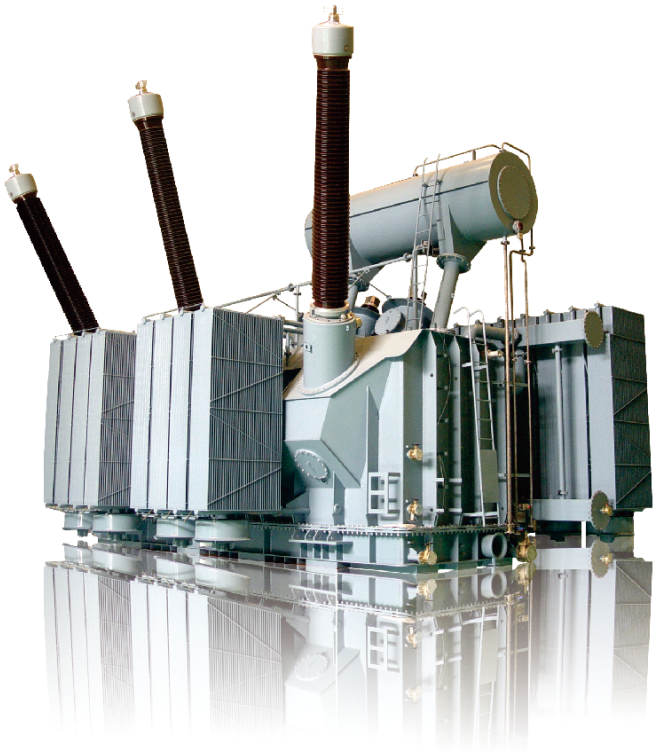


# 35kV—500kV电力变压器

35KV-500KV POWER TRANSFORMER





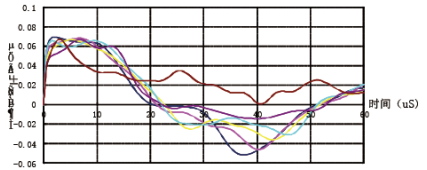
## 产品概述
Product Overview

35kV-500kV系列液浸式电力变压器是在消化国内外先进技术的基础上通过优化创新，采用先进的设计软件对变压器电、磁、热、机械强度及短路强度进行研究和设计，具有低噪声、低损耗、低局放、高抗短路能力的系列电力变压器。

35-500kV series oil immersed power transformer has optimized design using advanced technologies, in order to offer low noise,low loss low partial discharge, high short circuit withstand capability. Advance design software are used for electromagnetic calculation and design of transformer, while 3-D,2-D CAD software for structural design ensure sufficient safety margin during short circuit period. This is based on in-depth theoretical and experimental studies on magnetic, thermal, mechanical strength and short circuit strength. To ensure reliability of the transformer, the insulation are decided based on calculation on main and vertical insulations. The accurate calculation of the electric filed distribution in inner coils will ensure voltage gradient and at coil end it will ensure low partial discharge.

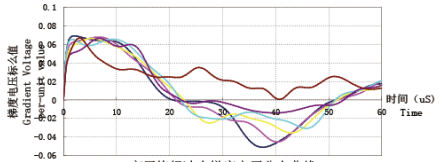
## 产品特点
Product Features

**1、** 采用计算机软件进行冲击电位分布及梯度电位分布计算，计算出线圈内各部位之间、线圈与线圈之间、线圈对地之间等的电位分布，从而有效地改善各点电位分布。




高压绕组冲击梯度电压分布曲线

**1、** Potential distribution is effectively improved by application of software to calculate the impact and gradient potential distribution. The potential calculation is also done between various parts of the coil including between the coil and coil and earthing.




高压绕组冲击梯度电压分布曲线
Distribution curve of HV winding's impact gradient voltage distribution

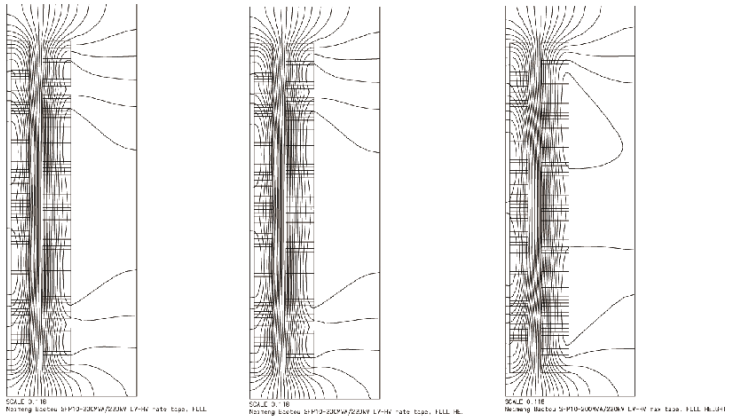
**2、低损耗**

采用漏磁计算，采取有效措施降低杂散损耗，同时也有效地防止局部过热，降低绕组热点温升；采用电磁优化设计软件，优化铁心和绕组设计。

**2、Low loss**

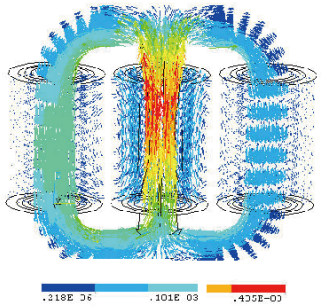
Correctly control the radiation of leakage flux into various parts of transformer on the base of calculation of the magnetic flux leakage in order to adopt corresponding measures to effectively reduce the stray loss, and in the mean time effectively prevent local overheating to control equilibrium temperature rise, lower temperature rise of winding hot spots.

Application of electromagnetic optimizing design software to optimize the design of core and winding.



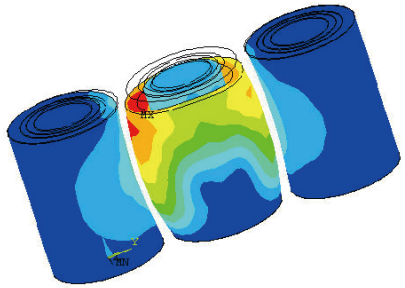
### 3、高抗短路能力

通过变压器抗短路能力核算软件，对高压绕组和低压绕组进行设计，高压绕组为中部出线上、下两路并联，设置轴向油道；调压绕组为高压绕组外侧中部进线上、下两路并联；提高变压器的抗短路能力。



### 3、High resistance to short-circuit capacity

Apply transformer resistance to short-circuit capacity accounting software to design HV winding and LV winding. HV winding will be designed as central outlet, up and down parallel connection with axial oil path; the regulating winding will be designed as central outlet in the middle of HV winding with up and down parallel connection to improve transformer short-circuit resistance.



### 4、低局放，提高使用寿命

1）对电场进行解析计算，改善电场集中的区域。

2）真空注油，有效防止在绝缘件及变压器内部形成气泡来降低局放。

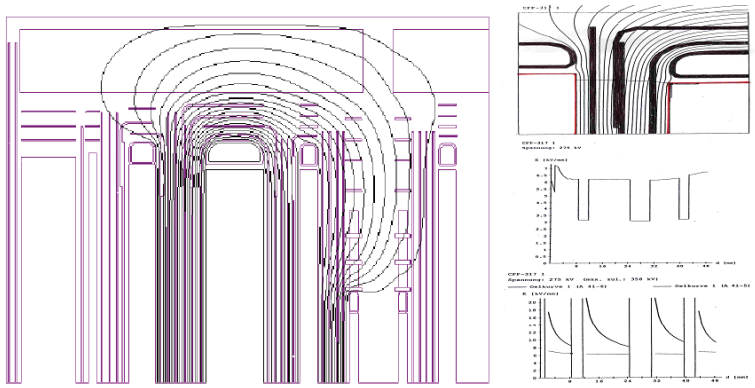
### 4、Low partial discharge, extend transformer service life.

1)、Analytical calculation of electric field to improve the electric field concentrated region.

2)、The way of vacuum oil filling, effectively prevention of formation of air bubbles inside the transformer and insulation parts to reduce partial discharge.







### 5、低噪声

选用优质铁心材料、选择合适的磁通密度与铁心的自振频率、采用高抗短路强度的器身结构、改进油箱与器身的连接方式等来降低噪声。

### 6、低温升

进行油流分布计算，采用合理油流分布结构，降低绕组最热点温升和平均温升，使各部位提高过负荷能力，延长变压器使用寿命。

### 5、Low noise

Lower the noise level by choosing high quality steel core material; right flux density and the self-vibration frequency of the core; application of high resistance to short-circuit of the body structure; and improving the connection method of tank and active part.

### 6、Low temperature rise

Apply reasonable oil flow distribution structure by calculation of oil flow distribution; reduce the winding hot spot temperature rise and the average temperature rise in order to increase overload capacity of each part, extend the life of transformers.

## 质量保证
## Quality Warranty

- 2002年5月，SZ9-40MVA/110kV顺利通过国家变压器质量检测中心突发短路试验

  In May 2002, SZ9-40MVA/110kV transformer successfully passed the dynamic short-circuit test carried out at National Transformer Quality Supervision and Inspection Center.

- 2003年8月，SZ10-31500/220kV顺利通过国家变压器质量监督检验中心监视试验

  In August 2003, SZ10-31500/220kV transformer successfully passed witnessed tests carried out at National Transformer Quality Supervision and Inspection Center.

- 2007年3月，SFP10-200000/220kV顺利通过国家变压器质量监督检验中心监视试验

  In March 2007, SFP10-200000/220kV transformer successfully passed witnessed tests carried out at National Transformer Quality Supervision and Inspection Center.

- 2007年12月，SSZ11-50000/110kV顺利通过国家变压器质量监督检验中心和荷兰KEMA监视的突发短路试验

  In December 2007, SSZ11-50000/110kV transformer successfully passed the dynamic short-circuit test carried out at National Transformer Quality Supervision and Inspection Center and witnessed by KEMA, Netherlands.

- 2008年7月，SFPSZ11-180000/220kV顺利通过国家变压器质量监督检验中心监视试验

In July 2008, SFPSZ11-180000/220kV transformer successfully passed witnessed tests carried out at National Transformer Quality Supervision and Inspection Center.

- 2008年8月，SFPSZ11-180000/220kV顺利通过国家变压器质量监督检验中心和荷兰KEMA监视的突发短路试验

In August 2008, SFPSZ11-180000/220kV transformer successfully passed the dynamic short-circuit test carried out at National Transformer Quality Supervision and Inspection Center and witnessed by KEMA, Netherlands.

- 2010年1月，SSZ11-180000/220kV顺利通过机械工业变压器产品质量监督检验中心监视试验

In January 2010, SSZ11-180000/220kV transformer successfully passed witnessed tests carried out at Machinery Industry Transformer Product Quality Supervision and Inspection Center.

- 2010年9月，SSZ11-180000/220kV顺利通过国家变压器质量监督检验中心和沈阳变压器研究院有限公司变压器实验室监视试验

In September 2010, SSZ11-180000/220kV transformer successfully passed witnessed tests carried out at National Transformer Quality Supervision and Inspection Center and Shenyang Transformer Institute Co., Ltd. Transformer Laboratory.

- 2014年2月，SFSZ11-H-180000/220kV顺利通过国家变压器质量监督检验中心和沈阳变压器研究院股份有限公司变压器实验室监视试验

In February 2014, SFSZ11-H-180000/220kV transformer successfully passed witnessed tests carried out at National Transformer Quality Supervision and Inspection Center and Shenyang Transformer Institute Co., Ltd. Transformer Laboratory.

- 2014年9月，SFZ-178000/330kV顺利通过国家变压器质量检验中心突发短路试验

In September 2014, SFZ-178000/330kV transformer successfully passed the dynamic short-circuit test carried out at National Transformer Quality Supervision and Inspection Center.

- 2015年10月，SSZ11-50000/110kV顺利通过电力工业电力设备及仪表质量检验测试中心监视试验

In October 2015, SSZ11-500000/110kV transformer successfully passed witnessed tests carried out at Power Industry Power Equipment and Instrument Quality Inspection and Testing Center.



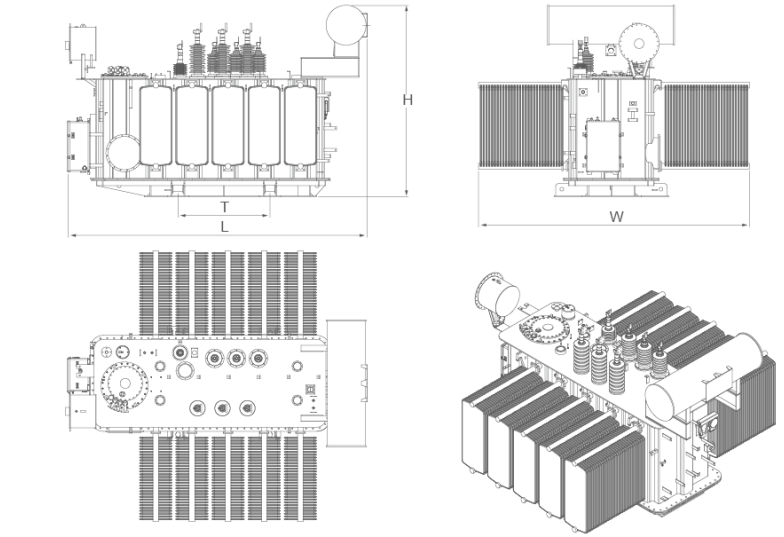



## 型号说明
## Model Coding

□ □—□—□/□ □

- 特殊使用环境代号 Code For Special Application Circumstance
- 电压等级 Voltage Rating
- 额定容量(kVA) Rated Capacity(kVA)
- 特殊用途或特殊结构代号 Code for Special Purpose Or Structure
- 性能水平代号 Code for Performance Level
- 产品型号字母 Letter for Product Model

## 结构图
## Outline Drawing




35kV变压器
35kV Tranformer

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- 2010年9月，SSZ11-180000/220kV顺利通过国家变压器质量监督检验中心和沈阳变压器研究院有限公司变压器实验室监视试验

In September 2010, SSZ11-180000/220kV transformer successfully passed witnessed tests carried out at National Transformer Quality Supervision and Inspection Center and Shenyang Transformer Institute Co., Ltd. Transformer Laboratory.

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In February 2014, SFSZ11-H-180000/220kV transformer successfully passed witnessed tests carried out at National Transformer Quality Supervision and Inspection Center and Shenyang Transformer Institute Co., Ltd. Transformer Laboratory.

- 2014年9月，SFZ-178000/330kV顺利通过国家变压器质量检验中心突发短路试验

In September 2014, SFZ-178000/330kV transformer successfully passed the dynamic short-circuit test carried out at National Transformer Quality Supervision and Inspection Center.

- 2015年10月，SSZ11-50000/110kV顺利通过电力工业电力设备及仪表质量检验测试中心监视试验

In October 2015, SSZ11-500000/110kV transformer successfully passed witnessed tests carried out at Power Industry Power Equipment and Instrument Quality Inspection and Testing Center.



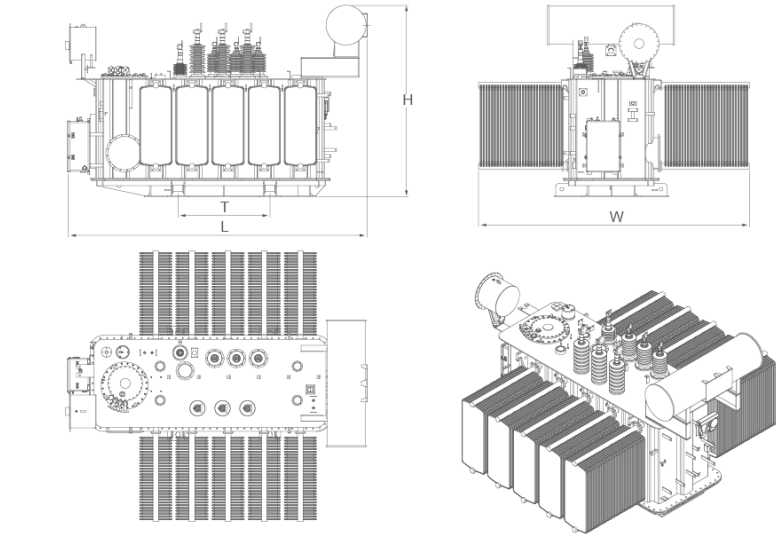



## 型号说明
## Model Coding

□ □—□—□/□ □

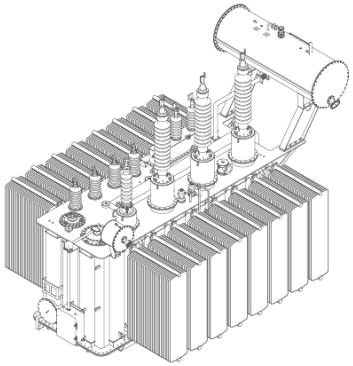
- 特殊使用环境代号 Code For Special Application Circumstance
- 电压等级 Voltage Rating
- 额定容量(kVA) Rated Capacity(kVA)
- 特殊用途或特殊结构代号 Code for Special Purpose Or Structure
- 性能水平代号 Code for Performance Level
- 产品型号字母 Letter for Product Model

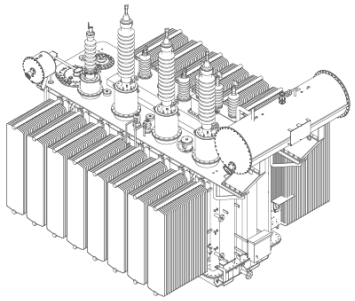
## 结构图
## Outline Drawing

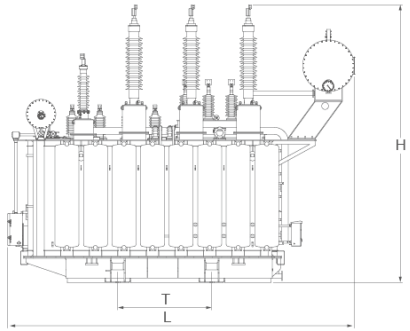


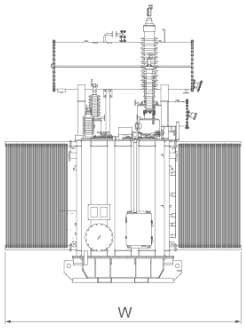

35kV变压器
35kV Tranformer

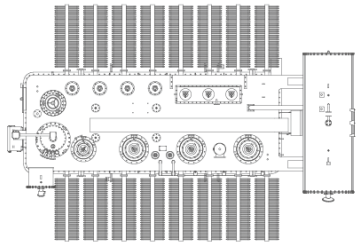
## 结构图
Outline Drawing







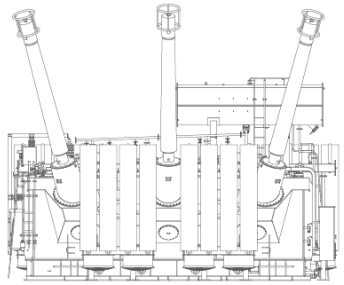



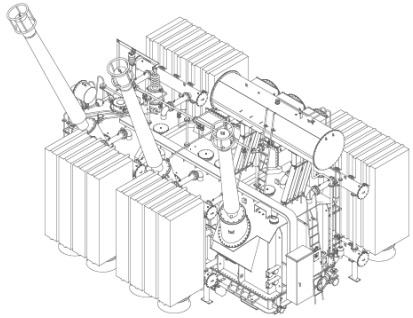
110kV变压器
110kV Tranformer

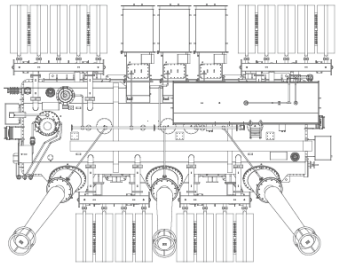


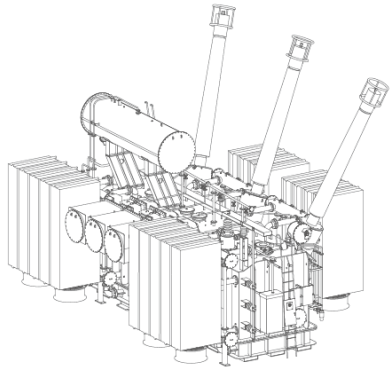


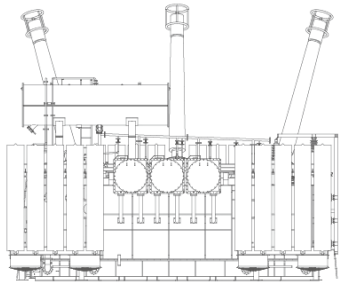
## 结构图
Outline Drawing

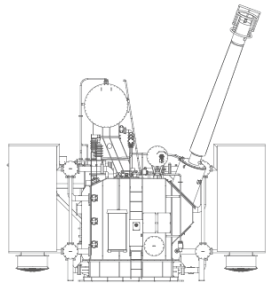












220-500kV变压器
220-500kV Tranformer

# 主要技术参数
## Technical Parameters

### 35 kV级 2 000 kV•A～31 500 kV•A三相双绕组有载调压电力变压器技术数据表
35 kV 2 000 kV•A～31 500 kV•A 3-phase 2-winding Power Transformer with OLTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage ( kV ) | | | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short -circuit impedance (%) | 重量 Weight(kg) | | 外形尺寸 Dimensions | 轨距 Gauge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 高压 H.V | 高压分接范围 Tapping range of H.V | 低压 L.V | | | | | | 油重 Oil | 总重 Total | 长(L)×宽(W)×高(H)×吊高(HL)(mm) | 横向(T)×纵向(T)(mm) |
| 2 000 | SZ11-2 000/35<br>SZ13-2 000/35 | 35 | ±3×2.5% | 6.3<br>10.5 | Yd11 | 2.30<br>1.84 | 19.2 | 0.50 | 6.5 | 1920 | 6770 | 2675×1500×3030×4500 | 1070×1070 |
| 2 500 | SZ11-2 50035<br>SZ13-2 50035 | | | | | 2.72<br>2.18 | 20.6 | 0.50 | | 2150 | 8140 | 2710×2000×3160×4700 | 1070×1070 |
| 3 150 | SZ11-3 150/35<br>SZ13-3 150/35 | 35～38.5 | ±3×2.5% | 6.3<br>10.5 | | 3.23<br>2.58 | 24.7 | 0.50 | 7.0 | 2290 | 8380 | 3640×2590×2540×4000 | 1070×1070 |
| 4 000 | SZ11-4 000/35<br>SZ13-4 000/35 | | | | | 3.87<br>3.10 | 29.1 | 0.50 | | 2340 | 10330 | 3690×2860×2570×4000 | 1070×1070 |
| 5 000 | SZ11-5 000/35<br>SZ13-5 000/35 | | | | | 4.64<br>3.71 | 34.2 | 0.50 | | 2715 | 10890 | 3750×2950×2880×4300 | 1070×1475 |
| 6 300 | SZ11-6 300/35<br>SZ13-6 300/35 | | | | | 5.63<br>4.50 | 36.7 | 0.50 | 8.0 | 3340 | 14590 | 4070×2910×2905×4400 | 1475×1475 |
| 8 000 | SZ11-8 000/35<br>SZ13-8 000/35 | 35～38.5 | ±3×2.5% | 6.3<br>6.6<br>10.5 | YNd11 | 7.87<br>6.30 | 40.6 | 0.40 | | 4080 | 17880 | 4410×3470×2920×4500 | 1475×1475 |
| 10 000 | SZ11-10 000/35<br>SZ13-10 000/35 | | | | | 9.28<br>7.42 | 48.0 | 0.40 | | 4860 | 20940 | 3250×3460×4250×6100 | 1475×1475 |
| 12 500 | SZ11-12 500/35<br>SZ13-12 500/35 | | | | | 10.9<br>8.72 | 56.8 | 0.35 | | 5020 | 22300 | 3400×3690×4550×6400 | 1475×1475 |
| 16 000 | SZ11-16 000/35<br>SZ13-16 000/35 | | | | | 13.1<br>10.5 | 70.3 | 0.35 | | 6310 | 27240 | 3640×3890×4600×6800 | 1475×1475 |
| 20 000 | SZ11-20 000/35<br>SZ13-20 000/35 | | | | | 15.5<br>12.4 | 82.7 | 0.35 | | 7070 | 32530 | 3770×4090×4700×7100 | 1475×1475 |
| 25 000 | SZ11-25 000/35<br>SZ13-25 000/35 | | | | | 18.3<br>14.6 | 97.8 | 0.30 | 10.0 | 8270 | 39240 | 3930×4200×5130×7300 | 1475×1475 |
| 31 500 | SZ11-31 500/35<br>SZ13-31 500/35 | | | | | 21.8<br>17.4 | 116 | 0.30 | | 9500 | 43320 | 4210×4450×5530×7500 | 2040×1475 |

注：损耗水平代号为12型的变压器，其空载损耗比 GB/T 6451 2015下降10%，负载损耗符合 GB/T 6451 - 2015；
损耗水平代号为13型的变压器，其空载损耗比 GB/T 6451 2015下降20%，负载损耗符合 GB/T 6451 - 2015.



### 35 kV级 630 kV•A～31 500 kV•A三相双绕组无励磁调压电力变压器技术数据表
35 kV 630 kV•A～31 500 kV•A 3-phase 2-winding Power Transformer with OCTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage ( kV ) | | | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short -circuit impedance (%) | 重量 Weight(kg) | | 外形尺寸 Dimensions | 轨距 Gauge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 高压 H.V | 高压分接范围 Tapping range of H.V | 低压 L.V | | | | | | 油重 Oil | 总重 Total | 长(L)×宽(W)×高(H)×吊高(HL)(mm) | 横向(T)×纵向(T)(mm) |
| 630 | S11-630/35<br>S13-630/35 | 35 | ±2×2.5%<br>±5% | 3.15<br>6.3<br>10.5 | Yd11 | 0.83<br>0.644 | 7.86 | 0.65 | 6.5 | 880 | 3540 | 1915×1360×2350×4100 | 820×820 |
| 800 | S11-800/35<br>S13-800/35 | | | | | 0.980<br>0.784 | 9.40 | 0.65 | | 1000 | 4000 | 2150×1380×2420×4150 | 820×820 |
| 1 000 | S11-1 000/35<br>S13-1 000/35 | | | | | 1.150<br>0.920 | 11.5 | 0.65 | | 1120 | 4540 | 2210×1480×2500×4200 | 820×850 |
| 1 250 | S11-1 250/35<br>S13-1 250/35 | | | | | 1.40<br>1.12 | 13.9 | 0.55 | | 1190 | 4900 | 2465×1550×2600×4600 | 1070×1070 |
| 1 600 | S11-1 600/35<br>S13-1 600/35 | | | | | 1.69<br>1.35 | 16.6 | 0.45 | | 1420 | 6000 | 2600×1620×2700×4700 | 1070×1070 |
| 2 000 | S11-2 000/35<br>S13-2 000/35 | | | | | 2.17<br>1.74 | 18.3 | 0.45 | | 1500 | 6660 | 2780×1850×2790×5000 | 1070×1070 |
| 2 500 | S11-2 500/35<br>S13-2 500/35 | | | | | 2.56<br>2.05 | 19.6 | 0.45 | | 1670 | 7570 | 2830×2000×2860×5100 | 1070×1070 |
| 3 150 | S11-3 150/35<br>S13-3 150/35 | 35～38.5 | ±2×2.5%<br>±5% | 3.15<br>6.3<br>10.5 | | 3.01<br>2.43 | 23.0 | 0.45 | 7.0 | 2100 | 10300 | 2890×2340×3130×5300 | 1070×1275 |
| 4 000 | S11-4 000/35<br>S13-4 000/35 | | | | | 3.61<br>2.89 | 27.3 | 0.45 | | 2100 | 10500 | 2950×2780×3210×5400 | 1070×1275 |
| 5 000 | S11-5 000/35<br>S13-5 000/35 | | | | | 4.32<br>3.46 | 31.3 | 0.45 | | 2350 | 11900 | 3000×3050×3230×5600 | 1070×1275 |
| 6 300 | S11-6 300/35<br>S13-6 300/35 | | | | | 5.24<br>4.19 | 35.0 | 0.45 | 8.0 | 2390 | 12625 | 3190×3200×3250×5900 | 1070×1275 |
| 8 000 | S11-8 000/35<br>S13-8 000/35 | 35～38.5 | ±2×2.5% | 3.15<br>3.3<br>6.3<br>6.6<br>10.5 | YNd11 | 7.20<br>5.76 | 38.4 | 0.35 | | 2980 | 15650 | 3250×3280×3600×6100 | 1070×1275 |
| 10 000 | S11-10 000/35<br>S13-10 000/35 | | | | | 8.70<br>6.96 | 45.3 | 0.35 | | 4030 | 19530 | 3270×3460×3610×6200 | 1475×1475 |
| 12 500 | S11-12 500/35<br>S13-12 500/35 | | | | | 10.0<br>8.00 | 53.8 | 0.30 | | 4280 | 21000 | 3290×3680×3640×6300 | 1475×1475 |
| 16 000 | S11-16 000/35<br>S13-16 000/35 | | | | | 12.1<br>9.68 | 65.8 | 0.30 | | 5520 | 26300 | 3350×3960×4100×6500 | 1475×1475 |
| 20 000 | S11-20 000/35<br>S13-20 000/35 | | | | | 14.4<br>11.5 | 79.5 | 0.30 | | 5920 | 31520 | 3460×3980×4150×6700 | 1475×1475 |
| 25 000 | S11-25 000/35<br>S13-25 000/35 | | | | | 17.0<br>13.6 | 94.0 | 0.25 | 10.0 | 6300 | 33510 | 4000×3640×4370×6900 | 1475×1475 |
| 31 500 | S11-31 500/35<br>S13-31 500/35 | | | | | 20.2<br>16.2 | 112 | 0.25 | | 6700 | 40125 | 3890×4420×4510×7300 | 1475×1475 |

注：损耗水平代号为12型的变压器，其空载损耗比 GB/T 6451 2015下降10%，负载损耗符合 GB/T 6451 - 2015；
损耗水平代号为13型的变压器，其空载损耗比 GB/T 6451 2015下降20%，负载损耗符合 GB/T 6451 - 2015.

## 110 kV级 6 300 kV•A～180 000 kV•A三相双绕组无励磁调压电力变压器技术数据表

110 kV 6 300 kV•A～180 000 kV•A 3-phase 2-winding Power Transformer with OCTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage (kV) | | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance (%) | 重量 Weight(kg) | | | 外形尺寸 Dimensions | 轨距 Gauge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 高压 H.V | 低压 LV | | | | | | 油重 Oil | 总重 Total | 运输重 Transport | 长(L)×宽(W)×高(H)×吊高(HL)(mm) | 横向(T) (mm) |
| 6 300 | S 11-6 300/110 | 110±2×2.5%<br>115±2×2.5%<br>121±2×2.5% | 6.3<br>6.6<br>10.5 | YNd11 | 7.40 | 35.0 | 0.62 | 10.5 | 7500 | 23000 | 18500 | 4300×5320×4690×5300 | 1475 |
| 8 000 | S 11-8 000/110 | | | | 8.90 | 42.0 | 0.62 | | 8100 | 25800 | 21400 | 4450×5550×4740×5500 | 1475 |
| 10 000 | S 11-10 000/110 | | | | 10.5 | 50.0 | 0.58 | | 9300 | 30300 | 24000 | 4560×5730×4840×5800 | 1475 |
| 12 500 | S 11-12 500/110 | | | | 12.4 | 59.0 | 0.58 | | 10000 | 34300 | 28100 | 4670×5790×4830×6000 | 1475 |
| 16 000 | S 11-16 000/110 | | | | 15.0 | 73.0 | 0.54 | | 11000 | 38400 | 30500 | 4810×6120×4860×6300 | 2040 |
| 20 000 | S 11-20 000/110 | | | | 17.6 | 88.0 | 0.54 | | 12300 | 43600 | 35500 | 4820×6200×5100×6400 | 2040 |
| 25 000 | S 11-25 000/110 | | | | 20.8 | 104 | 0.50 | | 12600 | 48400 | 37600 | 4990×6330×5320×6800 | 2040 |
| 31 500 | S 11-31 500/110 | | | | 24.6 | 123 | 0.48 | | 14400 | 55000 | 43200 | 5080×6380×5360×7000 | 2040 |
| 40 000 | S 11-40 000/110 | | | | 29.4 | 148 | 0.45 | | 16200 | 64000 | 49000 | 5280×6500×5410×7300 | 2040 |
| 50 000 | S 11-50 000/110 | | | | 35.2 | 175 | 0.42 | | 18000 | 73200 | 57000 | 5320×6660×5500×7500 | 2040 |
| 63 000 | S 11-63 000/110 | | | | 41.6 | 208 | 0.38 | | 19800 | 85000 | 64800 | 5610×6760×5520×8000 | 2040 |
| 75 000 | S 11-75 000/110 | | 13.8<br>15.75<br>18<br>21 | | 47.2 | 236 | 0.33 | 12～14 | 21800 | 95000 | 73000 | 7480×6760×6000×8500 | 2040 |
| 90 000 | S 11-90 000/110 | | | | 54.4 | 272 | 0.30 | | 24800 | 105500 | 77500 | 8080×6760×6000×8500 | 2040 |
| 120 000 | S 11-120 000/110 | | | | 67.8 | 337 | 0.27 | | 26000 | 125500 | 89800 | 8560×7860×6500×8600 | 2040 |
| 150 000 | S 11-150 000/110 | | | | 80.1 | 399 | 0.24 | | 28800 | 155500 | 128000 | 8600×7860×6800×8600 | 2040 |
| 180 000 | S 11-180 000/110 | | | | 90.0 | 457 | 0.20 | | 31600 | 185500 | 143000 | 8780×7860×7100×8820 | 2040 |

注：损耗水平代号为12型的变压器，其空载损耗比 GB/T 6451 2015下降10%，负载损耗符合 GB/T 6451 - 2015；
损耗水平代号为13型的变压器，其空载损耗比 GB/T 6451 2015下降20%，负载损耗符合 GB/T 6451 - 2015.

## 110 kV级 6 300 kV•A～63 000 kV•A三相双绕组有载调压电力变压器技术数据表

110 kV 6 300 kV•A～63 000 kV•A 3-phase 2-winding Power Transformer with OLTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage (kV) | | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance (%) | 重量 Weight(kg) | | | 外形尺寸 Dimensions | 轨距 Gauge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 高压 H.V | 低压 LV | | | | | | 油重 Oil | 总重 Total | 运输重 Transport | 长(L)×宽(W)×高(H)×吊高(HL)(mm) | 横向(T) (mm) |
| 6 300 | SZ 11-6 300/110 | 110±8×1.25% | 6.3<br>6.6<br>10.5<br>21 | YNd11 | 8.00 | 35.0 | 0.64 | 10.5 | 7500 | 23400 | 18800 | 4300×5520×4690×5300 | 1475 |
| 8 000 | SZ 11-8 000/110 | | | | 9.60 | 42.0 | 0.64 | | 8100 | 26300 | 21800 | 4450×5750×4740×5500 | 1475 |
| 10 000 | SZ 11-10 000/110 | | | | 11.3 | 50.0 | 0.59 | | 9300 | 30900 | 24500 | 4560×5930×4830×5800 | 1475 |
| 12 500 | SZ 11-12 500/110 | | | | 13.4 | 59.0 | 0.59 | | 10200 | 35000 | 28800 | 4670×5990×4840×6000 | 1475 |
| 16 000 | SZ 11-16 000/110 | | | | 16.1 | 73.0 | 0.55 | | 11200 | 39200 | 31300 | 4810×6320×4860×6300 | 2040 |
| 20 000 | SZ 11-20 000/110 | | | | 19.2 | 88.0 | 0.55 | | 12600 | 44500 | 36400 | 4820×6400×5100×6400 | 2040 |
| 25 000 | SZ 11-25 000/110 | | | | 22.7 | 104 | 0.51 | | 12900 | 49400 | 38600 | 4990×6530×5320×6800 | 2040 |
| 31 500 | SZ 11-31 500/110 | | | | 27.0 | 123 | 0.51 | | 14700 | 56000 | 44200 | 5080×6580×5360×7000 | 2040 |
| 40 000 | SZ 11-40 000/110 | | | | 32.3 | 156 | 0.46 | 12～18 | 16700 | 65000 | 50200 | 5280×6700×5410×7300 | 2040 |
| 50 000 | SZ 11-50 000/110 | | | | 38.2 | 194 | 0.46 | | 18500 | 74600 | 58500 | 5320×6860×5500×7500 | 2040 |
| 63 000 | SZ 11-63 000/110 | | | | 45.2 | 232 | 0.42 | | 20300 | 86600 | 66500 | 5610×6960×5520×8000 | 2040 |

注：损耗水平代号为12型的变压器，其空载损耗比 GB/T 6451 2015下降10%，负载损耗符合 GB/T 6451 - 2015；
损耗水平代号为13型的变压器，其空载损耗比 GB/T 6451 2015下降20%，负载损耗符合 GB/T 6451 - 2015.





## 110 kV级 6 300 kV•A～63 000 kV•A三相三绕组有载调压电力变压器技术数据表

110 kV 6 300 kV•A～63 000 kV•A 3-phase 3-winding Power Transformer with OLTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage (kV) | | | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance (%) | 重量 Weight(kg) | | | 外形尺寸 Dimensions | 轨距 Gauge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 高压 H.V | 中压 M.V. | 低压 L.V | | | | | | 油重 Oil | 总重 Total | 运输重 Transport | 长(L)×宽(w)×高(H)×吊高(HL)(mm) | 横向(T) (mm) |
| 6 300 | SSZ 11-6 300/110 | 110±8×1.25% | 36<br>37<br>38.5 | 6.3<br>6.6<br>10.5<br>21 | YNyn0d11 | 9.60 | 44.0 | 0.76 | 高-中 HV-MV 10.5<br>高-低 HV-LV 18～19<br>中-低 MV-LV 6.5 | 8900 | 30700 | 23100 | 4370×6750×4710×5800 | 2040 |
| 8 000 | SSZ 11-8 000/110 | | | | | 11.5 | 53.0 | 0.76 | | 10300 | 34500 | 26600 | 4420×6780×4760×5900 | 2040 |
| 10 000 | SSZ 11-10 000/110 | | | | | 13.6 | 62.0 | 0.71 | | 11400 | 37400 | 29600 | 4530×6780×4850×6000 | 2040 |
| 12 500 | SSZ 11-12 500/110 | | | | | 16.1 | 74.0 | 0.71 | | 12800 | 44000 | 34200 | 4670×6890×4880×6400 | 2040 |
| 16 000 | SSZ 11-16 000/110 | | | | | 19.3 | 90.0 | 0.67 | | 13900 | 50600 | 39800 | 4750×6990×4970×6800 | 2040 |
| 20 000 | SSZ 11-20 000/110 | | | | | 22.8 | 106 | 0.67 | | 14500 | 53300 | 41600 | 4800×7150×5130×7000 | 2040 |
| 25 000 | SSZ 11-25 000/110 | | | | | 27.0 | 126 | 0.62 | | 15900 | 59800 | 46500 | 4960×7170×5300×7200 | 2040 |
| 31 500 | SSZ 11-31 500/110 | | | | | 32.1 | 149 | 0.62 | | 17700 | 69000 | 53200 | 5040×7320×5390×7400 | 2040 |
| 40 000 | SSZ 11-40 000/110 | | | | | 38.5 | 179 | 0.58 | | 21100 | 83000 | 64800 | 5380×7430×5580×7800 | 2040 |
| 50 000 | SSZ 11-50 000/110 | | | | | 45.5 | 213 | 0.58 | | 24200 | 97600 | 77000 | 5440×7750×5620×8000 | 2040 |
| 63 000 | SSZ 11-63 000/110 | | | | | 54.1 | 256 | 0.53 | | 25500 | 108600 | 86000 | 5720×7810×5740×8100 | 2040 |

注：损耗水平代号为12型的变压器，其空载损耗比 GB/T 6451 2015下降10%，负载损耗符合 GB/T 6451 - 2015；
损耗水平代号为13型的变压器，其空载损耗比 GB/T 6451 2015下降20%，负载损耗符合 GB/T 6451 - 2015.

## 220 kV级 31 500 kV•A～420 000 kV•A三相双绕组无励磁调压电力变压器技术数据表

220 kV 31 500 kV•A～420 000 kV•A 3-phase 2-winding Power Transformer with OCTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage (kV) | | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | | 高压 (kV) H.V | 低压 (kV) L.V | | | | | |
| 31 500 | S 11-31 500/220 | 220±2×2.5%<br>242±2×2.5% | 6.3<br>6.6<br>10.5 | YNd11 | 28.0 | 128 | 0.56 | 12～14 |
| 40 000 | S 11-40 000/220 | | | | 32.0 | 149 | 0.56 | |
| 50 000 | S 11-50 000/220 | | | | 39.0 | 179 | 0.52 | |
| 63 000 | S 11-63 000/220 | | | | 46.0 | 209 | 0.52 | |
| 75 000 | S 11-75 000/220 | | 10.5<br>13.8 | | 53.0 | 237 | 0.48 | |
| 90 000 | S 11-90 000/220 | | | | 61.0 | 273 | 0.44 | |
| 120 000 | S 11-120 000/220 | | | | 75.0 | 338 | 0.44 | |
| 150 000 | S 11-150 000/220 | | 10.5<br>13.8<br>15.75<br>18<br>20 | | 89.0 | 400 | 0.40 | |
| 160 000 | S 11-160 000/220 | | | | 93.0 | 420 | 0.39 | |
| 180 000 | S 11-180 000/220 | | | | 102 | 459 | 0.36 | |
| 240 000 | S 11-240 000/220 | | | | 128 | 538 | 0.33 | |
| 300 000 | S 11-300 000/220 | | 15.75<br>18<br>20 | | 151 | 641 | 0.30 | |
| 360 000 | S 11-360 000/220 | | | | 173 | 735 | 0.30 | |
| 370 000 | S 11-370 000/220 | | | | 176 | 750 | 0.30 | |
| 400 000 | S 11-400 000/220 | | | | 187 | 795 | 0.28 | |
| 420 000 | S 11-420 000/220 | | | | 193 | 824 | 0.28 | |

注：损耗水平代号为12型的变压器，其空载损耗比 GB/T 6451 2015下降10%，负载损耗符合 GB/T 6451 - 2015；
损耗水平代号为13型的变压器，其空载损耗比 GB/T 6451 2015下降20%，负载损耗符合 GB/T 6451 - 2015.

## 220 kV级 31 500 kV•A～300 000 kV•A三相三绕组无励磁调压电力变压器技术数据表

220 kV 31 500 kV•A～300 000 kV•A 3-phase 3-winding Power Transformer with OCTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage (kV) 高压 (kV) H.V | 中压 M.V. (kV) | 低压 (kV) L.V | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance (%) 升压 Step up | 降压 Step down |
|---|---|---|---|---|---|---|---|---|---|---|
| 31 500 | SS 11-31 500/220 | 220±2×2.5%<br>230±2×2.5%<br>242±2×2.5% | 69<br>115<br>121 | 6.3、6.6<br>10.5、21<br>36、37<br>38.5 | YNyn0d11 | 32.0 | 153 | 0.56 | 高-中 HV-MV 22~24<br>高-低 HV-LV 12~14<br>中-低 MV-LV 7~9 | 高-中 HV-MV 12~14<br>高-低 HV-LV 22~24<br>中-低 MV-LV 7~9 |
| 40 000 | SS 11-40 000/220 | | | | | 38.0 | 183 | 0.50 | | |
| 50 000 | SS 11-50 000/220 | | | | | 44.0 | 216 | 0.44 | | |
| 63 000 | SS 11-63 000/220 | | | | | 52.0 | 257 | 0.44 | | |
| 90 000 | SS 11-90 000/220 | | | 10.5、13.8<br>21、36<br>37、38.5 | | 68.0 | 333 | 0.39 | | |
| 120 000 | SS 11-120 000/220 | | | | | 84.0 | 410 | 0.39 | | |
| 150 000 | SS 11-150 000/220 | | | 10.5、13.8<br>15.75、21<br>36、37<br>38.5 | | 100 | 487 | 0.33 | | |
| 180 000 | SS 11-180 000/220 | | | | | 113 | 555 | 0.33 | | |
| 240 000 | SS 11-240 000/220 | | | | | 140 | 684 | 0.28 | | |
| 300 000 | SS 11-300 000/220 | | | | | 166 | 807 | 0.24 | | |

注：损耗水平代号为12型的变压器，其空载损耗比 GB/T 6451 2015下降10%，负载损耗符合 GB/T 6451 - 2015；
损耗水平代号为13型的变压器，其空载损耗比 GB/T 6451 2015下降20%，负载损耗符合 GB/T 6451 - 2015.

## 220 kV级 31 500 kV•A～240 000 kV•A低压为66 kV级三相双绕组无励磁调压电力变压器技术数据表

220 kV 31 500 kV•A～240 000 kV•A Low Voltage 66 kV 3-phase 2-winding Power Transformer with OCTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage (kV) 高压 (kV) H.V | 低压 (kV) L.V | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| 31 500 | S 11-31 500/220 | 220±2×2.5%<br>230±2×2.5% | 63<br>66<br>69 | YNd11 | 30.0 | 143 | 0.71 | 12~14 |
| 40 000 | S 11-40 000/220 | | | | 36.0 | 167 | 0.71 | |
| 50 000 | S 11-50 000/220 | | | | 42.0 | 200 | 0.65 | |
| 63 000 | S 11-63 000/220 | | | | 50.0 | 234 | 0.65 | |
| 90 000 | S 11-90 000/220 | | | | 66.0 | 306 | 0.60 | |
| 120 000 | S 11-120 000/220 | | | | 81.0 | 367 | 060 | |
| 150 000 | S 11-150 000/220 | | | | 97.0 | 430 | 0.54 | |
| 180 000 | S 11-180 000/220 | | | | 110 | 487 | 0.54 | |
| 240 000 | S 11-240 000/220 | | | | 136 | 603 | 0.48 | |

注：损耗水平代号为12型的变压器，其空载损耗比 GB/T 6451 2015下降10%，负载损耗符合 GB/T 6451 - 2015；
损耗水平代号为13型的变压器，其空载损耗比 GB/T 6451 2015下降20%，负载损耗符合 GB/T 6451 - 2015.





## 220 kV级 31 500 kV•A～240 000 kV•A三相三绕组无励磁调压自耦电力变压器技术数据表

220 kV 31 500 kV•A～240 000 kV•A 3-phase 3-winding Power Transformer with OCTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage (kV) 高压 (kV) H.V | 中压 M.V. (kV) | 低压 (kV) L.V | 联结组标号 Vector Group | 升压组合 空载损耗 No load loss (kW) | 升压组合 负载损耗 Load loss (kW) | 升压组合 空载电流 No load current (%) | 降压组合 空载损耗 No load loss (kW) | 降压组合 负载损耗 Load loss (kW) | 降压组合 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance(%) 升压 Step up | 短路阻抗 Short-circuit impedance(%) 降压 Step down |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 500 | OSS 11-31 500/220 | 220±2×2.5%<br>230±2×2.5%<br>242±2×2.5% | 115<br>121 | 6.6<br>10.5<br>21<br>36<br>37<br>38.5 | YNa0d11 | 20.0 | 111 | 0.45 | 17.0 | 94.0 | 0.40 | 高-中 HV-MV 12~14<br>高-低 HV-LV 8~12<br>中-低 MV-LV 14~18 | 高-中 HV-MV 8~10<br>高-低 HV-MV 28~34<br>中-低 MV-LV 18~24 |
| 40 000 | OSS 11-40 000/220 | | | | | 23.0 | 136 | 0.45 | 20.0 | 114 | 0.40 | | |
| 50 000 | OSS 11-50 000/220 | | | | | 27.0 | 161 | 0.40 | 24.0 | 136 | 0.34 | | |
| 63 000 | OSS 11-63 000/220 | | | | | 32.0 | 190 | 0.40 | 28.0 | 162 | 0.34 | | |
| 90 000 | OSS 11-90 000/220 | | | | | 40.0 | 262 | 0.34 | 36.0 | 222 | 0.28 | | |
| 120 000 | OSS 11-120 000/220 | | | 10.5<br>13.8<br>15.75<br>18<br>21<br>36<br>37<br>38.5 | | 49.0 | 323 | 0.34 | 44.0 | 273 | 0.28 | | |
| 150 000 | OSS 11-150 000/220 | | | | | 58.0 | 384 | 0.28 | 52.0 | 324 | 0.26 | | |
| 180 000 | OSS 11-180 000/220 | | | | | 67.0 | 439 | 0.28 | 60.0 | 367 | 0.26 | | |
| 240 000 | OSS 11-240 000/220 | | | | | 79.0 | 545 | 0.26 | 71.0 | 478 | 0.20 | | |

升压结构的容量分配为（100/50/100）%，降压结构的容量分配为（100/100/50）%。

注：损耗水平代号为12型的变压器，其空载损耗比 GB/T 6451 2015下降10%，负载损耗符合 GB/T 6451 - 2015；
损耗水平代号为13型的变压器，其空载损耗比 GB/T 6451 2015下降20%，负载损耗符合 GB/T 6451 - 2015.

## 220 kV级 31 500 kV•A～240 000 kV•A三相三绕组有载调压电力变压器技术数据表

220 kV 31 500 kV•A～240 000 kV•A 3-phase 3-winding Auto Power Transformer with OLTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage (kV) 高压 (kV) H.V | 中压 M.V. (kV) | 低压 (kV) L.V | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 容量分配 Capacity allocation (%) | 短路阻抗 Short-circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 31 500 | SSZ 11-31 500/220 | 220±8×1.25%<br>230±8×1.25% | 69<br>115<br>121 | 6.3<br>6.6<br>10.5<br>21<br>36<br>37<br>38.5 | YNyn0d11 | 35.0 | 153 | 0.63 | 100/100/<br>100/100/<br>50/100<br>100/100/<br>50 | 高-中 HV-MV 12~14<br>高-低 HV-LV 22~24<br>中-低 MV-LV 7~9 |
| 40 000 | SSZ 11-40 000/220 | | | | | 41.0 | 183 | 0.60 | | |
| 50 000 | SSZ 11-50 000/220 | | | | | 48.0 | 216 | 0.60 | | |
| 63 000 | SSZ 11-63 000/220 | | | | | 56.0 | 257 | 0.55 | | |
| 90 000 | SSZ 11-90 000/220 | | | 10.5<br>21<br>36<br>37<br>38.5 | | 73.0 | 333 | 0.44 | | |
| 120 000 | SSZ 11-120 000/220 | | | | | 92.0 | 410 | 0.44 | | |
| 150 000 | SSZ 11-150 000/220 | | | | | 108 | 487 | 0.39 | | |
| 180 000 | SSZ 11-180 000/220 | | | | | 124 | 598 | 0.39 | | |
| 240 000 | SSZ 11-240 000/220 | | | | | 154 | 741 | 0.35 | | |

注：损耗水平代号为12型的变压器，其空载损耗比 GB/T 6451 2015下降10%，负载损耗符合 GB/T 6451 - 2015；
损耗水平代号为13型的变压器，其空载损耗比 GB/T 6451 2015下降20%，负载损耗符合 GB/T 6451 - 2015.

## 220 kV级 31 500 kV•A～240 000 kV•A三相三绕组有载调压自耦电力变压器技术数据表

220 kV 31 500 kV•A～240 000 kV•A 3-phase 3-winding Auto Power Transformer with OLTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage (kV) 高压 (kV) H.V | 中压 M.V. (kV) | 低压 (kV) L.V | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 容量分配 Capacity allocation (%) | 短路阻抗 Short-circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 31 500 | OSSZ 11-31 500/220 | 220±8 ×1.25% 230±8 ×1.25% | 115 121 | 6.3 6.6 10.5 21 36 37 38.5 | YNa0d11 | 20.0 | 102 | 0.44 | 100/100 /50 | 高-中 HV-MV 8~11 高-低 HV-LV 28~34 中-低 MV-LV 18~24 |
| 40 000 | OSSZ 11-40 000/220 | | | | | 24.0 | 125 | 0.44 | | |
| 50 000 | OSSZ 11-50 000/220 | | | | | 28.0 | 149 | 0.39 | | |
| 63 000 | OSSZ 11-63 000/220 | | | | | 33.0 | 179 | 0.39 | | |
| 90 000 | OSSZ 11-90 000/220 | | | | | 40.0 | 234 | 0.33 | | |
| 120 000 | OSSZ 11-120 000/220 | | | 10.5 21 36 37 38.5 | | 51.0 | 292 | 0.33 | | |
| 150 000 | OSSZ 11-150 000/220 | | | | | 60.0 | 346 | 0.28 | | |
| 180 000 | OSSZ 11-180 000/220 | | | | | 68.0 | 398 | 0.28 | | |
| 240 000 | OSSZ 11-240 000/220 | | | | | 83.0 | 513 | 0.24 | | |

注：损耗水平代号为12型的变压器，其空载损耗比 GB/T 6451 2015下降10%，负载损耗符合 GB/T 6451 - 2015；
损耗水平代号为13型的变压器，其空载损耗比 GB/T 6451 2015下降20%，负载损耗符合 GB/T 6451 - 2015.

## 330 kV级 90 000 kV•A～720 000 kV•A三相双绕组无励磁调压电力变压器技术数据表

330 kV级 90 000 kV•A～720 000 kV•A 3-phase 2-winding Power Transformer with OCTC

| 额定容量 Rated Capacity (kV•A) | 型号 Model | 额定电压 Rated Voltage (kV) 高压 (kV) H.V | 低压 (kV) L.V | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| 90 000 | S 11-90 000/330 | 345 345±2×2.5% 363 363±2×2.5% | 10.5 13.8 15.75 18 20 | YNd11 | 68.0 | 274 | 0.44 | 14～15 |
| 120 000 | S 11-120 000/330 | | | | 85.0 | 340 | 0.44 | |
| 150 000 | S 11-150 000/330 | | | | 101 | 402 | 0.41 | |
| 180 000 | S 11-180 000/330 | | | | 116 | 461 | 0.38 | |
| 240 000 | S 11-240 000/330 | | | | 145 | 572 | 0.34 | |
| 360 000 | S 11-360 000/330 | | | | 198 | 802 | 0.34 | |
| 370 000 | S 11-370 000/330 | | | | 202 | 818 | 0.30 | |
| 400 000 | S 11-400 000/330 | | | | 214 | 867 | 0.30 | |
| 720 000 | S 11-720 000/330 | | | | 332 | 1347 | 0.20 | |





## 500 kV级 250 MV•A～400 MV•A单相三绕组有载调压自耦电力变压器技术数据表（中压线端调压）

500kV 250 MV•A～400 MV•A Single-phase 3-winding Auto Power Transformer with OLTC(Intermediate Voltage Line Terminal Regulating)

| 额定容量 Rated Capacity (MV·A) | 型号 Model | 额定电压 Rated Voltage (kV) 高压 (kV) H.V | (kV) | 低压 (kV) L.V | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance (%) | 容量分配 (MV•A) |
|---|---|---|---|---|---|---|---|---|---|---|
| 250 | ODSZ 11-250000/550 | 500/√3 520/√3 550/√3 | 230/√3 ±8x 1.25% | 35 36 37 38.5 63 66 | Ia0i0 | 85.0 | 380 | 0.15 | 高-中 HV-MV 12 高-低 HV-LV 34～38 中-低 MV-LV 20～22 | 250/250/40 250/250/80 |
| 334 | ODSZ 11-334000/550 | | | | | 110 | 490 | 0.10 | | 334/334/100 |
| 400 | ODSZ 11-400000/550 | | | | | 150 | 560 | 0.10 | | 400/400/120 |
| 250 | ODSZ 11-250000/550 | | | | | 85.0 | 405 | 0.15 | 高-中 HV-MV 12 高-低 HV-LV 42～46 中-低 MV-LV 28～30 | 250/250/60 250/250/80 |
| 334 | ODSZ 11-334000/550 | | | | | 110 | 530 | 0.10 | | 334/334/80 334/334/100 |
| 400 | ODSZ 11-400000/550 | | | | | 130 | 610 | 0.10 | | 400/400/120 |
| 250 | ODSZ 11-250000/550 | | | | | 85.0 | 405 | 0.15 | 高-中 HV-MV 14～15 高-低 HV-LV 42～48 中-低 MV-LV 28～30 | 250/250/80 |
| 334 | ODSZ 11-334000/550 | | | | | 110 | 530 | 0.10 | | 334/334/80 334/334/100 |
| 400 | ODSZ 11-400000/550 | | | | | 130 | 610 | 0.10 | | 400/400/120 |

## 500 kV级 250 MV•A～400 MV•A单相三绕组无励磁调压自耦电力变压器技术数据表（中压线端调压）

500kV 250 MV•A～400 MV•A Single-phase 3-winding Power Transformer with OLTC(Intermediate Voltage Line Terminal Regulating)

| 额定容量 Rated Capacity (MV·A) | 型号 Model | 额定电压 Rated Voltage (kV) 高压 (kV) H.V | (kV) | 低压 (kV) L.V | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance (%) | 容量分配 (MV•A) |
|---|---|---|---|---|---|---|---|---|---|---|
| 250 | ODS 11-250000/550 | 500/√3 520/√3 550/√3 | 230/√3 230/√3 (±2x 2.5%) 242/√3 (±2x 2.5%) | 35 36 37 38.5 63 66 | Ia0i0 | 85.0 | 370 | 0.15 | 高-中 HV-MV 12 高-低 HV-LV 34～38 中-低 MV-LV 20～22 | 250/250/60 250/250/80 |
| 334 | ODS 11-334000/550 | | | | | 105 | 475 | 0.10 | | 334/334/100 |
| 400 | ODS 11-400000/550 | | | | | 120 | 545 | 0.10 | | 400/400/120 |
| 250 | ODS 11-250000/550 | | | | | 85.0 | 395 | 0.15 | 高-中 HV-MV 12 高-低 HV-LV 42～46 中-低 MV-LV 28～30 | 250/250/60 250/250/80 |
| 334 | ODS 11-334000/550 | | | | | 105 | 510 | 0.10 | | 334/334/80 334/334/100 |
| 400 | ODS 11-400000/550 | | | | | 120 | 580 | 0.10 | | 400/400/120 |
| 250 | ODS 11-250000/550 | | | | | 85.0 | 395 | 0.15 | 高-中 HV-MV 14～15 高-低 HV-LV 42～46 中-低 MV-LV 28～30 | 250/250/80 |
| 334 | ODS 11-334000/550 | | | | | 105 | 510 | 0.10 | | 334/334/80 334/334/100 |
| 400 | ODS 11-400000/550 | | | | | 120 | 580 | 0.10 | | 400/400/120 |

### 500 kV级 250 MV•A～1 170 MV•A三相双绕组无励磁调压电力变压器技术数据表

500 kV 250 MV•A～1 170 MV•A 3-phase 2-winding Power Transformer with OCTC

| 额定容量 Rated Capacity (MV·A) | 型号 Model | 额定电压 Rated Voltage (kV) | | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | | 高压 (kV) H.V | 低压 (kV) L.V | | | | | |
| 240 | S 11-240 000/550 | 500<br>525<br>550 | 13.8/15.75 | YNd11 | 125 | 665 | 0.20 | 14 |
| 300 | S 11-300 000/550 | | 13.8/15.75/18 | | 145 | 785 | 0.20 | |
| 370 | S 11-370 000/550 | | 15.75/18/20 | | 170 | 900 | 0.15 | |
| 400 | S 11-400 000/550 | | 18/20/24 | | 175 | 950 | 0.15 | |
| 420 | S 11-420 000/550 | | 15.75/18/20 | | 185 | 955 | 0.15 | 14或16 |
| 480 | S 11-480 000/550 | | 15.75/18/20 | | 200 | 1060 | 0.15 | |
| 600 | S 11-600 000/550 | | 15.75/18/20/24 | | 260 | 1335 | 0.15 | |
| 720 | S 11-720 000/550 | | 18/20/24 | | 305 | 1535 | 0.10 | |
| 750 | S 11-750 000/550 | | 20/22 | | 315 | 1580 | 0.10 | 16或18 |
| 780 | S 11-780 000/550 | | 22 | | 320 | 1630 | 0.10 | |
| 860 | S 11-860 000/550 | | 22 | | 345 | 1750 | 0.10 | |
| 1140 | S 11-1 140 000/550 | | 27 | | 430 | 2165 | 0.10 | |
| 1170 | S 11-1 170 000/550 | | 27 | | 440 | 2200 | 0.10 | |

### 500 kV级 260 MV•A～484 MV•A单相双绕组无励磁调压电力变压器技术数据表

500 kV 260 MV•A～484 MV•A Single-phase 2-winding Power Transformer with OCTC

| 额定容量 Rated Capacity (MV·A) | 型号 Model | 额定电压 Rated Voltage (kV) | | 联结组标号 Vector Group | 空载损耗 No load loss (kW) | 负载损耗 Load loss (kW) | 空载电流 No load current (%) | 短路阻抗 Short-circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | | 高压 (kV) H.V | 低压 (kV) L.V | | | | | |
| 260 | D 11-260000/550 | $500/\sqrt{3}$<br>$525/\sqrt{3}$<br>$535/\sqrt{3}$<br>$550/\sqrt{3}$ | 18/20 | Ii0 | 140 | 460 | 0.15 | 14 |
| 380 | D 11-380000/550 | | 24/27 | | 186 | 610 | 0.15 | 16或18 |
| 400 | D 11-400000/550 | | | | 193 | 633 | 0.15 | |
| 410 | D 11-410000/550 | | | | 197 | 645 | 0.15 | |
| 484 | D 11-484000/550 | | | | 223 | 730 | 0.15 | |

说明：钱江电气可为用户特殊设计技术参数不同于上表的产品， 重量及外形尺寸以用户最终确认为准。
Notes: Specification different from above listed product is available, weight and dimensions are subject to final user confirmation





## 产品应用领域
## Applications

目前，35kV变压器一般适用于线路的配电变压器，110kV~550kV变压器适用于输电线路的变电工程中，可作为升压变压器或降压变压器，同时也有许多大型用电企业，选用高电压变压器作为用户变压器，使得该系列变压器应用领域也更加宽阔，如各类发电工程，铁路工程，大型企业的电气用电工程等等。

35kV transformer is generally applicable to the distribution line at present, the 110kV~550kV transformer is suitable for the transmission line project, it can be used as a step-up transformer or a step-down transformer, there are also many large power enterprises, which use high voltage transformers as aux transformers, which makes the application field of this transformer much wider, such as various power generation projects, railway engineering, electrical power engineering for large enterprises and so on.