
SC(B)10-200	200				880	3320	1350	1450*750*1500	2150*1550*2200	1550	
SC(B)10-250	250				990	3800	1500	1450*940*1550	2150*1550*2200	1800	
SC(B)10-315	315				1170	4510	1750	1500*940*1600	2300*1600*2200	1950	
SC(B)10-400	400				1370	5410	1900	1540*940*1700	2300*1600*2200	2200	
SC(B)10-500	500				1620	6650	2250	1560*940*1700	2300*1700*2400	2550	
SC(B)10-630	630				1860	7690	2550	1650*940*1750	2500*1700*2400	2850	
SC(B)10-800	800				2160	9120	3250	1750*940*1950	2700*1800*2500	3600	
SC(B)10-1000	1000				2430	10400	3600	1800*940*1950	2700*1800*2500	3950	
SC(B)10-1250	1250				2830	12700	4150	1850*940*2000	2800*1900*2700	4550	
SC(B)10-1600	1600				3240	15400	4800	1900*1240*2200	2800*1900*2700	5200	
SC(B)10-2000	2000				3820	18200	5900	2100*1240*2200	2800*1900*2700	6300	
SC(B)10-2500	2500				4455	21800	6800	2200*1240*2300	3000*1950*2800	7250	

Main Components

Enclosure

The protective enclosure includes indoor type and outdoor type.

While used in the indoor environment, considering situation of the heat dissipation and maintenance, if there is enough space to install, generally we do not install the enclosure, if user really needs, the enclosure can be installed. There are several observation holes on the enclosure, which could be sprayed into multiple colors that user need.

The protection levels of the enclosure are IP20 and IP23. IP23 level is to prevent water droplets that are within 60° of the vertical angle, thus it is suitable for outdoor use.

The materials of the enclosure includes: ordinary sprayed steel plates, stainless steel plates, aluminum composite plates

Temperature control device

Transformers are equipped with temperature overheat protection devices, overheat protection devices mainly complete the temperature detection and control via the PT thermistor that embedded in the low-voltage coil, and the digital signals are transferred through the RS232 / 485 communication interface. The temperature control device provides the following functions:

Winding temperature values display of three-phase during the operation of the transformer.

Display the highest winding temperature value of one phase.

Over-temperature alarm and over-temperature tripping.

Sound and light alarm, and then fan starts

Air cooling device

There are natural air cooling (AN) and forced air cooling (AF) for the dry-type transformer.

During the natural air cooling (AN), the transformer can continuously output 100% of the rated capacity in normal conditions of use.

During the forced air cooling (AF), in normal conditions of use, the transformer can achieve increased 50% of the rated capacity, which makes it is applicable to all kinds of emergent overload or intermittent overload services. Due to the large increase in load loss and resistance, the forced air cooling (AF) is not recommended for long time continuous overload services.

ZGS11-H(Z) Pad-mounted Secondary Substation

Introduction

ZGS11-H(Z) Pad-mounted Secondary Substation (hereinafter referred to as American type substation) is a uniformly designed transformer, in which the transformer body, the H.V. load switch, the protection fuse and other components put into a sealed oil tank, and equipped with running inspection instruments such as pressure meter, pressure relief valve, oil level gauge and oil thermometer, etc. It is reliable in power supply, with reasonable structure, fast and easy to install, convenient to operate, small size and costs low price. It is widely used indoor or outdoor in such place as industrial zone, residential quarter, commercial center and high building, etc.

Model Explanation

Z G S 11 - H(Z) - □ / □

- Voltage level (kV)
- Rated capacity(kVA)
- High-voltage wiring model H- Ring type; Z: Terminal type
- Performance level code
- Three phase
- Common cased
- Combined substation

Feature

1. Hermetically sealed & fully insulated structure, no need of insulation distance, it reliably ensures personnel safety.
2. Compact structure, only 1/3 volume of traditional product.
3. It can be used not only in looped network but also in terminal network. Convert conveniently, enhancing the power supply reliability.
4. Low loss. The loss is the same as transformer of the same type. We can provide combined substation with loss level of 9, 10 and 11 series and also substation with amorphous alloy core.
5. The load current of cable joint can up to 200A. It can be used as load switch, and also with feature of disconnector, convenient and easy to operate.
6. Dual-fuse protection takes reliable operations.
7. Suitable for various adverse circumstances such as storm serious contaminated area due to anticorrosive design & special paint treatment case.

Product Parameter

10kV ZGS11-Z(H) Pad-mounted Secondary Substation

Rated Power(kVA)	Rated Voltage (kV)	Vector Group	Impedance Voltage(%)	No Load Loss (W)	Load Loss (W)	Total Weight (kg)	Reference Dimension(mm) L*W*H
30	H.V. 6,6.3,10,10.5 ±2×2.5% ±5% L.V. 0.4	Dyn11 Yyn0	4	100	630/600	1130	1800*1250*2000
50				130	910/870	1180	1800*1250*2000
63				150	1090/1040	1220	1800*1250*2000
80				180	1310/1250	1250	1800*1500*2000
100				200	1580/1500	1290	1800*1500*2000
125				240	1890/1800	1340	1800*1500*2000
160				290	2310/2200	1400	1800*1500*2000
200				330	2730/2600	1540	1800*1550*2000
250				400	3200/3050	1630	1800*1550*2000
315				480	3830/3650	1836	1800*1650*2000
400				570	4520/4300	2165	1800*1650*2000
500			4.5	680	5410/5150	2366	1800*1750*2000
630				810	6200	2800	1800*1750*2000
800				980	7500	3270	1800*1800*2000
1000				1150	10300	3592	1800*1800*2000

20kV ZGS11-Z(H) Pad-mounted Secondary Substation

Rated Power(kVA)	Rated Voltage (kV)	Vector Group	Impedance Voltage(%)	No Load Loss (W)	Load Loss (W)	Total Weight (kg)	Reference Dimension(mm) L*W*H
30	H.V. 20 ±2×2.5% ±5% L.V. 0.4	Dyn11 Yyn0	5.5	90	690/660	1340	1800*1320*2000
50				130	1010/960	1388	1800*1320*2000
63				150	1200/1150	1424	1800*1320*2000
80				180	1440/1370	1454	1800*1550*2000
100				200	1730/1650	1493	1800*1550*2000
125				240	2080/1980	1544	1800*1550*2000
160				290	2540/2420	1602	1800*1550*2000
200				330	3000/2860	1744	1800*1600*2000
250				400	3520/3350	1832	1800*1600*2000
315				480	4210/4010	2038	1800*1700*2000
400				570	4970/4730	2367	1800*1700*2000
500				680	5940/5660	2564	1800*1800*2000
630			6	810	6820	3020	1800*1800*2000
800				980	8250	3472	1800*1850*2000
1000				1150	11330	3798	1800*1850*2000

YBM (YBP) Prefabricated Substation

Introduction

YBM prefabricated substation (also called European type substation) is putting H.V. switch equipment, distribution transformer and L.V. distribution equipment in three different compartments, which electrically connects each other by cable or busbar, and the H.V. & L.V. distribution equipments and transformers are all ordinary approved products. The intelligent prefabricated substation is consisted of H.V. switch equipment (RM6 or SFG, load switch equipped with motor-driven remote automatic control device), transformer, L.V. distribution equipment, L.V. intelligent switch, reactive-load automatic compensation by regular wiring scheme, with function of local or remote operation to remote control, remote measurement, remote counting, remote regulating and etc. It is used for residence community, industrial and mining enterprises, large construction plant, high-rise buildings, airport, quay and temporary installation of public distribution network, looped network and terminal power supply of rated voltage of 24kV and below, three phase current system rated frequency of 50Hz, rated power of 2500kVA and below.

YBM(P) prefabricated substation meets the SD320 “box-type substation technical conditions” and B/T17467 “ H.V. / L.V. prefabricated substation” standards.

Model Explanation

YB M 11 - 12/0.4 - □

- Rated capacity(kVA)
- Rated voltage of L.V. (kV)
- Rated voltage of H.V. (kV)
- Design serial No.
- Structure character Head-shaped arrangement Triangle arrangement
- Prefabricated substation

Normal Service Conditions

Ambient air temperature:

Maximum temperature: +40℃

Minimum temperature: -25℃

Average temperature of the warmest month: +35℃

Altitude: ≤1000m

Outdoor wind speed: ≤35m/s

Relative air humidity: ≤90%(+25℃)

When earthquakes occur, the horizontal acceleration is not greater than 0.4m / s2, the vertical acceleration is not more than 0.2m / $s^{2.}$

Used in places where there encounters fire, explosion hazard, no serious pollution, chemical corrosion and severe vibration places.

Note: If the above conditions are exceeded, please specify when ordering, for special consideration.

Structure Characteristics

This product is consisted of high-voltage power distribution devices, power transformers and low-voltage power distribution devices, and is divided into three functional compartments: high-voltage room, transformer room and low-voltage room, the high voltage room and low voltage room are fully functional. The high-voltage side primary power supply system can be designed to function as ring network power supply system, terminal power supply system, and dual power supply system and other power supply system. And the high- voltage metering components could be installed on the high-voltage side primary power supply system, to meet the high-voltage measurement requirements. Considering the transformer room, S11, S13 and other low-loss oil-immersed transformers and dry-type transformers could be employed. The transformer room is equipped with self-starting forced air-cooling system and lighting system. The low-voltage room can adopt panel-type or cabinet-type structure to compose the power supply plan according to user's requirements, including power distribution, lighting distribution, reactive power compensation, power metering and other functions. And it can be user-friendly in power management and improving the quality of power supply.

The structure of the high voltage room is compact and reasonable, and it has a comprehensive anti-mis-operation interlocking function. According to user requirements, the transformer can be easily accessed by rails through the door on both sides of the transformer room. All rooms have self-lighting devices. All components used in both high voltage room and low voltage room are reliable, easy to operate, so that the product is safe and reliable, easy to operate and maintenance.

The natural air cooling and the forced air cooling are used to keep good ventilation cooling. Both of the transformer room and the low-voltage room has ventilation cooling duct, and the exhaust fan are equipped with temperature control device, which could automatically start and shut down according to setting temperatures to ensure that the transformer is under full load running safety.

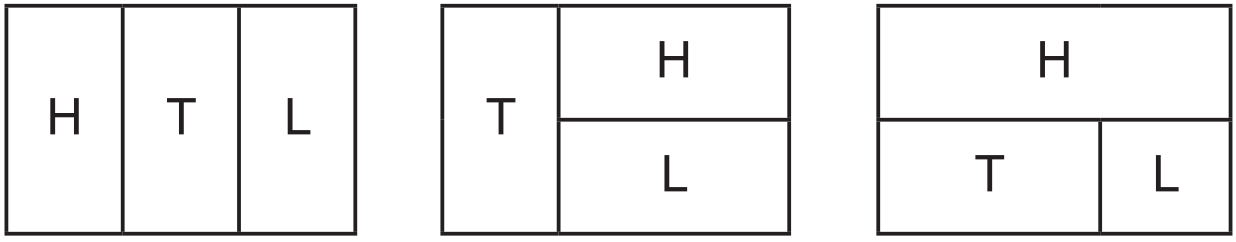
The enclosure is made of specially treated stainless steel sheets or aluminum alloy sheets which have anticorrosion features, and could prevent rain and dirt from it, thus it can be used outdoor for a long-term, it also has waterproof and dustproof performance, long life, and beautiful appearance.

Product Parameters

This product is a kind of combined substation, which could be equipped with all power transformers under 20kV in this product brochure.

Layout Mode

H - High voltage room; T - Transformer room; L - Low voltage room



ZGS11-Z.F Pad-mounted Transformer for Wind Farm

Introduction

ZGS11-Z.F Pad-mounted Transformer for Wind Farm is applied in 35kV terminal power supply system, which could be used as the substation, power distribution equipment, metering, control and protection devices. This product is a complete set of strong integrated products, including high-voltage equipment, transformer, low-voltage equipment, secondary monitoring and control equipment. This combined transformer also includes the light controller, soft startup device, remote controlling device. The secondary control part of the combined transformer is design reasonably; all contacts relating to alarming and tripping are designed to be led outside the transformer side, to ensure the transformer operation safety.

Model Explanation

Z G S 11 - Z. F - □ - □

- Rated Voltage(kV)
- Rated Capacity(kVA)
- Wind Power Generation
- Terminal Type
- Design Serial No.
- Three Phase
- Common Cased
- Combined Transformer

Product Features

The oil tank is equipped with 35kV 11 type oil-immersed step-up transformer, and the oil tank is fully sealed, the radiator is rationally laid, and the high-performance seals, pressure relieve valve, gas relay, oil level gauge, temperature controller are equipped. The advantages are low loss, low noise, low temperature rise, high resistance to short circuit, high overload, no leakage and so on. In addition, the high-voltage load switch and high-voltage fuses are also placed in the oil, the use of transformer oil as an insulating medium, which has a strong electrical performance.

In addition, high-voltage load switch and high-voltage fuses are also placed in the oil tank, the transformer oil is used as the insulating medium, which makes it has a strong electrical feature.

The high-voltage room is equipped with enhanced anti-contamination outlet bushing, at the end there set the fully insulated cable contacts, and the arrester is also equipped to reduce the over-voltage risk. The high-voltage room is also equipped with a sensor. Electromagnetic group and live display are employed to prevent misuse.

Low-voltage room is generally employed the dual-line as the incoming line, and equipped with circuit breaker, disconnector, current transformer, surge arrester and other components, another substation is used in it as a transformer for the entire substation power supply.

The three compartments are structurally independent and electrically interconnected. This not only ensures the safety and convenience of operations, but also ensures the safety and reliability of operations. The transformer box is designed to employ a unique labyrinth sealing type, coupled with high-performance long-life seals, all the incoming and outcoming line and the vents are equipped with anti-dust chamber, which can effectively prevent dust, rain and snow. This product truly achieves full condition, full insulation, fully sealed, maintenance-free, which ensures that it can be used in the harsh environment for 20 years.

Product Parameters

ZGS11-Z.F Pad-mounted Transformer for Wind Farm

Rated Power(kVA)	Rated Voltage (kV)	Vector Group	Impedance Voltage (%)	No Load Loss (W)	Load Loss (W))	Total Weight (t)	Reference Dimension(mm) L*W*H
630	H.V. 36.75,38.5 ±2×2.5% L.V. 0.69-0.69	Dyn11	6.5	810	7820	4	2450*2260*2150
800				980	9350	4.5	2450*2280*2150
900				1070	10450	4.8	2450*2300*2150
1000				1150	11500	5	2520*2340*2150
1250				1370	13850	5.1	2520*2380*2150
1600				1650	16600	6.5	2520*2380*2150

ZGS11-Z.G Pad-mounted Transformer for Solar Project

Introduction

ZGS-ZG Pad-mounted Transformer for Solar Project is designed to meet the growing demands for photovoltaic power supply. This product is designed on the basis of 35kV combined transformer. The transformer, the load switch and the high voltage fuse are installed in the transformer enclosure, and the transformer insulation oil is used as the insulation and cooling medium of the entire product. The product has a small size, a light weight, and it is easy to install.

Model Explanation

Z G S 11 - Z. G / □ - □

- Rated Voltage(kV)
- Rated Capacity(kVA)
- Photovoltaic Power Generation
- Terminal Type
- Performance Level Code
- Three Phase
- Common Cased
- Combined Transformer

Product Features

The transformer body and the oil tank are closely connected with a fixed device. All the high voltage and low voltage line are soft-connected. The connection between tap wire and on-load tap-changer is cold-welded and fastened with bolts. All connections (including connections between coil and backup fuse, plug-in fuse, load switch, etc) are cold welded. The fastening part is equipped with self-locking anti-loose device to keep the transformer withstanding vibrations and bumps during the long-distance transportation. After delivering to the installation site, there is no need to do the conventional hanging core inspection.

The transformer has a whole-sealed structure, and there is no oil conservator.

The enclosure is specially treated to make it has a good anti-corrosion ability, and also gives it good performances in preventing wind erosion and salty fog.

Product Parameters

ZGS11-Z.G Pad-mounted Transformer for Solar Project

Rated Power(kVA)	Rated Voltage (kV)	Vector Group	Impedance Voltage(%)	No Load Loss (W)	Load Loss (W)	Total Weight (t)	Reference Dimension(mm) L*W*H
630	H.V. 36.75,38.5 ±2×2.5% L.V. 0.27-0.27	Dyn11-yn11 Yd11-d11	6.5	810	7820	4	2450*2260*2150
800				980	9350	4.5	2450*2280*2150
900				1070	10450	4.8	2450*2300*2150
1000				1150	11500	5	2520*2340*2150
1250				1370	13850	5.1	2520*2380*2150
1600				1650	16600	6.5	2520*2380*2150

S13-M.ZT On Load Tap Changing Capacity-and-voltage-adjusting Power Distribution Transformer

Introduction

S13-M.ZT on-load tap changing capacity-and-voltage-adjusting distribution transformer is an intelligent, energy-saving new equipment. It can regulate the transformer coil tap connection type and load switch status by using the combined on-load tap changing capacity-and-voltage-adjusting switch according to the user's actual operating voltage level, load capacity, power quality, etc, thus making the transformer to switch in different taps and rated capacities, and so the remote automatic control and three-phase imbalance adjustment and other functions could be realized. Also, by using the fine-grade automatic control to complete reactive power compensation, it can reduce no-load loss, achieve energy-saving operation of the transformer, thus achieving energy saving purpose.

This product is suitable for the power distribution area of AC 50Hz, rated voltage 10/0.4kV, capacity 630kVA and below. It could be mainly used in the larger residential areas, commercial areas, industrial areas and rural power grids which have seasonal or day/night power load fluctuations. Its features are intelligent control, reasonable structure, practical, remarkable energy-saving effect and so on. It has far-reaching significance for the operation safety of power distribution system and improving the quality of power supply.

Model explanation

S 13 - M. Z. T

- T - Capacity-adjusting
- Z - On Load Tap Changing Voltage-adjusting
- M - Sealed Type
- 13 - Loss Level Code
- S - Three Phase

Product Standards

GB1094	«Power transformers»
JB/T10088	«Sound level for 6kV～500kV power transformers»
GB/T6451	«Specification and technical requirements for oil-immersed power transformers»
GB2536	«Fluids for electrictechnical applications - Unused mineral insulating oils for transformers and switchgear»
DL/T596	«Preventive test regulations for electric power equipment»
DL/T572	«Statute for the power transformer operation»
DL/T573	«Guide to the power transformer maintenance»

Normal Service Conditions

Ambient air temperature:
- Maximum temperature: +40℃
- Minimum temperature: -25℃
- Average temperature of the warmest month: +35℃

Relative air humidity:
- Daily average relative air humidity: ≤95%
- Monthly average relative air humidity: ≤90%

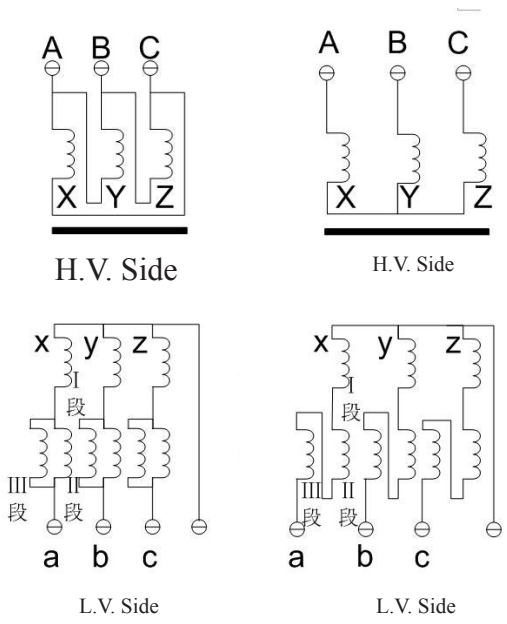
Outdoor wind speed: ≤35m/s

Altitude: ≤2000m

Product Features

The transformer oil tank is equipped with on-load voltage regulator switch, which has the voltage automatically regulating function. The transformer has certain impedance, thus it will produce a voltage drop in power transmission, and will fluctuate depending on user side load changes. The fluctuation of the system voltage and the user or line load instability will cause a large voltage change. In the realization of reactive power on the premise of local balance, when the voltage changes over a fixed value, the tap changer voltage regulator can automatically adjust the voltage level, makes the transformer low voltage side output voltage to be stable in a qualified range, thereby enhancing the supply voltage quality, and extending the endurance of the equipment, and therefore it solved the low quality problem of the peak load time distribution network voltage.

The transformer oil tank is equipped with a tank capacity switch, which has a capacity automatically adjusting function. Transformer three-phase high pressure winding is set to be an "α" shape (D) when it is in the large capacity, and to be a star shape (Y) when it is in the small capacity. Each phase of low-voltage winding is consisted of three section wire turns: Section I has a small number of turns; Section II and Section III has majority number of turns, and Section II and Section III are winded in a parallel connection. During the high-capacity operation, Section II and Section III are parallel-winded and then together serial-winded with Section I; during small-capacity operation Section I , Section II , and Section III are all serial-winded, as shown in the figure below.



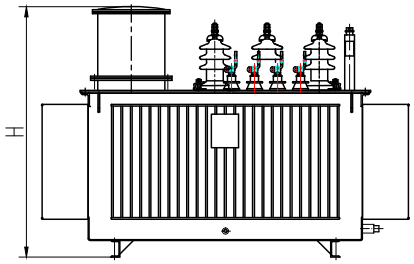
Dyn11 winding type when big-capacity operation

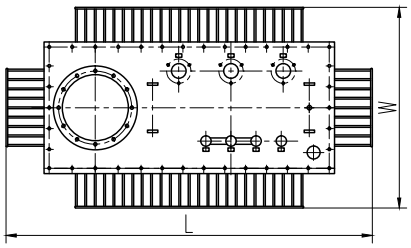
Yyn0 winding type when small-capacity operation

Schematic Diagram of the Capacity-and-voltage-adjusting Power Transformer

Product Parameters

S13-M.ZT On Load Tap Changing Capacity-and-voltage-adjusting Power Transformer





Type	Rated Power(kVA)	Rated Voltage(kV)	Vector Group	Impedance Voltage(%)	Total Weight(t)	Reference Dimension(mm) L*W*H	No Load Loss (W))	Load Loss (W)
S13-M.ZT -160/10	160(50)	H.V. 36.75,38.5 ±2×2.5% L.V. 0.27-0.27	Dyn11-yn11 Yd11-d11	6.5	1.1	1700*1000*1200	200（100）	2310（870）
S13-M.ZT -200/10	200(63)				1.3	1700*1000*1300	240（110）	2730（1040）
S13-M.ZT -250/10	250(80)				1.4	1750*1050*1350	290（130）	3200（1250）
S13-M.ZT -315/10	315(100)				1.6	1800*1050*1400	340（150）	3830（1500）
S13-M.ZT -400/10	400(125)				1.9	1900*1100*1450	410（170）	4520（1800）
S13-M.ZT -500/10	500(160)				2.2	2000*1100*1500	480（200）	5410（2200）
S13-M.ZT -630/10	630(200)				2.7	2100*1200*1500	570（240）	6200（2600）

Exemplary Transformer Project Case

State Key Project

User Name	Voltage Level	Remark
South - to - North Water Transfer Project Jiangsu Water Resources Limited Liability Company	110kV	
Huajin Chemical Group, Ministry of Defense		
Silver State Aviation Metal Composite Materials Co., Ltd.		
Huajin Chemical Group, Ministry of Defense	66kV	
South - to - North Water Transfer Project Jiangsu Water Resources Limited Liability Company	35kV	

Scientific Research Units Project

User Name	Voltage Level	Remark
Institute of High Energy Physics, Chinese Academy of Sciences	10kV	Dry type Transformer
Jiangnan University		Dry type Transformer
FAW Bus Company		Dry type Transformer
Shanghai Aircraft Manufacturing Co., Ltd		Dry type Transformer
Wenzhou Power Supply Bureau Substations in Baishi	110kV	
Inner Mongolia Electric Power (Group) Ordos Company Substations in Fengshuiliang, Kang Bashi eastern suburb, etc		
Inner Mongolia Electric Power (Group) Power Supply Bureau of Inner Substations in Zhao Tan, Bayantala, etc		
Qinghai East Power Supply Bureau Substations in Duoba, Chuankou, etc		High altitude project
Qinghai West Power Supply Bureau Substations in Lenghu, etc		High altitude project

User Name	Voltage Level	Remark
Harbin Electric Power Bureau Technical transformation project	66kV	
Heilongjiang Electric Power Co., Ltd Substations in Huangshan Wangha, etc		
North China Power Grid Co., Ltd Material Supply Corporation	35kV	
Hebei North Power Grid Co., Ltd Substations in Chongli, Guyuan, Zhangbei		
Sichuan Power Grid Co., Ltd Substations in Mianyang, Ziyang, Suining, etc		
Suzhou Power Supply Bureau Singapore Industrial Park	20kV	
Wuxi Power Supply Bureau Reconstruction Project		
Electric Power Company of Jiangsu Province Agreement Storage Project	10kV	Dry type transformers & Oil-immersed transformers
Electric Power Company of Qinghai Province Agreement Storage Project		
Electric Power Company of Hubei Province Agreement Storage Project		Dry type transformers

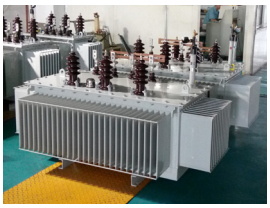
Scientific Research Units Project

User Name	Voltage Level	Remark
Institute of High Energy Physics, Chinese Academy of Sciences	10kV	Dry type Transformer
Jiangnan University		Dry type Transformer
FAW Bus Company		Dry type Transformer
Shanghai Aircraft Manufacturing Co., Ltd		Dry type Transformer

Overseas Project

Country/Area	User Name	Voltage Level	Remark
Vietnam	Vietnam Kam Power Plant, Vietnam Cave Power Plant	220kV	
Sudan	Sudan State Power Corporation		
Indonesia	Indonesia Sonia Raya Power Plant	150kV	
Myanmar	Myanmar Meng Power Plant	132kV	
Pakistan	Pakistan State Power Corporation		
Ethiopia	Ethiopia State Power Corporation		
Taiwan	Taiwan LU ZHAN Industrial Co., Ltd.	110kV	
Taiwan	Taiwan KUN YING Electronic Co., Ltd.		
Taiwan	Taiwan SHENG WANG Motor Co., Ltd.		
Sudan	Sudan State Power Corporation	33kV	
Myanma	Myanmar De River Hydroelectric Projec		
Cambodia	Cambodia State Power Corporation	20kV	
Vietnam	Vietnam Kam Power Plant		






Photovoltaic Power Generation Project

User Name	Voltage Level	Remark
Qinghai Honghai Power Engineering Co., Ltd (Photovoltaic Project)	110kV	High altitude,Step-up transformer
TBEA Xinjiang New Energy Co., Ltd		High altitude,Step-up transformer
Qinghai Energy Development (Group) Co., Ltd. Datong Branch Company		High altitude,Step-up transformer
Xining Ningguang Engineering Consulting Co., Ltd. (Hainan 110kV 3# booster station		High altitude,Step-up transformer
Golmud Haidian Industry Limited Liability Company (Huaneng Golmud photovoltaic project)		High altitude,Step-up transformer
Qinghai Electric Power Design Institute (Haibei Zhasuhe PV Park Collection Station))		High altitude,Step-up transformer
Shenzhen Jin Hongwei Technology Co., Ltd		Step-up transformer

Power Plant Project

User Name	Voltage Level	Remark
Henan Coking Coal Group Co., Ltd	110kV	Step-up transformer
Jiangsu Huayuan New Energy Technology Co., Ltd		Step-up transformer
Waste Heat Power Generation Project of Nanjing Iron & Steel Co., Ltd		Step-up transformer
Baotou Shan Sheng New Energy Technology Co., Ltd.		Step-up transformer
Chongqing Hui Ning Water Resources Development Co., Ltd.		Step-up transformer
Qinghai Yellow River Upstream Hydropower Development Co., Ltd.		Step-up transformer
Yixing Zhangzhu Thermal Power Plant	35kV	Step-up transformer
Changshu Second Municipal Solid Waste Incineration Power Plant		Step-up transformer
Jiangyin Binjiang Thermal Power Plant		Step-up transformer
Hunan Taoshui Hydropower Station		Step-up transformer

Projects in metallurgy of iron and steel, petrochemical

User Name	Voltage Level	Remark
Taicang Keda Special Steel Co., Ltd.	110kV	
Jiangyin Xingcheng Special Steel Co., Ltd		
Zhangjiagang Rongsheng Steel Co., Ltd.		
Jiangsu Chang Lv Aluminum Industry Co., Ltd.		
Yinbang Metal Composite Materials Co., Ltd.		
Liaoning Huajin Chemical Group Co., Ltd.		
Dalian Petrochemical Co., Ltd.		
Dalian Petrochemical Co., Ltd., Petro China	66kV	
Zhangjiagang Shagang Group		
Zhangjiagang Hongchang Steel Plate Co., Ltd.	35kV	
Jingjiang Jingyu Special Steel Co., Ltd.		
Changshu Long River Stainless Steel Material Co., Ltd.		
Wuxi Zhongcai New Material Co., Ltd.		
Jiangyin Xingcheng Special Steel Co., Ltd.		
High - tech Zhang Copper Co., Ltd.		
Zhangjiagang Shagang Group		
Aurora Steel (Shanghai) Co., Ltd.		
Wuxi Qiangsheng Steel Co., Ltd.		
Ledu Zhongzhi Ferroalloy Co., Ltd.		
Dalian Petrochemical Center., Petro China		
Jiangyin Xingcheng Special Steel Co., Ltd.	10kV	
Ningxia Iron and Steel (Group) Co., Ltd		
Liaoning Huajin Chemical Group Co., Ltd.		
Dalian Petrochemical Center., Petro China		

SOJO

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