⚠ 此样本资料由浙江顺通电气有限公司印制，仅用于说明本系列产品的相关信息。顺通电气设备可能因技术升级或采用更新的生产工艺而改进本手册有关内容，或对本手册的印刷错误及不准确的信息进行必要的改进和更改，恕不另行通知。商家订货时请随时联系本公司技术部，以证实相关信息。
We reserve the right to make technical changes or modify the contens of this document without prior notice. All the agreed particulars shall prevail. All Right Reserved.

采用环保纸印刷
Use of environmentalSN friendSN printing paper

© 浙江顺通电气有限公司版权所有
ZHEJIANG SHUNTONG ELECTRIC CO., LTD. All Right Reserved

鼎岳传媒 企业策划本节律 Tel:180 5833 6622

SNTOOM®
浙江顺通电气有限公司
ZHEJIANG SHUNTONG ELECTRIC CO., LTD.
地址：浙江省乐清市柳市上游工业区
电话：86-577-6172 1053　　网址：www.sntoom.com
传真：86-577-5684 8069　　邮箱：2850382030@qq.com

扫描浏览电子样本

SNTOOM®

SNTOOM

油式变压器 | 干式变压器 | 箱式变电站 | 电缆分支箱
Oil-type transformer | Dry-type transformer | Box-type substation | Cable branch box

# 产品选型手册
# PRODUCT SELECTION GUIDE

自主创新 科学发展 以人为本
Independent innovation, scientific development, people-oriented

浙江顺通电气有限公司
ZHEJIANG SHUNTONG ELECTRIC CO., LTD.

# 企业简介
## COMPANY PROFILES

浙江顺通电气有限公司是集科研、生产、经营、国际贸易于一体的大型公司。公司在上海、温州都分别设有生产基地，总部坐落于浙江乐清柳市上游工业区。

顺通电气专业生产输配电设备、高低压电气元件，是国内强势的输配电设备生产基地之一。公司产品由中国人民保险公司质量承保，一直致力于为电力、冶金、铁路、港口、石化、电站、建筑等行业提供产品和服务。产品还远销欧美、中东等 20 多个国家和地区。

公司以推动电气行业发展，改进时价值为己任，发扬 " 共创、共享、共发展 " 的企业精神，坚持自主创新、科学发展，以 " 市场化、品牌化、科技化、人交化 " 的发展思路，努力构建 " 以人为本，用心服务 " 的企业文化。

Zhejiang Shuntong Electric Co., Ltd. is a large-scale company integrating scientific research, production, management and international trade. The company has production bases in Shanghai and Wenzhou, and its headquarter is located in the upstream industrial zone in Liushi, Yueqing, Zhejiang.

Shuntong Electric specializes in the production of power transmission and distribution equipment, high and low voltage electrical components, and is one of the strong domestic power transmission and distribution equipment production bases. The company's products are underwritten by the People's Insurance Company of China, which is directly committed to providing products and services for the electric power, metallurgy, railway, port, petrochemical, power station, construction and other industries. The products are also exported to more than 20 countries and regions such as Europe, America and the Middle East.

The company takes the development of the electrical industry and the value of improvement as its own responsibility, carries forward the corporate spirit of "co-creation, sharing, and common development", insists on independent innovation, scientific development, and "marketization, branding, technology, and personalization" Develop ideas and strive to build a corporate culture of "people-oriented and dedicated service".





# 生产设备

## PRODUCTION EQUIPMENT

先进的生产设备、科学的生产工艺、严格的质量体系以及苛刻的原材料采购系统，保证了顺通电气的产品质量一直处于行业领先地位。我们不仅保证为您提供性价比优秀，齐全而高品质的产品，更为您带来节能环保的用电环境，因为顺通电气的产品完全符合国家质量、节能、安全和环保标准，部分产品的品质甚至优于欧洲同类产品的品质。

Advanced production equipment, scientific production technology, strict quality system and demanding raw material procurement system ensure that the product quality of Shuntong Electric has always been in the leading position in the industry. We not only guarantee to provide you with excellent cost-effective, complete and high-quality products, but also bring you an energy-saving and environmentally friendly electricity environment, because the products of Shuntong Electric fully meet the national quality, energy saving, safety and environmental protection standards. The quality of some products is even better than that of similar products in Europe.











SNTOOM®

严格的监测是产品质量的保证。不让一点瑕疵出现，不让质量问题损害顺通的品牌是我们的宗旨。

我们建立了一整套合理的、有序的监测程序，在“我们追求 0 故障”思想的指导下，顺通绝不让一件不合格产品出厂。

我们相信这既是对客户负责，更是对自己负责。

Strict monitoring is the guarantee of product quality. It is our aim not to let any defects appear, and to prevent quality problems from damaging the Shuntong brand.

We have established a set of reasonable and orderly monitoring procedures. Under the guidance of the idea of "we pursue zero failure", Shuntong will never let a substandard product leave the factory.

We believe this is not only responsible to our customers, but also to ourselves.






# 目录 CONTENTS


## 干式变压器系列
## Dry-type transformer series

树脂绝缘干式变压器 Resin Dry Type Transformers 01
SCB13 型 6~10kV 环氧树脂浇注干式配电变压器 Epoxy Resin Cast Dry-Type Distribution Transformers 05
SCB11 型 6~10kV 环氧树脂浇注干式配电变压器 Epoxy Resin Cast Dry-Type Distribution Transformers 06
SCB11 型 20kV 环氧树脂浇注干式配电变压器 Epoxy Resin Cast Dry-Type Distribution Transformers 07
SCZ(B)11 型 35kV 环氧树脂浇注干式配电变压器 Epoxy Resin Cast Dry-Type Distribution Transformers 08
SCB10 型 6~10kV 环氧树脂浇注干式配电变压器 Epoxy Resin Cast Dry-Type Distribution Transformers 09
SCB10 型 20kV 环氧树脂浇注干式配电变压器 Epoxy Resin Cast Dry-Type Distribution Transformers 10
SCZ(B)10 型 35kV 环氧树脂浇注干式配电变压器 Epoxy Resin Cast Dry-Type Distribution Transformers 11
SGB10(11) 型 6~10kV 环保型干式变压器 Eco-friendly Dry-Type Transformer 12
矿用干式变压器 Mine Dry-Type Transformer 15

## 油浸式变压器系列
## Oil-Immersed Distribution Transformers

S13-M 型 6~10kV 油浸式配电变压器 Oil-Immersed Distribution Transformers 17
S13-M 型 20kV 油浸式配电变压器 Oil-Immersed Distribution Transformers 19
S11-M 型 6~10kV 油浸式配电变压器 Oil-immersed distribution transformers 20
三相双绕组无励磁调压配电变压器 3-phase duplex winding non-excited tap-changing distribution transformer 20
S13 型 35kV 油浸式配电变压器 Oil-Immersed Distribution Transformers 21
D11 单相柱上式油浸式电力变压器 Single Phase Column Type On Oil-Immersed Power Transformer 24

## 高过载配电变压器
## High Overload Distribution Transformers

高过载配电变压器 High Overload Distribution Transformers 26

## 有载调容变压器
## On-load capacity regulating transformer

S11-M.ZT 型 10kV 有载调容变压器 on-load capacity regulating transformer 28
S13-M.ZT 型 10kV 有载调容变压器 on-load capacity regulating transformer 29

## 预装式箱式变电站系列
## Prefabricated substation series

YB □ -12/0.4 户外预装式变电站 ( 欧式 )Outdoor Prefabricated Substation (European) 30
ZGS □ -12/0.4(F-R) 预装式箱式变电站 ( 美式 )Prefabricated Substation (American) 33

## 欧式电缆分接箱
## European Cable Distribution Boxes

DFW-12kV 欧式电缆分接箱 European Cable Distribution Boxes 36

## 矿用隔爆型移动变电站
## Explosion-Proof Mobile Substation For Mine

矿用隔爆型移动变电站 Explosion-Proof Mobile Substation For Mine 39

## 矿用变压器系列
## Mine transformer series

矿用隔爆型干式变压器 Flameproof Dry-Type Transformer For Mine 42
三相油浸式矿用电力变压器 Three-Phase Oil-Immersed Mine Power Transformer 45




SNTOOM

# 树脂绝缘干式变压器
RESIN DRY TYPE TRANSFORMERS



## 产品概述
## Product Overview

树脂绝缘干式变压器安全,难燃防火,无污染,可直接安装在负荷中心,免维护,安装简便,综合运行成本低、损耗低、防潮性能好，可在 100% 湿度下正常运行，停运后不经预干燥即可投入运行。局部放电量低、噪音小，散热能力强，强迫风冷条件下可以 120% 额定负载运行。配备有完善的温度保护控制系统，为变压器安全运行提供可靠保障，可靠性高。据对已经投入运行的 10000 多台产品的运行研究，产品的可靠性指标达到国际先进水平。

It is safe, non-pollute,and flame proof, which can be installed directly on the load center with the merits of free maintenance, easy installation, low combined operationcost， low loss and excellent humidity resistance. The transformer can be operated normally under 100% humidity and put into motion without dry in advance when out of use It shares the properties of low partial electricity local discharge, low noise and large heat dispel capability, it can be operated with the rated load of 120% under the forced air cooling conditions. With perfect temperature protectcontrol system to ensure safty operation of the transformer Referring to the operation research of10 thousand transformers have been putto use, their reliability norm have reached advanced international standard.

## 产品特点
## Product Features

低损耗、运行成本低，节能效果明显；
阻燃，防火、防爆、无污染；
防潮性能好、散热能力强；
局放低、噪音小、免维护；
机械强度高、抗短路能力强、寿命长；

Low Loss, Low Operating Cost, Energy-saving Effect Is Obvious;
Flame, Fire, Explosion, Pollution-free;
Moisture Performance, Heat Dissipation Ability;
Board Lowered, Noise, Maintenance-free;
High Mechanical Strength, Resistance To Short-circuit Capability, Long Life

## 使用环境
## Use Environment

环境温度
- 最高气温 +40℃；
- 最低气温 −5℃；
- 最热月平均温度 +30℃；
- 最热年平均温度 +20℃；

海拔不超过 1000m
电源电压的波形近似于正弦波
三相电源电源电压应大致对称
安装环境无明显的污移
户内使用

Ambient temperature
- Highest air temperature +40℃；
- Lowest air temperature −5℃；
- Hottest monthly average temperature +30℃；
- Hottest yearly average temperature +20℃ The height above the sea level is below 1000m；

The power supply voltage's cave is similar to sine wave
Three−phase power supply voltage is approximately symmetrical
Installation without evidence filth.
Service indoor.

## 铁芯
## Iron Core

铁芯采用优质取向冷轧硅钢片材料制造 ,45° 全斜接缝结构，心柱采用绝缘带绑扎，铁芯表面采用绝缘树脂漆密封以防潮防锈，夹件及紧固件经表面处理以防止锈蚀。

此外，本公司还开发了多阶步叠铁芯工艺，铁芯由剪切线自动堆栈，铁芯成型采用不叠上铁轭方案，有效地降低了空载损耗、空载损耗、空载电流和铁芯噪音。

Core alignment with high−quality cold−rolled silicon steel material, 45° miter joints structure, stem with insulation tape binding, the core surface is sealed with insulating resin paint rust proof, clamps and fasteners surface treated with prevent corrosion.

In addition, the company also developed a multi−stage step−stack core technology, the core stack automatically by the shear line, forming the core does not use the stack of yoke program, effectively reducing the load loss, load loss, no−load current and the core noise.





## 低压箔式线圈
## LV Foil Coils

对于低电压、大电流线圈，其短路时的短路应力较大，同时低压匝数较少，低压电流越大采用线绕型式其安匝不平稳问题越突出，散热问题也需着重考虑，此时低压采用箔式绕组可较好解决上述问题，首先箔式产品不存在轴向匝数和轴向绕制螺旋角，高低压绕组安匝平衡，短路时变压器轴向应力较小，其次由于其绝缘较薄，工艺上又可容易设置多层风道，散热问题也较好解决。我厂低压箔式线圈是 STOLLBERG 公司生产的自动箔式绕线机上自动绕制，内部焊接在绕线机上采用氩气保护焊接，精度高，焊接电阻小，无外部焊接过程。绕组层间采用 DMD 绝缘，绕制完毕后端部用树脂密封固化。

For low voltage, high current coil, short circuit stress short−circuit its larger, while less Low Voltage turns, the greater the use of low−voltage electric current ampere−turns wound type whose more prominent issue is not stable, heat issues also need to focus on to consider, at this time use low−voltage foil winding can better solve the problem, first of all there is no axial foil product axially winding turns and a helix angle, high and low voltage winding ampere−turns balance, axial stress is small transformer short circuit,Second, because the insulation is thin, the process can be easily set up multi−duct, cooling problems are better solved. I plant low−voltage foil coils are produced on STOLLBERG automatic foil winding machine automatic winding,Internal welding using the winding machine argon arc welding, high precision, small resistance welding, no external welding process. DMD insulation layer using inter−winding, winding complete rear end portion sealed with a resin cured.

## 高压浇注线圈
## HV Casting Coils

- 主要材料和特性：

线圈采用 F 级绝缘的铜导线作导体，玻璃纤维与环氧树脂复合材料作绝缘，其膨胀系数与铜导体相近，具有良好的抗冲击、抗温度变化、抗裂性能。玻璃纤维和环氧树脂所有组成成份都具有自熄性，不会持续燃烧，也不会产生有毒气体和污染环境。环氧树脂具有良好的绝缘特性，特别适合制作高电压等级的线圈。

- 制造工艺：

线圈在高精度绕线机上绕制。绕制时在线圈内外层铺敷玻璃纤维，变压器容量较大时设计有通风道。线圈绕制完毕后进行真空干燥。整个浇注及固化过程按照工艺部门通过计算机网络传输至浇注控制终端的工艺曲线完成。所有过程可在计算机终端随时监视并由计算机根据情况自动调整。精密的制造过程使线圈无气泡、空穴。

- Main material and characteristics:

Class F coil insulated copper wire as conductor, glass fiber and epoxy resin composite materials for insulation, its coefficient of expansion similar to the copper conductor, with good impact resistance, temperature changes, crack resistance. Glass fiber and epoxy resin constituent all have self−extinguishing, it does not continue to burn, it does not produce toxic gases and pollute the environment. Epoxy resin has good insulating properties, particularly suitable for the production of high−voltage coil level.

- Manufacturing process:

The windings wound on the high−accuracy winding machine, when windingpave cast grass fibre around the external and internal of the windings, there be armed air passage for transformer of large capacity, Then dry it invacuum.The whole casting and olidifying process is performed according to the process curve of casting control terminal, which transferred through computer network by process department, every process can be monitored momentarily and adjusted for the various surroundings. The precise process ensures free bubble and free hole of winding.

## 温控装置和风冷系统
## Temperature Control Device And Air Cooling System

保护外壳和对变压器作进一步的安全保护，防护等级有 IP20 Ip23 等，外壳材料有冷轧钢板，不锈钢板、铝合金板等供用户选择。

低压出线用标准母线排出线，侧出线和顶出线均可，也可以 根据用户的需求设计特殊的出现方式。

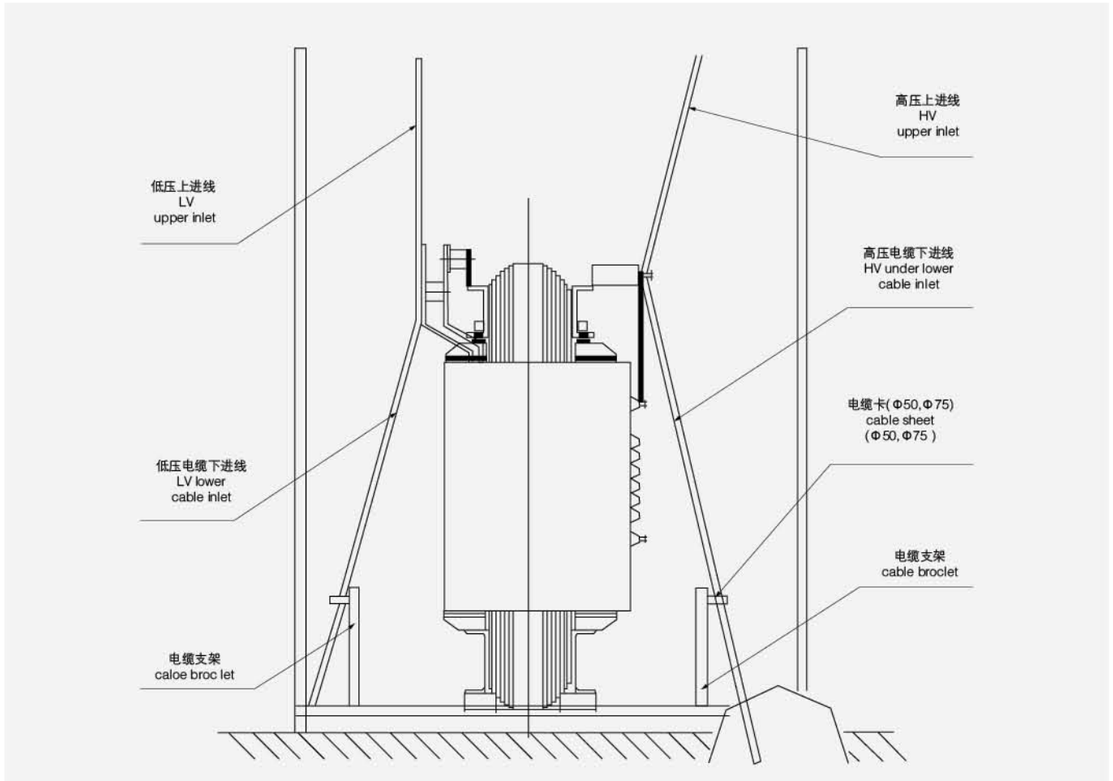
The shell makes further protection for transformer. For users option, the grade of protection has IP20、IP23, ect. and the material has sort of cold-rolled steel plates and stdainless steel plates, ect.

The low-voltage outgoing line can adopt the method of standard bus bar group outgoing line, outgoing on the transverse side and upper part as well as the very method that designed by the users.

## 进线方式示意图
## Incoming Line Diagram

配电变压器可根据不同的接口形式制造常规出线、标准封闭母线出线和标准侧出线，也可根据用户要求设计特殊出线方式。

Routine lead, standard closed busbar lead type and standard side lead for the distributiontransformer, with special lead way produced to meet the customer's demand.








## 型号含义
## Type Meaning

SC (B) 13 - XXXX / **

- 额定高压电压 ( 按额定值填入 )
  Rated HV (filling with the rated value)
- 额定容量 (kVA) Rated Capacity
- 设计序号 Design NO.
- 低压“箔”式线圈 LV Foil winding
- 三相固体成型 ( 环氧浇注 )Three-phase solid molding (Epoxy casting)

## 产品标准
## Product standards

GB/T 10228-2008　GB1094.11-2007
额定高压 Rated HV：10(10.5,11, 6,6.3, 6.6)kV
额定低压 Rated LV：0.4kV
分接范围 Tap connection range：
无励磁调压 Non-exciting regulation(±5%,±2×2.5% )
有载调压 On-load regulation(±4x2.5%)
联结组别 Vector group：D yn11or Y yn0
绝缘水平 Insulation level ：LI75AC35/AC5

## 6~10kV 环氧树脂浇注干式配电变压器
## 6~10kV epoxy resin cast dry-type distribution transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current(%) | 短路阻抗 Short circuit impedance(%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range(% ) | 低压 Low Voltage (kV) | | | | | |
| 30 | 6<br>6.6<br>6.6<br>10<br>10.5<br>11 | ±5%<br>±2×2.5% | 0.4 | Dyn11 | 130 | 710 | 2.6 | 4 |
| 50 | | | | | 190 | 1000 | 2.2 | 4 |
| 80 | | | | | 260 | 1380 | 2.2 | 4 |
| 100 | | | | | 280 | 1570 | 2 | 4 |
| 125 | | | | | 330 | 1850 | 1.8 | 4 |
| 160 | | | | | 380 | 2130 | 1.8 | 4 |
| 200 | | | | | 435 | 2530 | 1.6 | 4 |
| 250 | | | | | 505 | 2760 | 1.6 | 4 |
| 315 | | | | | 615 | 3470 | 1.4 | 4 |
| 400 | | | | | 685 | 3990 | 1.4 | 4 |
| 500 | | | | | 810 | 4880 | 1.4 | 4 |
| 630 | | | | | 940 | 5880 | 1.2 | 4 |
| 630 | | | | | 910 | 5960 | 1.2 | 6 |
| 800 | | | | | 1065 | 6960 | 1.2 | 6 |
| 1000 | | | | | 1240 | 8130 | 1.1 | 6 |
| 1250 | | | | | 1460 | 9690 | 1.1 | 6 |
| 1600 | | | | | 1715 | 11730 | 1.1 | 6 |
| 2000 | | | | | 2135 | 14450 | 1.0 | 6 |
| 2500 | | | | | 2520 | 17170 | 1.0 | 6 |

注：1、表中斜线上方的负载损耗适用于 Dyn11 联接组，斜线下方的负载损耗值适用于 Yyn0 联接组。　2、其它容量的产品性能参数，由用户与制造厂协商确定。
Note: 1, load loss slash table above apply to join the group Dyn11 load loss slash Yyn0 below values apply to join the group.
2, other capacity product performance parameters, determined by the user in consultation with the manufacturer.

## 型号含义
## Type Meaning




## 产品标准
## Product standards

GB/T 10228–2008　GB1094.11–2007
额定高压 Rated HV：10(10.5,11, 6,6.3, 6.6)kV
额定低压 Rated LV：0.4kV
分接范围 Tap connection range：
无励磁调压 Non–exciting regulation(±5%,±2×2.5% )
有载调压 On–load regulation(±4x2.5%)
联结组别 Vector group：D yn11or Y yn0
绝缘水平 Insulation level ：LI75AC35/AC5

## 6KV、10KV 级 11 型干式无励磁调压配电变压器
## 6KV, 10KV class 11 dry type non-excitation voltage regulating distribution transformer

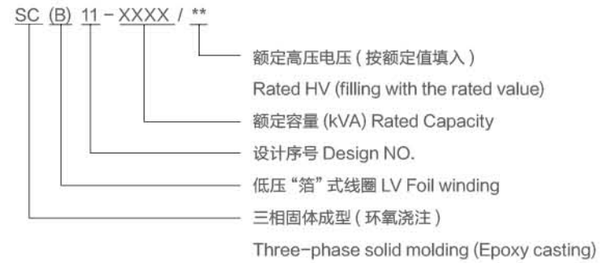
| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Range of voltage and tap | | | 联结组标号 Vector Group | 空载损耗 No–load loss(W) | 负载损耗 Load loss (W) | 空载电流 No–load current(%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High–voltage Tap Range(% ) | 低压 Low Voltage (kV) | | | | | |
| 30 | 6<br>6.6<br>6.6<br>10<br>10.5<br>11 | ±5%<br>±2×2.5% | 0.4 | Dyn11 | 170 | 710 | 2.6 | 4 |
| 50 | | | | | 240 | 1000 | 2.2 | 4 |
| 80 | | | | | 330 | 1380 | 2.2 | 4 |
| 100 | | | | | 360 | 1570 | 2 | 4 |
| 125 | | | | | 420 | 1850 | 1.8 | 4 |
| 160 | | | | | 490 | 2130 | 1.8 | 4 |
| 200 | | | | | 560 | 2530 | 1.6 | 4 |
| 250 | | | | | 650 | 2760 | 1.6 | 4 |
| 315 | | | | | 790 | 3470 | 1.4 | 4 |
| 400 | | | | | 880 | 3990 | 1.4 | 4 |
| 500 | | | | | 1045 | 4880 | 1.4 | 4 |
| 630 | | | | | 1210 | 5880 | 1.2 | 4 |
| 630 | | | | | 1170 | 5960 | 1.2 | 6 |
| 800 | | | | | 1370 | 6960 | 1.2 | 6 |
| 1000 | | | | | 1590 | 8130 | 1.1 | 6 |
| 1250 | | | | | 1880 | 9690 | 1.1 | 6 |
| 1600 | | | | | 2205 | 11730 | 1.1 | 6 |
| 2000 | | | | | 2745 | 14450 | 1.0 | 6 |
| 2500 | | | | | 3240 | 17170 | 1.0 | 6 |

注：有载调压系列变压器仅对以下两项数据作调整：1、重量增加 100kg; 2、有载开关布置在变压的侧面 a 增加 650mm 或正面 b 增加 750mm;
Note: On–load regulation series transformer regulates the two data items as follows: 1. Weight increase 100kg;
2. Transformation flank a increase 650mm or face b increase 750mm assigned by on–load switch;





## 型号含义
## Type Meaning




## 产品标准
## Product standards

GB/T 10228–2008　GB1094.11–2007
额定高压 Rated HV：20(22、24)kV
额定低压 Rated LV：0.4kV
分接范围 Tap connection range：
无励磁调压 Non–exciting regulation(±5%,±2×2.5% )
有载调压 On–load regulation(±4x2.5%)
联结组别 Vector group：D yn11or Y yn0
绝缘水平 Insulation level ：LI125AC50/AC5

## 20kV 环氧树脂浇注干式配电变压器
## 20kV epoxy resin cast dry-type distribution transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No–load loss (W) | 负载损耗 Load loss (W) | 空载电流 No–load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High Voltage tap range (% ) | 低压 Low Voltage (kV) | | | | | |
| 50 | 20<br>24<br>22 | ±5%<br>±2*2.5% | 0.4 | Dyn11<br>Yyn0 | 340 | 1300 | 2.2 | 6 |
| 100 | | | | | 540 | 2100 | 2 | 6 |
| 160 | | | | | 675 | 2600 | 1.8 | 6 |
| 200 | | | | | 740 | 3100 | 1.6 | 6 |
| 250 | | | | | 845 | 3600 | 1.6 | 6 |
| 315 | | | | | 970 | 4300 | 1.4 | 6 |
| 400 | | | | | 1150 | 5100 | 1.4 | 6 |
| 500 | | | | | 1350 | 6100 | 1.4 | 6 |
| 630 | | | | | 1530 | 7200 | 1.2 | 6 |
| 800 | | | | | 1755 | 8700 | 1.2 | 6 |
| 1000 | | | | | 2070 | 10300 | 1.1 | 6 |
| 1250 | | | | | 2385 | 12150 | 1.1 | 6 |
| 1600 | | | | | 2790 | 14600 | 1.1 | 6 |
| 2000 | | | | | 3240 | 17250 | 1.0 | 8 |
| 2500 | | | | | 3870 | 20400 | 1.0 | 8 |

注：1、表中斜线上方的负载损耗适用于 Dyn11 联接组，斜线下方的负载损耗值适用于 Yyn0 联接组。　2、其它容量的产品性能参数，由用户与制造厂协商确定。
Note: 1, load loss slash table above apply to join the group Dyn11 load loss slash Yyn0 below values apply to join the group.
2, other capacity product performance parameters, determined by the user in consultation with the manufacturer.

## 35kV 级无励磁调压配电变压器
## 35kv non-excited tap-changing transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current(%) | 短路阻抗 Short circuit impedance(%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High Voltage tap range (%) | 低压 Low Voltage (kV) | | | | | |
| 800 | 35-38.5 | ±5 ±2×25% | 0.4 | Dyn11 Yyn0 | 2000 | 9900 | 1.1 | 6.0 |
| 1000 | | | | | 2375 | 11500 | 1.1 | 6.0 |
| 1250 | | | | | 2785 | 13600 | 1.0 | 6.0 |
| 1600 | | | | | 3280 | 16300 | 1.0 | 6.0 |
| 2000 | | | | | 3760 | 19200 | 0.9 | 7.0 |
| 2500 | | | | | 4320 | 23000 | 0.9 | 7.0 |
| 3150 | | | | | 5360 | 25800 | 0.8 | 8.0 |
| 4000 | | | | | 6240 | 31000 | 0.8 | 8.0 |
| 5000 | | | | | 7440 | 36800 | 0.7 | 8.0 |
| 6300 | | | | | 8800 | 43000 | 0.7 | 8.0 |
| 8000 | | | | | 10080 | 48500 | 0.6 | 9.0 |
| 10000 | | | | | 11520 | 58500 | 0.6 | 9.0 |
| 12500 | | | | | 14000 | 68000 | 0.5 | 9.0 |
| 16000 | | | | | 17200 | 80000 | 0.5 | 9.0 |
| 20000 | | | | | 20400 | 90000 | 0.4 | 10.0 |

## 35kV 级有载调压电力变压器
## 35kv on-load tap-changing power transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | SC(ZB)9 | | SC(ZB)11 | | 空载电流 No-load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High Voltage tap range (%) | 低压 Low Voltage (kV) | | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | | |
| 2000 | 35-38.5 | ±4×2.5% | 6 6.3 10 10.5 11 | Dyn11 Yd11 | 5000 | 17470 | 4500 | 16590 | 0.8 | 7.0 |
| 2500 | | | | | 5800 | 20790 | 5220 | 19750 | 0.8 | 7.0 |
| 3150 | | | | | 7000 | 23410 | 6300 | 22240 | 0.7 | 7.0 |
| 4000 | | | | | 8200 | 28030 | 7380 | 26630 | 0.7 | 7.0 |
| 5000 | | | | | 9700 | 33190 | 8730 | 31530 | 0.6 | 8.0 |
| 6300 | | | | | 11500 | 38430 | 10350 | 36510 | 0.6 | 8.0 |
| 8000 | | | | | 13200 | 43670 | 11880 | 41480 | 0.5 | 9.0 |
| 10000 | | | | | 15100 | 52580 | 13590 | 49950 | 0.5 | 9.0 |
| 12500 | | | | | 19300 | 61130 | 16470 | 58080 | 0.5 | 9.0 |
| 16000 | | | | | 22500 | 71960 | 20250 | 68370 | 0.5 | 9.0 |
| 20000 | | | | | 26500 | 80960 | 23850 | 76910 | 0.4 | 10.0 |





## 型号含义
## Type Meaning




## 产品标准
## Product standards

GB/T 10228-2008 GB1094.11-2007
额定高压 Rated HV: 10(10.5,11, 6,6.3, 6.6)kV
额定低压 Rated LV: 0.4kV
分接范围 Tap connection range:
无励磁调压 Non-exciting regulation(±5%,±2×2.5%)
有载调压 On-load regulation(±4x2.5%)
联结组别 Vector group: D yn11or Y yn0
绝缘水平 Insulation level : LI75AC35/AC5

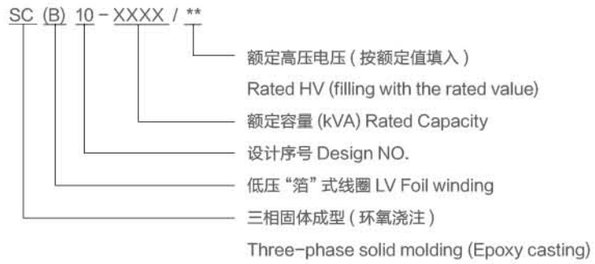
## 6~10kV 环氧树脂浇注干式配电变压器
## 6~10kV epoxy resin cast dry-type distribution transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current(%) | 短路阻抗 Short circuit impedance(%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range(%) | 低压 Low Voltage (kV) | | | | | |
| 30 | 6 6.3 6.6 10 10.5 11 | ±5% ±2×2.5% | 0.4 | Dyn11 Yyn0 | 190 | 710 | 2.6 | 4 |
| 50 | | | | | 270 | 1000 | 2.2 | 4 |
| 80 | | | | | 370 | 1380 | 2.2 | 4 |
| 100 | | | | | 400 | 1570 | 2 | 4 |
| 125 | | | | | 470 | 1850 | 1.8 | 4 |
| 160 | | | | | 540 | 2130 | 1.8 | 4 |
| 200 | | | | | 620 | 2530 | 1.6 | 4 |
| 250 | | | | | 720 | 2760 | 1.6 | 4 |
| 315 | | | | | 880 | 3470 | 1.4 | 4 |
| 400 | | | | | 980 | 3990 | 1.4 | 4 |
| 500 | | | | | 1160 | 4880 | 1.4 | 4 |
| 630 | | | | | 1340 | 5880 | 1.2 | 4 |
| 630 | | | | | 1300 | 5960 | 1.2 | 6 |
| 800 | | | | | 1520 | 6960 | 1.2 | 6 |
| 1000 | | | | | 1770 | 8130 | 1.1 | 6 |
| 1250 | | | | | 2090 | 9690 | 1.1 | 6 |
| 1600 | | | | | 2450 | 11730 | 1.1 | 6 |
| 2000 | | | | | 3050 | 14450 | 1.0 | 6 |
| 2500 | | | | | 3600 | 17170 | 1.0 | 6 |

注：1、表中斜线上方的负载损耗适用于 Dyn11 联接组，斜线下方的负载损耗值适用于 Yyn0 联接组。 2、其它容量的产品性能参数，由用户与制造厂协商确定。

Note: 1, load loss slash table above apply to join the group Dyn11 load loss slash Yyn0 below values apply to join the group.
2, other capacity product performance parameters, determined by the user in consultation with the manufacturer.

## 型号含义
## Type Meaning




## 产品标准
## Product standards

GB/T 10228-2008　GB1094.11-2007
额定高压 Rated HV：20(22、24)kV
额定低压 Rated LV：0.4kV
分接范围 Tap connection range：
无励磁调压 Non-exciting regulation(±5%,±2×2.5% )
有载调压 On-load regulation(±4x2.5%)
联结组别 Vector group：D yn11or Y yn0
绝缘水平 Insulation level：LI125AC50/AC5

## 20kV 环氧树脂浇注干式配电变压器
## 20kV epoxy resin cast dry-type distribution transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combination and Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss(W) | 空载电流 No-load current(%) | 短路阻抗 Short circuit impedance(%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range(% ) | 低压 Low Voltage (kV) | | | | | |
| 50 | 20<br>22<br>24 | ±5<br>±2×2.5% | 0.4 | Dyn11<br>Yyn0 | 305 | 1300 | 2.2 | 6 |
| 100 | | | | | 485 | 2100 | 2 | 6 |
| 160 | | | | | 605 | 2600 | 1.8 | 6 |
| 200 | | | | | 665 | 3100 | 1.6 | 6 |
| 250 | | | | | 760 | 3600 | 1.6 | 6 |
| 315 | | | | | 875 | 4300 | 1.4 | 6 |
| 400 | | | | | 1035 | 5100 | 1.4 | 6 |
| 500 | | | | | 1215 | 6100 | 1.4 | 6 |
| 630 | | | | | 1375 | 7200 | 1.2 | 6 |
| 800 | | | | | 1580 | 8700 | 1.2 | 6 |
| 1000 | | | | | 1860 | 10300 | 1.1 | 6 |
| 1250 | | | | | 2145 | 12150 | 1.1 | 6 |
| 1600 | | | | | 2510 | 14600 | 1.1 | 6 |
| 2000 | | | | | 2915 | 17250 | 1.0 | 8 |
| 2500 | | | | | 3480 | 20400 | 1.0 | 8 |





## 35kV 级无励磁调压配电变压器
## 35kv non-excited tap-changing transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group Symbol | SCB9 系列 | | SCB10 系列 | | 空载电流 No-load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High Voltage tap range (% ) | 低压 Low Voltage (kV) | | 空载损耗 No-load loss (W) | 负载损耗 Load loss (W) | 空载损耗 No-load loss (W) | 负载损耗 Load loss (W) | | |
| 800 | 35<br>38.5 | ±5<br>±2×25% | 0.4 | Dyn11<br>Yyn0 | 2500 | 9900 | 2250 | 9400 | 0.3 | 6.0 |
| 1000 | | | | | 2970 | 11500 | 2673 | 10930 | 0.24 | 6.0 |
| 1250 | | | | | 3480 | 13600 | 3132 | 12920 | 0.22 | 6.0 |
| 1600 | | | | | 4100 | 16300 | 3690 | 15490 | 0.21 | 6.0 |
| 2000 | | | | | 4700 | 19200 | 4230 | 18240 | 0.2 | 7.0 |
| 2500 | | | | | 5400 | 23000 | 4860 | 21850 | 0.19 | 7.0 |
| 3150 | | | | | 6700 | 25800 | 6030 | 24510 | 0.18 | 8.0 |
| 4000 | | | | | 7800 | 31000 | 7020 | 29450 | 0.17 | 8.0 |
| 5000 | | | | | 9300 | 36800 | 8370 | 34960 | 0.16 | 8.0 |
| 6300 | | | | | 11000 | 43000 | 9900 | 40850 | 0.16 | 8.0 |
| 8000 | | | | | 12600 | 48500 | 11340 | 46080 | 0.16 | 9.0 |
| 10000 | | | | | 14400 | 58500 | 12960 | 55580 | 0.15 | 9.0 |
| 12500 | | | | | 17500 | 68000 | 15750 | 64600 | 0.15 | 9.0 |
| 16000 | | | | | 21500 | 80000 | 19350 | 76000 | 0.14 | 9.0 |
| 20000 | | | | | 25500 | 90000 | 22950 | 85500 | 0.13 | 10.0 |

注：1、表中斜线上方的负载损耗适用于 Dyn11 联接组，斜线下方的负载损耗值适用于 Yyn0 联接组。 2、其它容量的产品性能参数，由用户与制造厂协商确定。

Note: 1, load loss slash table above apply to join the group Dyn11 load loss slash Yyn0 below values apply to join the group.
2, other capacity product performance parameters, determined by the user in consultation with the manufacturer.

## 35kV 级有载调压电力变压器
## 35kv on-load tap-changing power transformer

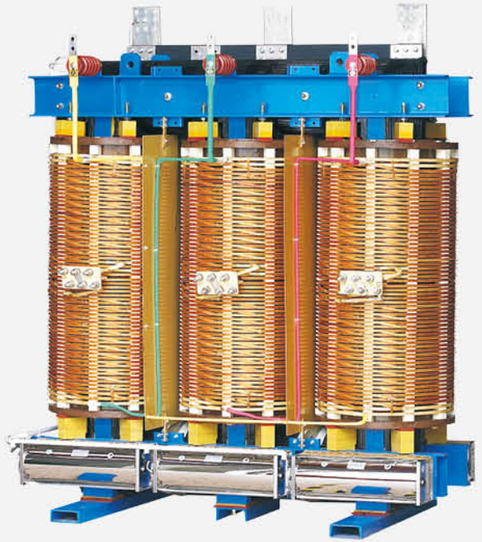
| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Range of voltage and tap | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current(%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range(% ) | 低压 Low Voltage (kV) | | | | | |
| 2000 | 35~38.5 | ±4×2.5 | 6<br>6.3<br>10<br>10.5<br>11 | Dyn11<br>Yd1 | 4250 | 20000 | 0.9 | 7.0 |
| 2500 | | | | | 4930 | 23800 | 0.9 | 7.0 |
| 3150 | | | | | 5950 | 26800 | 0.8 | 7.0 |
| 4000 | | | | | 6970 | 32100 | 0.8 | 7.0 |
| 5000 | | | | | 8230 | 38000 | 0.7 | 8.0 |
| 6300 | | | | | 9780 | 44000 | 0.7 | 8.0 |
| 8000 | | | | | 11220 | 50000 | 0.6 | 9.0 |
| 10000 | | | | | 12840 | 60200 | 0.6 | 9.0 |
| 12500 | | | | | 15560 | 70000 | 0.5 | 9.0 |
| 16000 | | | | | 19130 | 82400 | 0.5 | 9.0 |
| 20000 | | | | | 22530 | 92700 | 0.4 | 10.0 |

SNTOOM

SGB10(11)6~10kV

# 环保型干式变压器

ECO-FRIENDLY DRY-TYPE TRANSFORMER



## 产品概述
## Product overview

SGB(H)10 型 H 级绝缘干式电力变压器承受热冲击能力强，过负载能力大、难燃，防火性能高、低损耗、局部放电量小、噪声低、不产生有害气体、不污染环境、对湿度不敏感、体积小、不开裂、 维护简便。因此最适宜于防火要求高、负荷波动大以及污秽潮湿的恶劣环境中。如机场、发电厂、冶金作业、医院、高层建筑、购物中心、居民密集区以及石油化工、核电站、核潜艇等特殊环境中。

SGB (H) 10 type H-class insulation dry-type power transformers ability to withstand thermal shock, overload capacity, high flame retardant, fire resistance, low loss, low partial discharge capacity, low noise, no harmful gases, do not pollute the environment , insensitive to humidity, small, no cracking, easy to maintain. Therefore most suitable fire protection requirements high load fluctuation and dirty wet harsh environments. Such as airports, power plants, metallurgical operations, hospitals, high-rise buildings, shopping centers, densely populated areas as well as petrochemical, nuclear power plants, nuclear submarines and other special environment.

## 型号含义
## Type Meaning

S G B (H) 10(11) - □ / 10

- 高压侧电压等级 High side voltage level
- 额定容量 Rated Capacity
- 设计序号 Design No.
- 绝缘等级 Insulation Class
- 低压“箔”式线圈 Low Voltage "foil" coil
- 空气 air
- 三相 Three Phase





## 正常使用条件
## Normal Use Conditions

海拔高度：不超过 1000m；

电源电压的波形：似于正弦波；

多相电源电压的对称性：多相变压器所连接的电源电压应近似对称。

环境温度：最高气温 +40℃；最高日平均气温 +30℃；最高年平均气温 +20℃；最低气温 −30℃（适用于户内式变压器）。

Altitude: not more than 1000m;

The waveform of the power supply voltage: similar to a sine wave;

Symmetry of multi-phase power supply voltage: The power supply voltage connected to the multi-phase transformer should be approximately symmetrical.

Ambient temperature: highest temperature +40 ℃ ; highest daily average temperature +30 ℃ ; highest annual average temperature +20℃ ; lowest temperature −30℃ (applicable to indoor transformers).

## 结构特征
## Structure

SGB10(11) 系列是采用杜邦 NOMEX 纸为基础的绝缘系统，在变压器的整个使用寿命期间都保持极佳的电气性能和机械性能。NOMEX 不易老化，耐收缩及抗压缩，加上弹力特强，因此可以确保变压器即使使用数年之后，线圈仍保持结构紧密，并且能够承受短路的压力。

高标准的安全性，无可燃性树脂，无有毒气体，不助燃。

单位 kVA 的体积和重量减少

紧急过负载的能力增加

修理、维护方便

噪音低

对湿度、灰尘、污染不敏感

运行无局部放电及永无“龟裂”的可能

设计灵活，可按客户的要求设计制成所需要的任何规格。

SGB10(11) series is the use of paper-based DuPont NOMEX insulation systems, during the entire life of the transformer maintains excellent electrical and mechanical properties. NOMEX not aging, resistance to shrinkage and resistance to compression, coupled with an exceptionally strong elasticity, thus ensuring even for several years after the transformer coil remains compact, and can withstand the pressure of a short circuit.

High standards of safety, no flammable resin, no toxic gas, no combustion.

Reducing the size and weight unit kVA

Increase the capacity of the emergency overload

Repair, easy to maintain

Low noise

Humidity, insensitive to dust, pollution

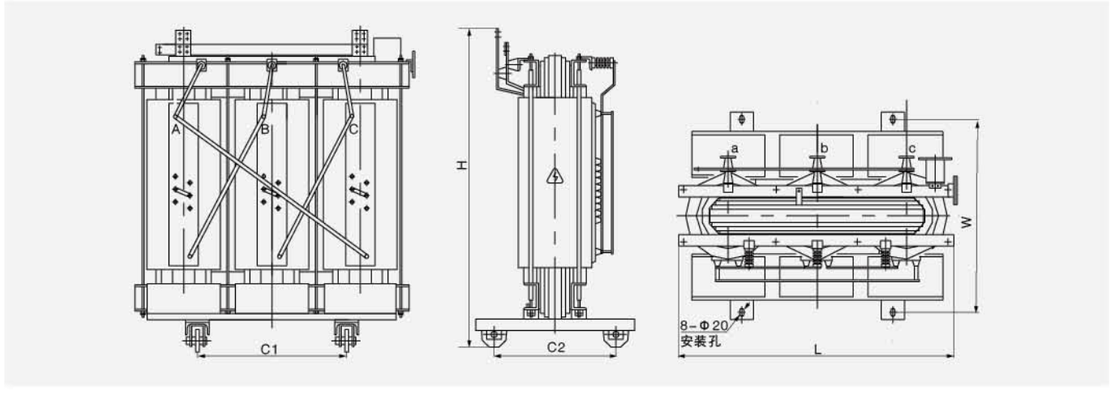
Run no partial discharge and never "crack" may

Design flexibility, customers can request the design of any specification made need.

## 主要技术参数
## Main Technical Parameter

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Range of voltage and tap | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current(%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range(%) | 低压 Low Voltage (kV) | | | | | |
| 80 | 6.3<br>6.6<br>10<br>10.5<br>11 | ±5%<br>±2×2.5% | 0.4 | Dyn11<br>Yd1 | 370 | 1750 | 2.2 | 4 |
| 100 | | | | | 400 | 2170 | 2.0 | 4 |
| 125 | | | | | 470 | 2590 | 1.8 | 4 |
| 160 | | | | | 545 | 3100 | 1.8 | 4 |
| 200 | | | | | 625 | 3970 | 1.6 | 4 |
| 250 | | | | | 720 | 4680 | 1.6 | 4 |
| 315 | | | | | 880 | 5610 | 1.4 | 4 |
| 400 | | | | | 975 | 6630 | 1.4 | 4 |
| 500 | | | | | 1160 | 7950 | 1.4 | 4 |
| 630 | | | | | 1300 | 9780 | 1.2 | 6 |
| 800 | | | | | 1520 | 11560 | 1.2 | 6 |
| 1000 | | | | | 1770 | 13350 | 1.1 | 6 |
| 1250 | | | | | 2090 | 15640 | 1.1 | 6 |
| 1600 | | | | | 2450 | 18110 | 1.1 | 6 |
| 2000 | | | | | 3320 | 21250 | 1.0 | 6 |
| 2500 | | | | | 4000 | 24740 | 1.0 | 6 |

## 外形及安装尺寸 (mm)
## Overall and installation dimensions(mm)




| 额定容量 Rated capacity (kVA) | 外形及安装尺寸 Shape and installation dimensions (mm) | | | | |
|---|---|---|---|---|---|
| | L | W | H | C1 | C2 |
| 100 | 1060 | 750 | 880 | 660 | 660 |
| 160 | 1140 | 750 | 1050 | 660 | 660 |
| 200 | 1180 | 750 | 1150 | 660 | 660 |
| 250 | 1200 | 750 | 1200 | 660 | 660 |
| 315 | 1240 | 750 | 1210 | 660 | 660 |
| 400 | 1350 | 900 | 1240 | 660 | 820 |
| 500 | 1360 | 900 | 1320 | 820 | 820 |
| 630 | 1440 | 900 | 1350 | 820 | 820 |
| 800 | 1500 | 900 | 1440 | 820 | 820 |
| 1000 | 1550 | 900 | 1500 | 820 | 820 |
| 1250 | 1600 | 1100 | 1650 | 820 | 820 |
| 1600 | 1700 | 1100 | 1750 | 820 | 820 |
| 2000 | 1750 | 1250 | 1800 | 1070 | 1070 |
| 2500 | 1800 | 1250 | 1950 | 1070 | 1070 |



SNTOOM

# 矿用干式变压器
MINE DRY-TYPE TRANSFORMER



## 产品概述
## Product overview

矿用干式变压器 KSG 系列产品为干式非防爆产品，用于金属和非金属矿山不需要防爆要求的场所。比如：铁矿、铜矿、金矿等各种矿山、高铁、高速公路、隧道等。

变压器 KBSG、KBSGZY 系列防爆产品适用于有甲烷混合气体和煤尘，且有爆炸危险的矿井中以及公路铁路隧道，为各种动力设备和各种用电装置提供电源。产品过载能力强，结构紧凑、空载损耗和空载电流低。矿用隔爆型变压器 KBSG 和高低压开关配套组成矿用隔爆型移动变电站 KBSGZY 具有失压、过载、短路、断路、漏电、温度等保护作用。

The KSG series of mine dry-type transformers are dry-type non-explosion-proof products, which are used in metal and non-metal mines where explosion-proof requirements are not required. For example: various mines such as iron ore, copper mine, gold mine, high-speed railway, highway, tunnel, etc.

Transformer KBSG, KBSGZY series of explosion-proof products are suitable for mines with methane mixed gas and coal dust, and explosion hazard, as well as highway and railway tunnels, to provide power for various power equipment and various electrical devices. The product has strong overload capacity, compact structure, low no-load loss and low no-load current. The mine explosion-proof transformer KBSG and the high and low voltage switch form a complete set of mine explosion-proof mobile substation KBSGZY, which has protective functions such as loss of voltage, overload, short circuit, open circuit, leakage, and temperature.

## 型号含义
## Type Meaning




## 主要技术参数
## Main Technical Parameter

| 型号 Model | 额定电压 Rated voltage 高压 High Voltage (kV) | 额定电压 Rated voltage 低压 Low Voltage (kV) | 联结组标号 Vector Group | 空载损耗 W No-load loss | 负载损耗 (120℃) W Load loss | 空载电流 % No-load current | 短路阻抗 Uz% Short circuit impedance |
|---|---|---|---|---|---|---|---|
| KSG-100KVA | 10KV 或 6KV 分接范围 ±2×2.5% | 0.4KV 或 0.69KV | Dyn11 Dy11 YD11 | 400 | 1570 | 1.8 | 4 |
| KSG-200KVA | | | | 620 | 2530 | 1.1 | 4 |
| KSG-250KVA | | | | 720 | 2760 | 1.4 | 4 |
| KSG-315KVA | | | | 880 | 3470 | 1.2 | 4 |
| KSG-400KVA | | | | 980 | 3990 | 1.2 | 4 |
| KSG-500KVA | | | | 1160 | 4880 | 1.2 | 4 |
| KSG-630KVA | | | | 1300 | 5960 | 1.0 | 6 |
| KSG-800KVA | | | | 1520 | 6960 | 1.0 | 6 |
| KSG-1000KVA | | | | 1770 | 8130 | 1.0 | 6 |
| KSG-1250KVA | | | | 2090 | 9690 | 1.0 | 6 |

注：负载损耗值和短路阻抗值为 F 级绝缘材料参考温度 120℃时数值。

Note: The load loss value and short-circuit resistance value are the values when the reference temperature of the F-class insulating material is 120℃ .

| 型号 Model | 额定容量 kVA Rated capacity | 外形尺寸 Dimensions L×W×H×(mm) | 变压器重量 Kg Transformer weight |
|---|---|---|---|
| KSG | 100 | 1750×1500×1500 | 1400 |
| KSG | 200 | 1750×1500×1500 | 1450 |
| KSG | 250 | 1750×1500×1500 | 1500 |
| KSG | 315 | 1750×1500×1500 | 1800 |
| KSG | 400 | 1750×1500×1600 | 1950 |
| KSG | 500 | 1750×1500×1600 | 2100 |
| KSG | 630 | 1750×1500×1750 | 2300 |
| KSG | 800 | 1750×1500×1750 | 2500 |
| KSG | 1000 | 1900×1500×1970 | 3000 |
| KSG | 1250 | 2000×1500×1970 | 3600 |



SNTOOM

# 油浸式配电变压器
OIL-IMMERSED DISTRIBUTION TRANSFORMERS



## 产品概述
## Product overview

S11(13)-M-30~2000/10 型全密封油浸式变压器适用于交流 50Hz、额定工作电压 10kV 及以下的电力系统中，作为石油、冶金、化工、纺织、轻工等企业及粉尘较大场所的配电变压器。

S11(13)-M-30~2000/10-type full-sealed oil-immersed transformers for AC 50Hz, rated working voltage of 10kV and below the power system, as petroleum, metallurgy, chemical, textile, light industry and other large enterprises and dust place the distribution transformers.

## 型号含义
## Type Meaning




## 正常使用条件
## Normal Use Conditions

- 安装高度：海拔不超过 1000m；
- 环境温度：-40℃ ~+40℃
- Installation Altitude: not exceed 1000m;
- ambient temperature: -40 ℃ ~ +40 ℃

## 铁芯
## Iron Core

铁芯选用高导磁晶粒取向冷轧硅钢片。铁芯为新式铁芯，全斜接缝迭积式铁芯，其铁芯柱为多级阶梯的圆截面，铁轭与铁芯为等截面。

Core is made of high permeability grain oriented cold-rolled silicon steel. The core of the new core, miter joints convolution type iron core, its legs of circular cross section multi-step, the yoke and the core of constant section.

## 绕组
## Winding

绕组采用瓦楞油道，不浸漆工艺，紧缩带绑扎；绕组均为同心式线圈：高压绕组具有对应分接电压要求的抽头，引至分接开关上，开关安装在箱盖上、且需切断电源后方可变换分接电压。

Windings corrugated oil passage, not dipping process, tightening belt lashing; concentric coil windings are: high voltage winding has a corresponding tap tap voltage requirements, lead to a tap on the switch, the switch is mounted on the cover, and the need to cut After the power supply before converting voltage tap.

## 安全保护装置
## Security devices

30~2000kVA 变压器装有压力释放阀；

根据用户需求可安装具有报警和跳闸端子的气体继电器；

30~2000kVA transformer equipped with a pressure release valve;

Can be installed with alarm and trip relays gas terminals according to user needs;

## 油温测量装置
## oil temperature measurement device

变压器均装有玻璃温度计的管座，管座设在油箱顶部，伸入油内 120±10mm；

1000~2000kVA 变压器装有户外式信号温度计；

Headers transformers are equipped with a glass thermometer, tube socket located on the top of the tank, inserted into the oil 120±10mm;

1000~2000kVA transformer type equipped with outdoor thermometer signal;

## 变压器油箱
## Transformer tank

变压器油箱由波纹壁构成，表面采用粉尘

喷涂、漆膜牢固。波纹散热片不但具有冷却功能，而且具有“呼吸”功能，波纹散热片的弹性可补偿因温度升降而引起的变压器油体积的变化。因此全密封变压器没有储油柜，降低了变压器整体高度；

变压器在封装时采用真空注油工艺，完全去除了变压器中的潮气，变压器油不与空气接触。有效地防止氧气和水分侵入变压器而导致变压器绝缘性能下降和变压器油老化的可能,因此不定期进行油样试验;

Constituted by a corrugated wall transformer tank, the surface dust

Spray, paint firm. Corrugated fins not only has a cooling function, but also changes in the volume of transformer oil "breathe" elasticity, corrugated fins may compensate for temperature caused by lifting. Therefore, there is no conservator sealed transformer, the transformer reduces the overall height;

Transformer vacuum oiling process at the time of packaging, completely removes moisture transformers, transformer oil is not in contact with air. Effectively prevent oxygen and moisture intrusion caused by transformer insulation transformers and transformer oil aging performance possible, so from time to time oil sample test;





## S13-M 型 6~10kV 油浸式配电变压器
## S13-M 型 6~10kV Oil-immersed distribution transformers

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range (%) | 低压 Low Voltage (kV) | | | | | |
| 30 | 6<br>6.3<br>6.6<br>10<br>10.5<br>11 | ±5<br>±2×2.5% | 0.4 | | 80 | 630/600 | 1.8 | 4 |
| 50 | | | | Dyn11<br>Yzn11<br>Yyn0 | 100 | 910/870 | 1.6 | 4 |
| 63 | | | | | 110 | 1090/1040 | 1.6 | 4 |
| 80 | | | | | 130 | 1310/1250 | 1.5 | 4 |
| 100 | | | | | 150 | 1580/1500 | 1.4 | 4 |
| 125 | | | | | 170 | 1890/1800 | 1.4 | 4 |
| 160 | | | | | 200 | 2310/2200 | 1.3 | 4 |
| 200 | | | | | 240 | 2730/2600 | 1.2 | 4 |
| 250 | | | | | 290 | 3200/3050 | 1.2 | 4 |
| 315 | | | | | 340 | 3830/3650 | 1.1 | 4 |
| 400 | | | | | 410 | 4520/4300 | 1.1 | 4 |
| 500 | | | | | 480 | 5410/5150 | 1.0 | 4 |
| 630 | | | | | 570 | 6200 | 0.9 | 4.5 |
| 800 | | | | Dyn11<br>Yyn0 | 700 | 7500 | 0.8 | 4.5 |
| 1000 | | | | | 830 | 10300 | 0.8 | 4.5 |
| 1250 | | | | | 970 | 12000 | 0.7 | 4.5 |
| 1600 | | | | | 1170 | 14500 | 0.6 | 4.5 |

## S13-M 型 20kV 油浸式配电变压器
## S13-M 型 20kV Oil-immersed distribution transformers

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range (%) | 低压 Low Voltage (kV) | | | | | |
| 50 | 20<br>22<br>24 | ±5<br>±2×2.5% | 0.4 | Dyn11<br>Yyn0 | 170 | 1270/1210 | 2.00 | 6.5 |
| 100 | | | | | 230 | 2120/2020 | 1.80 | 6.5 |
| 125 | | | | | 270 | 2500/2380 | 1.70 | 6.5 |
| 160 | | | | | 290 | 2970/2830 | 1.60 | 6.5 |
| 200 | | | | | 340 | 3500/3330 | 1.50 | 6.5 |
| 250 | | | | | 410 | 4160/3960 | 1.40 | 6.5 |
| 315 | | | | | 490 | 5010/4770 | 1.40 | 6.5 |
| 400 | | | | | 580 | 6050/5760 | 1.30 | 6.5 |
| 500 | | | | | 690 | 7280/6930 | 1.20 | 6.5 |
| 630 | | | | | 830 | 8280 | 1.10 | 6.5 |
| 800 | | | | | 980 | 9900 | 1.00 | 6.5 |
| 1000 | | | | | 1150 | 12150 | 1.00 | 6.5 |
| 1250 | | | | | 1410 | 14670 | 0.90 | 6.5 |
| 1600 | | | | | 1700 | 17550 | 0.80 | 6.5 |

注：1、表中斜线上方的负载损耗适用于 Dyn11 联接组，斜线下方的负载损耗值适用于 Yyn0 联接组。　2、其它容量的产品性能参数，由用户与制造厂协商确定。

Note: 1, slash the top of the table load loss applicable to Dyn11 join groups, load loss slash Yyn0 below values apply to join the group.
2, other capacity product performance parameters, determined by the user in consultation with the manufacturer.

## S11-M 型 6~10kV 油浸式配电变压器
## S11-M 型 6~10kV Oil-immersed distribution transformers

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range (%) | 低压 Low Voltage (kV) | | | | | |
| 30 | 11<br>10.5<br>10<br>6.3<br>6 | ±5<br>±2×2.5% | 0.4<br>0.69 | Yyn0<br>Dyn11 | 100 | 630/600 | 2.3 | 4 |
| 50 | | | | | 130 | 910/870 | 2.0 | 4 |
| 63 | | | | | 150 | 1090/1040 | 1.9 | 4 |
| 80 | | | | | 180 | 1310/1250 | 1.9 | 4 |
| 100 | | | | | 200 | 1580/1500 | 1.8 | 4 |
| 125 | | | | | 240 | 1890/1800 | 1.7 | 4 |
| 160 | | | | | 280 | 2310/2200 | 1.6 | 4 |
| 200 | | | | | 340 | 2730/2600 | 1.5 | 4 |
| 250 | | | | | 400 | 3200/3050 | 1.4 | 4 |
| 315 | | | | | 480 | 3830/3650 | 1.4 | 4 |
| 400 | | | | | 570 | 4520/4300 | 1.3 | 4 |
| 500 | | | | | 680 | 5410/5150 | 1.2 | 4 |
| 630 | | | | | 810 | 6200 | 1.1 | 4.5 |
| 800 | | | | | 960 | 7500 | 1.0 | 4.5 |
| 1000 | | | | | 1150 | 10300 | 1.0 | 4.5 |
| 1250 | | | | | 1360 | 12000 | 0.9 | 4.5 |
| 1600 | | | | | 1640 | 14500 | 0.8 | 4.5 |
| 2000 | | | | | 1960 | 19800 | 0.8 | 5 |
| 2500 | | | | | 2310 | 23000 | 0.7 | 5 |

## 50kVA~1600kVA 三相双绕组无励磁调压配电变压器
## 50kva~1600kva 3-phase duplex winding non-excited tap-changing distribution transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High Voltage tap range (%) | 低压 Low Voltage (kV) | | | | | |
| 50 | 20<br>22<br>24 | ±5%<br>±2×2.5% | 0.4 | Dyn11<br>Yyn0 | 210 | 1270/1210 | 2.00 | 6.5 |
| 100 | | | | | 290 | 2120/2020 | 1.80 | 6.5 |
| 125 | | | | | 340 | 2500/2380 | 1.70 | 6.5 |
| 160 | | | | | 360 | 2970/2830 | 1.60 | 6.5 |
| 200 | | | | | 430 | 3500/3330 | 1.50 | 6.5 |
| 250 | | | | | 510 | 4160/3960 | 1.40 | 6.5 |
| 315 | | | | | 610 | 5010/4770 | 1.40 | 6.5 |
| 400 | | | | | 730 | 6050/5760 | 1.30 | 6.5 |
| 500 | | | | | 860 | 7280/6930 | 1.20 | 6.5 |
| 630 | | | | | 1040 | 8280 | 1.10 | 6.5 |
| 800 | | | | | 1230 | 9900 | 1.00 | 6.5 |
| 1000 | | | | | 1440 | 12150 | 1.00 | 6.5 |
| 1250 | | | | | 1760 | 14670 | 0.90 | 6.5 |
| 1600 | | | | | 2120 | 17550 | 0.80 | 6.5 |

注：对于额定容量为 500kV 及以下的变压器，表中斜线上方的负载损耗值适用于 Dyn11 或 Yzn11 联结组，斜线下方的负载损耗值适用于 Yyn0 联结组。

Note: Rated capacity 500KVA and below transformer, the load loss above the oblique line in the table applies to Dyn11 or Yzn11; the load loss below the oblique line applies to Yyn0.



SNTOOM

S13-35kV
油浸式配电变压器
OIL-IMMERSED DISTRIBUTION TRANSFORMERS



## 型号含义
## Type Meaning

S 13 – □□ – □ / □ □

- 特殊使用环境 (WZ– 抗震 WFZ– 防腐抗震 GY– 高原 )
  Special use environment (WZ– seismic WFZ– anti-corrosion and seismic GY– plateau)
- 电压等级 (kV)Voltage level (kV)
- 额定容量 (KVA)Rated capacity (KVA)
- 特殊用途或特殊结构代号 (R– 卷铁芯 M– 全密封…)
  Special purpose or special structure code (R–rolled iron core M–fully sealed...)
- 性能水平代号 (7 8 9 10 11 )
  Performance level code (7 8 9 10 11)
- 产品型号 (ZS– 三相 SZ– 有载调压 SS– 三相三线圈 F– 风冷 )
  Product model (ZS–three–phase SZ–on–load voltage regulation SS–three–phase three–coil F–air cooling)

## 产品特点
## Features

- 产品具有高效率、低损耗、低噪音特点；
- 空、负载损耗低；
- 内部散热好、抗短路能力强、安全性能高；
- 运行可靠，寿命长、免维护。

- The product has the characteristics of high efficiency, low loss and low noise;
- Good internal heat dissipation, strong short–circuit resistance and high safety performance;
- Empty and low load loss;
- Reliable operation, long life and maintenance–free.

## S13 型 35kV 油浸式配电变压器
## Oil-immersed distribution transformers

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range (%) | 低压 Low Voltage (kV) | | | | | |
| 50 | 35<br>38.5 | ±5%<br>±2×2.5% | 0.4 | Dyn11<br>Yyn0 | 130 | 1200/1140 | 1.30 | 6.5 |
| 100 | | | | | 185 | 2010/1910 | 1.10 | 6.5 |
| 125 | | | | | 215 | 2370/2260 | 1.10 | 6.5 |
| 160 | | | | | 225 | 2820/2680 | 1.00 | 6.5 |
| 200 | | | | | 270 | 3320/3160 | 1.00 | 6.5 |
| 250 | | | | | 320 | 3950/3760 | 0.95 | 6.5 |
| 315 | | | | | 385 | 4750/4530 | 0.95 | 6.5 |
| 400 | | | | | 465 | 5740/5470 | 0.85 | 6.5 |
| 500 | | | | | 545 | 6910/6580 | 0.85 | 6.5 |
| 630 | | | | | 665 | 7860 | 0.65 | 6.5 |
| 800 | | | | | 785 | 9400 | 0.65 | 6.5 |
| 1000 | | | | | 920 | 11500 | 0.65 | 6.5 |
| 1250 | | | | | 1120 | 13900 | 0.60 | 6.5 |
| 1600 | | | | | 1350 | 16600 | 0.60 | 6.5 |

注：1、根据要求变压器的高压分接范围可供 ±2×2.5%。　　2、其它容量的产品性能参数，由用户与制造厂协商确定。

Note: 1, according to the requirements of high voltage transformer tap range for ± 2×2.5%.
2, other capacity product performance parameters, determined by the user in consultation with the manufacturer.

## 50kVA~1600kVA 三相双绕组无励磁调压配电变压器
## 50kva~1600kva 3-phase duplex winding non-excited tap-changing distribution transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range (%) | 低压 Low Voltage (kV) | | | | | |
| 50 | 35<br>38.5 | ±5<br>±2×2.5% | 0.4 | Dyn11<br>Yyn0 | 130 | 1200/1140 | 1.30 | 6.5 |
| 100 | | | | | 185 | 2010/1910 | 1.10 | 6.5 |
| 125 | | | | | 215 | 2370/2260 | 1.10 | 6.5 |
| 160 | | | | | 225 | 2820/2680 | 1.00 | 6.5 |
| 200 | | | | | 270 | 3320/3160 | 1.00 | 6.5 |
| 250 | | | | | 320 | 3950/3760 | 0.95 | 6.5 |
| 315 | | | | | 385 | 4750/4530 | 0.95 | 6.5 |
| 400 | | | | | 465 | 5740/5470 | 0.85 | 6.5 |
| 500 | | | | | 545 | 6910/6580 | 0.85 | 6.5 |
| 630 | | | | | 665 | 7860 | 0.65 | 6.5 |
| 800 | | | | | 785 | 9400 | 0.65 | 6.5 |
| 1000 | | | | | 920 | 11500 | 0.65 | 6.5 |
| 1250 | | | | | 1120 | 13900 | 0.60 | 6.5 |
| 1600 | | | | | 1350 | 16600 | 0.60 | 6.5 |
| 2000 | | | | | 1590 | 19700 | 0.55 | 6.5 |
| 2500 | | | | | 1890 | 23200 | 0.55 | 6.5 |

注 1: 对于额定容量为 500kVA 及以下的变压器，表中斜线上方的负载损耗值适用于 Dyn11 联结组，斜线下方的负载损耗值适用于 Yyn0 连接组。
注 2: 根据用户需要，可提供高压分接范围为 ±2×2.5% 的变压器。

Note 1: Rated capacity 500KVA and below transformer, the load loss above the oblique line in the table applies to Dyn11 or Yzn11; the load loss below the oblique line applies to Yyn0.
Note 2: According to requirements, the transformer can supply HV tap change ±2×2.5%





## 630kVA~31500kVA 三相双绕线组无励磁调压电力变压器
## 630kva~31500kva triple phase duplex winding non exciting regulating power transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range (%) | 低压 Low Voltage (kV) | | | | | |
| 630 | 35 | ±5% | 3.15<br>6.3<br>10.5 | Yd11 | 830 | 7870 | 1.10 | 6.5 |
| 800 | | | | | 980 | 9410 | 1.00 | 6.5 |
| 1000 | | | | | 1150 | 11540 | 1.00 | 6.5 |
| 1250 | | | | | 1410 | 13940 | 0.90 | 6.5 |
| 1600 | | | | | 1700 | 16670 | 0.80 | 6.5 |
| 2000 | | | | | 2180 | 18380 | 0.70 | 6.5 |
| 2500 | | | | | 2560 | 19670 | 0.60 | 6.5 |
| 3150 | 35~38.5 | ±5% | 3.15<br>6.3<br>10.5 | | 3040 | 23090 | 0.56 | 7.0 |
| 4000 | | | | | 3620 | 27360 | 0.56 | 7.0 |
| 5000 | | | | | 4320 | 31380 | 0.48 | 7.0 |
| 6300 | | | | | 5250 | 35060 | 0.48 | 7.0 |
| 8000 | 35~38.5 | ±2×2.5% | 3.15<br>3.3<br>6.3<br>6.6<br>1.05<br>11 | Yd11 | 7200 | 38480 | 0.42 | 7.5 |
| 10000 | | | | | 8700 | 45320 | 0.42 | 7.5 |
| 12500 | | | | | 10080 | 53870 | 0.40 | 8.0 |
| 16000 | | | | | 12160 | 65840 | 0.40 | 8.0 |
| 20000 | | | | | 14400 | 79520 | 0.40 | 8.0 |
| 25000 | | | | | 17020 | 94050 | 0.32 | 8.0 |
| 31500 | | | | | 20220 | 112860 | 0.32 | 8.0 |

注 1: 外形尺寸根据用户具体需要进行设计。

Note 1: Outline dimension is designed according to requirements.

## 2000kVA-20000kVA 有载调压电力变压器
## 2000kVA-20000kVA OLTC power transformer

| 额定容量 Rated capacity (kVA)) | 电压组合及分接范围 Voltage Combination and Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range (%) | 低压 Low Voltage (kV) | | | | | |
| 2000 | 35 | ±3×2.5 | 6.3 10.5 | Yd11 | 2300 | 19240 | 0.80 | 6.5 |
| 2500 | | | | | 2720 | 20640 | 0.80 | 6.5 |
| 3150 | 35~38.5 | ±3×2.5 | 6.3<br>10.5 | | 3230 | 24710 | 0.72 | 7.0 |
| 4000 | | | | | 3870 | 29160 | 0.72 | 7.0 |
| 5000 | | | | | 4640 | 34200 | 0.68 | 7.0 |
| 6300 | | | | | 5630 | 36770 | 0.68 | 7.5 |
| 8000 | | | | Ynd11 | 7870 | 40610 | 0.60 | 7.5 |
| 10000 | | | | | 9280 | 48050 | 0.60 | 8.0 |
| 12500 | 35~38.5 | ±3×2.5 | 6.3<br>6.6<br>10.5<br>11 | | 10940 | 56860 | 0.56 | 8.0 |
| 16000 | | | | | 13170 | 70320 | 0.54 | 8.0 |
| 20000 | | | | | 15570 | 82780 | 0.54 | 8.0 |

SNTOOM

# 单相柱上式油浸式电力变压器

SINGLE PHASE COLUMN TYPE ON OIL-IMMERSED POWER TRANSFORMER




## 产品概述
## Product overview

西方发达国家及东南亚，南北美洲地区，大量使用单相变压器作为配电变压器。在供电分散的配电网络中，单相变压器作为配电变压器有较大的优点。它可以减少低压配电线路的长度，减少线路损失，提高供电质量，采用了高效节能卷铁芯结构设计，该变压器的特点是采用柱上式悬挂安装方式，体积小，基建投资小，减少低压供电半径，可降低低压线路损 60% 以上。变压器采用全密封结构，过负荷能力强，连续运行可靠性高，维护简单，使用寿命长。

适合农村电网，偏远地区，分散村落，农业生产，照明和动力用电，也可用于铁路，城市电网节能改造柱上式配电线路。

可单相运行或三台单相成组作为三相运行。

The western developed countries and southeast Asia, north and South America region, single-phase transformer is widely used as a distribution transformer. Scattered in the power supply of distribution network, as a distribution transformer single-phase transformer has the advantages of larger. It can reduce the length of the low-voltage distribution line, reduce line losses, improving the power supply quality, the high efficiency and energy saving roll core structure design, the characteristics of the transformer is used in a column on suspension installations, small volume, infrastructure investment is small, reduce the radius of low voltage power supply, can reduce the low voltage line loss more than 60%. Fully sealed structure is used in transformer overload capability, high reliability of continuous running, simple maintenance, long service life.

Suitable for rural power grids, remote areas, scattered villages, agricultural production, electricity, lighting and power can also be used in railway, urban power grid column type distribution circuit on the reform.

Can run single phase or three single-phase group as a three-phase operation.





## 型号含义
## Type Meaning

D 11 – □ / □ □

- 特殊使用环境代号 (GY– 高源，WF– 防腐蚀，TA– 干热带，TH– 湿热带 )
  Special use environment code (GY – high, WF – corrosion Corrosion, TA – dry tropical, TH – humid tropics)
- 电压等级 (KV)Voltage level (KV)
- 额定容量 (kVA)The rated capacity (kVA)
- 性能水平代号 Performance level code
- 单相 Single phase

## 产品标准
## Product standards

GB1094.1~2–2013 GB/T 6451–2015

额定高压：10(10.5、11、6、6.3、6.6)kV

额定低压：0.22(0.23、0.24)kV

分接范围：无励磁调压 (±5%，±2x2.5%)

联结组别：Iio 或 Ii6

绝缘水平：LI75AC35/AC5

GB1094.1 ~ 2–2013 GB/T 6451–2015

High Voltage rating: 10 (10.5, 11, 6, 6.3, 6.6) kV

Low Voltage rating: 0.22 kV (0.23, 0.24)

Tapping range: non–field excitation changer (5% plus or minus 5%, plus or minus 2 x2.)

Link category: Iio or Ii6

Insulation level: LI75AC35 / AC5

## 性能参数
## The performance parameters

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No–load loss(W) | 负载损耗 Load loss (W) | 空载电流 No–load current (%) | 短路阻抗 Short circuit impedance (%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High–voltage Tap Range (%) | 低压 Low Voltage (kV) | | | | | |
| 5 | 6<br>6.3<br>10<br>10.5<br>11 | ±2×2.5<br>±5 | 0.22<br>0.23<br>0.24 | Iio<br>Ii6 | 40 | 215 | 3.2 | 3.5 |
| 10 | | | | | 45 | 235 | 2.8 | |
| 15 | | | | | 53 | 315 | 2.8 | |
| 20 | | | | | 62 | 405 | 2.8 | |
| 25 | | | | | 70 | 480 | 2.8 | |
| 30 | | | | | 80 | 560 | 2.8 | |
| 50 | | | | | 120 | 855 | 2.3 | |
| 63 | | | | | 135 | 1020 | 2.1 | |
| 80 | | | | | 160 | 1260 | 2.0 | |
| 100 | | | | | 190 | 1485 | 1.9 | |
| 125 | | | | | 220 | 1755 | 1.8 | |
| 160 | | | | | 260 | 2050 | 1.6 | |

SNTOOM

# 高过载配电变压器

HIGH OVERLOAD DISTRIBUTION TRANSFORMERS



## 产品概述
## Product overview

近年来随着流动人口的不断增加，农村用电出现高温季节及春节期间农村地区配电变压器短时段严重过载运行的问题。为了解决此类用电问题，我公司响应国家电网公司近年来倡导的积极开展农网高过载能力配电变压器研制及应用工作，研制开发了高过载能力配电变压器。

高过载能力配电变压器根据农网综合台区典型负荷特点，高过载配变过载性能将满足 1.5 倍额定容量 6 小时、1.75 倍额定容量 3 小时、2.0 倍额定容量 1 小时阶段性连续运行的设计要求，且不影响变压器正常使用寿命。高过载能力配电变压器避免了由于人口流动，农村出现的短时段用电严重过载问题，降低了电网运行成本，提高了电网运行安全，是未来农村配网变压器选择的一大方向。

In recent years, with the increasing mobility of the population, the hot season, and distribution transformers in rural areas during the Spring Festival period of severe overload short run problem of rural electricity appears. In order to solve such problem of electricity, the company response to the State Grid Corporation of China in recent years advocated actively develop rural power distribution transformers and high overload capacity application work, we developed a high overload capacity distribution transformers.

High overload capacity integrated rural power distribution transformer station area based on typical load characteristics, high overload distribution transformer overload performance will meet the 1.5 times the rated capacity of six hours, 1.75 times the rated capacity of 3 hours, 2.0 times the rated capacity of one hour of continuous operation stage design requirements, and does not affect the normal life of the transformer. High overload capacity distribution transformer avoids the migration of rural electricity appeared short period of severe overload, reduce operating costs grid, improve the safe operation of





## 型号含义
## Type Meaning

高过载能力配电变压器（以下简称“高过载配电”）的产品型号的组成型式和型号编制方法按 JB/T 3837 的规定如下所示：

一台三相、油浸、自冷、双绕组、无励磁调压、绝缘耐热等级为 F 级，损耗水平代号为“11”，额定容量为 100kVA 的 kV 电压等级密封式高过载配电型号表示为：S11-M(F)-100/10GZ。

The type and composition of model for high overload capacity distribution transformers (hereinafter referred to as "high overload Distribution") in accordance with the provisions of the Model JB / T 3837 is as follows:

a three-phase, oil-immersed, self-cooled, two-winding, non-excitation voltage, heat insulation class F loss level code-named "13", the rated capacity of 100kVA sealed kV voltage level with high overload electric model is expressed as: S11-M (F) -100/10GZ.

□□-□()-□/10 GZ

- 高过载能力 High overload capacity
- 电压等级 (kV)Voltage (kV)
- 额定容量 (kVA)Rated capacity (kVA)
- 绝缘耐热等级 Insulation Rating
- 密封式 Sealed
- 损耗水平代号 Loss level code
- 产品型号字母 Model letter

## 使用环境
## Use of the environment

| 使用条件 | Service condition |
|---|---|
| 环境温度 | Ambient temperature |
| ● 最高气温 +40℃ | ● Highest air temperature +40℃ , |
| ● 最低气温 -25℃ | ● Lowest air temperature -25℃ , |
| ● 最热月平均温度 +30℃ | ● Hottest monthly average temperature +30℃ |
| ● 最热年平均温度 +20℃ | ● Hottest yearly average temperature +20℃ |
| 海拔不超过 1000m | The height above the sea level is below 1000m; |
| 电源电压的波形近似于正弦波 | The power supply voltage's cave is similar to sine wave |
| 三相电源电压应大致对称 | Three-phase power supply voltage is appr oximately symmetrical |
| 安装环境无明显的污秽 | Installation without evidence filth. |
| 户内使用 | Service indoor |

## 性能参数
## Performance parameters

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range | | | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current(%) | 短路阻抗 Short circuit impedance(%) |
|---|---|---|---|---|---|---|---|---|
| | 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range (%) | 低压 Low Voltage (kV) | | | | | |
| 50 | 10<br>10.5<br>11 | ±5%<br>±2×2.5% | 0.4 | Dyn11<br>Yyn0 | 130 | 910/870 | 1.1 | 4 |
| 100 | | | | | 200 | 1580/1500 | 1 | 4 |
| 200 | | | | | 340 | 2730/2600 | 0.9 | 4 |

注：1、根据要求变压器的高压分接范围可供 ±2×2.5%。 2、其它容量的产品性能参数，由用户与制造厂协商确定。

Note: 1, according to the requirements of high voltage transformer tap range for ± 2×2.5%.
2, other capacity product performance parameters, determined by the user in consultation with the manufacturer.

SNTOOM

# 有载调容变压器

ON-LOAD TRANSFER CAPACITY TRANSFORMER



## 产品概述
## Product overview

长期以来，我国农村电网具有负荷分散、季节性强、平均负荷率低的特点，在农网建设与改造中选用的变压器应符合农网的负荷特点，进一步降低变压器的空载损耗和空载电流，满足当前和今后数年内，新装和更换的配电变压器具有技术先进性和运行可靠性。而我公司生产的有载调容变压器正是根据农网这一特点设计的变压器，完全可以满足农网的需求。有载调容变压器通过智能控制器对调容开关进行调整，从而完成变压器高、低容量的自动转换过程，是一种新技术节能型配电变压器。

采用 S11-ZT 型有载调容变相比两台 S11 型子母变压器，首先降低了设备购置和安装成本费，而且占地空间缩小，建设周期缩短，运行维护工作量明显减少。同时 S11-ZT 型同有载调容变压器 S11 型普通变压器相比，变压器空载损耗下降 50% 以上。因此有载调容变压器是未来农村供电的最佳选择。

For a long time, China's rural power grid has a load distribution, seasonal, low average load characteristics, in rural power grid construction and transformation of choice should be consistent with the load characteristics of rural power transformer further reduce the transformer load loss and no-load current to meet current technical sophistication and reliability and the next few years, new clothes and replacement distribution transformers have. And I produced the load transfer capacity of rural power transformer according to this feature is the design of the transformer, fully meet the needs of rural power grids. Load transfer capacity of the transformer reversed through intelligent controller switches to adjust capacity to complete transformer high, low capacity automatic conversion process is a new energy-saving technology distribution transformers.

Use S11-ZT-load tuning capacitor variations compared to the two picture-S11 type transformer, first reduce equipment purchase costs and installation costs, and floor space narrowing, shortening the construction period, operation and maintenance significantly reduce the workload. Meanwhile S11-ZT-type load transfer capacity compared with have S11 type transformer ordinary transformer, the transformer load loss decreased by 50%. Therefore, load transfer capacity of the transformer is the best choice for the future of rural electrification.





## 型号含义
## Type Meaning

在调容变压器产品型号的组成形式中，将低档位的额定容量写在括号中，其它型号编制方法按 JB/T3837 的规定，示例如右图所示：

In the composition in the form of transfer capacity transformers models, the rated capacity to resist bit written in parentheses, other models compilation method prescribed JB / T3837, the example shown at right:

S 13- M·ZT - 315(100) / 10

- 10 系统标称电压 (kV)System nominal voltage (kV)
- 315(100) 大 ( 小 ) 额定容量 (kVA)Large (small) rated capacity (kVA)
- ZT 有载调容调压 On-load capacity regulation
- M 全密封 Fully sealed
- 13 性能水平代号 Performance level code
- S 三相 Three phase

## S11-M.ZT 型 10kV 有载调容变压器
## S11-M.ZT type 10kV on-load capacity regulating transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range (%) | 低压 Low Voltage (kV) | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current(%) | 短路阻抗 Short circuit impedance(%) |
|---|---|---|---|---|---|---|---|---|
| 160(50) | 10<br>10.5<br>11 | ±4×2.5%<br>±3×2.5%<br>±2×2.5% | 0.4 | Dyn11<br>Yyn0 | 280(130) | 2590(1030) | 1.6(0.9) | 4(4.0) |
| 200(63) | | | | | 340(150) | 3215(1230) | 1.5(0.9) | 4(4.0) |
| 250(80) | | | | | 400(180) | 3780(1480) | 1.4(0.7) | 4(4.0) |
| 315(100) | | | | | 480(200) | 4540(1770) | 1.4(0.7) | 4(4.0) |
| 400(125) | | | | | 570(240) | 5480(2130) | 1.3(0.6) | 4(4.0) |
| 500(160) | | | | | 680(280) | 6520(2600) | 1.2(0.6) | 4(4.0) |
| 630(200) | | | | | 810(340) | 8030(3060) | 1.1(0.5) | 4.5(4.0) |

注：其它容量的产品性能参数，由用户与制造厂协商确定。
Note: Additional capacity product performance parameters, determined by the user in consultation with the manufacturer.

## S13-M.ZT 型 10kV 有载调容变压器
## S13-M.ZT type 10kV on-load capacity regulating transformer

| 额定容量 Rated capacity (kVA) | 电压组合及分接范围 Voltage Combinationand Tap range 高压 High Voltage (kV) | 高压分接范围 High-voltage Tap Range (%) | 低压 Low Voltage (kV) | 联结组标号 Vector Group | 空载损耗 No-load loss(W) | 负载损耗 Load loss (W) | 空载电流 No-load current(%) | 短路阻抗 Short circuit impedance(%) |
|---|---|---|---|---|---|---|---|---|
| 160(50) | 10<br>10.5<br>11 | ±4×2.5%<br>±3×2.5%<br>±2×2.5% | 0.4 | Dyn11<br>Yyn0 | 200(100) | 2310 (870) | 1.6(0.8) | 4(4.0) |
| 200(63) | | | | | 240(110) | 2730 (1040) | 1.5(0.7) | 4(4.0) |
| 250(80) | | | | | 292(130) | 3200 (1250) | 1.4(0.7) | 4(4.0) |
| 315(100) | | | | | 340(150) | 3830 (1500) | 1.4(0.7) | 4(4.0) |
| 400(125) | | | | | 410(170) | 4520 (1800) | 1.3(0.6) | 4(4.0) |
| 500(160) | | | | | 480(200) | 5410 (2200) | 1.2(0.6) | 4(4.0) |
| 630(200) | | | | | 570(240) | 6200(2600) | 0.8(0.4) | 4.5 |

注：其它容量的产品性能参数，由用户与制造厂协商确定。
Note: Additional capacity product performance parameters, determined by the user in consultation with the manufacturer.

SNTOOM

YB □ -12/0.4

# 户外预装式变电站（欧式）

OUTDOOR PREFABRICATED SUBSTATION (EUROPEAN)



## 产品概述
## Product overview

YB □ -12/0.4 户外预装式变电站 ( 欧式 ), 广泛用于城市电网改造、住宅小区、高层建筑、工矿、宾馆、商场、机场、铁路、油田、码头、高速公路以及临时性用电设施等户内外场所。

YB□ -12/0.4 Outdoor prefabricated substation (European), Widely used in urban power grids, residential quarters, high-rise building, mining, hotels, shopping malls, airports, railways, oil fields, terminals, highways and electricity facilities and other temporary indoor and outdoor venues.

## 型号含义
## Type Meaning

YB □ - 12 /0.4 □

- 变压器容量 Transformer capacity
- 额定电压 ( 高压 / 低压 )Rated voltage (HV / LV)
- 设计序号 Design No.
- 智能型一体化变电站 Intelligent Substation Integration





## 使用条件
## Conditions of Use

海拔高度：不超过 1000m；

环境温度：-25℃ ~+40℃；

相对湿度：日平均值不大于 95%，月平均值不大于 90%；

安装场所：无火灾、爆炸危险、导电尘埃、化学腐蚀性气体及剧烈震动的场所，若超出以上条件时，用户可与我公司协商。

Altitude less than 1000m;

Ambient temperature: -25 ℃ ~+40 ℃ ;

Relative humidity: daily average of not more than 95%, on average less than 90%;

Installation place: no fire, explosion, conductive dust, chemical corrosion and severe vibration gas properties, if the above conditions are exceeded, the user can consult with our company.

## 功能及特点
## Functions and Features

高压开关设备、变压器、低压开关设备三位一体，成套性强；

高、低压保护完善，运行安全可靠，维护简单；

占地少，投资省、生产周期短、移动方便；接线方案灵活多样；

结构独特：独特蜂窝式结构双层 ( 复合板 ) 外壳牢固，隔热又散热通风、美观、防护等级高，外壳材料有不锈钢钣合金、铝合金、冷轧板、彩钢板可选；

型式多样：通用型、别墅型、紧凑型等多种样式；

高压环网柜内可装配网自动化终端 (FTU) 实现短路及单相接地故障的可靠检测，具备“四遥”功能，便于配网自动化升级。

High voltage switchgear, transformers, low voltage switchgear Trinity, complete and strong;

High and low voltage protection improved, safe and reliable operation, easy maintenance;

Small footprint, low investment, short production cycle, easy to move;

Flexible wiring scheme;

Unique structure: a unique double honeycomb structure (composite board) housing firm, insulation and cooling ventilation, beautiful, high degree of protection, housing material stainless steel titanium alloy, aluminum alloy, cold rolled sheet, color steel optional;

Diverse types: general-purpose, villas, compact and other styles;

High-pressure ring network cabinet can be equipped with automated terminal (FTU) short-circuit and reliable single-phase ground fault detection, with "four remote" function, easy distribution automation upgrade.

## 负荷开关技术参数
## Load switching technologyparameters

| 名称 name | 单位 unit | FN12-12 负荷开关 Load Switch | FZM12-12 真空负荷开关 Vacuum load switch |
|---|---|---|---|
| 额定电压 Rated voltage | kV | 10 | 10 |
| 最高工作电压 Maximum operating voltage | kV | 12 | 12 |
| 额定频率 Rated frequency | Hz | 50 | 50 |
| 额定电流 Rated current | Hz | 630 | 630 |
| 额定开断负荷电流 Rated breaking load current | A | 630 | 630 |
| 热稳定电流 ( 有效值 )Thermal stability current (rms) | kA/S | 20/2 | 20/4 |
| 动稳定电流 Dynamic stability current | kA | 50 | 50 |
| 短路关合电流 ( 峰值 )Short-circuit current (peak) | kA | 50 | 50 |
| 满负荷开断次数 Full load breaking times | 次 Times | 20 | 10000 |
| 机械寿命 Mechanical life | 次 Times | 2000 | 10000 |
| 1min 工频耐压 ( 相间及对地 )<br>1min power frequency withstand voltage (phase and ground) | kV | 42 | 42 |
| 雷电冲击电压 ( 相对及对地 )<br>Lightning impulse voltage (relative and on the ground) | kV | 75 | 75 |

## 高压熔断器技术参数
## High-voltage fuse technical parameters

| 序号 Load switching | | 额定电压 Rated voltage(KV) | 开断电流 Breaking current(A) | 开断电流 Breaking current(KA) | 熔体额定电流 Melt the rated current(A) |
|---|---|---|---|---|---|
| 英国型号 British model | 国内型号 Domestic Model | | | | |
| SDL※J | XRNT-12 | 12 | 40 | 31.5 | 6.3, 10, 16, 20, 25, 31.5, 40 |
| SFL※J | XRNT-12 | 12 | 100 | 31.5 | 50, 63, 71, 80, 100 |
| SKL※J | XRNT-12 | 12 | 125 | 31.5 | 125 |

* 注：由是否安装撞击器确定，N 为无撞针，A 为有撞针。
* Note: The striker is determined by whether or not to install, N is no striker, A to have striker.

| 序号 No | 脱扣器形式 Release form | 脱扣器额定电流 Rated currentA | 通断能力 Breaking capacity KA(AC380V) |
|---|---|---|---|
| DW15-630 | 热 - 电磁性或电子型<br>Thermal - magnetic or electronic type | 315, 400, 630 | 40 |
| DW15-1000 | 热 - 电磁性或电子型<br>Thermal - magnetic or electronic type | 630, 800, 1000 | 50 |
| DW15-1600 | 热 - 电磁性或电子型<br>Thermal - magnetic or electronic type | 1600 | 50 |
| DW15-2500 | 热 - 电磁性或电子型<br>Thermal - magnetic or electronic type | 1600, 2000, 2500 | 60 |
| CW1-2000 | 智能型 Smart | 630, 800, 1000, 1250, 16001, 2000 | 65(80) |
| CW1-3200 | 智能型 Smart | 2000, 2500, 3200 | 100 |

注：(80) 为高分子断型。
Note: (80) is a polymer-off type.



SNTOOM

ZGS □ -12/0.4(F-R)
预装式箱式变电站 ( 美式 )
PREFABRICATED SUBSTATION (AMERICAN)



## 产品概述
## Product overview

ZGS □ -12/0.4 预装式箱式变电站 ( 美式 ), 本产品是吸收国外最新先进技术，结合国内实际情况研制开发的，整台产品具有体积小、安装维护简便、低噪音、低损耗、防盗、过负荷能力强、全保护等特点。适用于新建小区、绿化带、公园、车站宾馆、工地、机场等场所。

ZB 系列预装式箱式变电站 ( 美式 )，适用于 10kV 环网供电， 双电源供电或终端供电系统中,作为变电、计量、补偿控制和保护装置。

本产品符合下列标准：

GB/T17467-1998《高压低压预装式变电站》

DL/T537-93《6-35KV 箱式变电站订货技术条件》

ZGS □ -12/0.4 Prefabricated substation (American), The latest product is the absorption of foreign advanced technology, combined with the actual situation developed, the entire product is small, easy installation and maintenance, low noise, low loss, theft, overload capability, full protection and so on. It applies to new residential, green belts, parks, railway stations hotels, construction sites, airports and other places.

ZB Series Prefabricated Substation (American), applicable to 10kV ring network power supply, dual power supply or terminal power supply system, as a transformer, metering, compensation control and protection devices.

This product meets the following criteria:

GB / T17467-1998 "high voltage and low voltage prefabricated substation"

DL / T537-93 "6-35KV box-type substation orders and technical conditions"

## 型号含义
## Type Meaning

ZGS □ – 12/0.4 (F·R) – □ / □

- 类型：H：环网型 Z：终端型
  Type:` H: Ring type Z: Terminal type
- 变压器容量 /Transformer capacity (kVA)
- 负荷开关、熔断器 The low-pressure side rated voltage (kV)
- 额定电压 High side rated voltage (kV)
- 性能水平代号 Design No.
- 预装式变电站 ( 美式 )Prefabricated Substation (American)

## 正常使用条件
## Normal Use Conditions

海拔高度：不超过 1000m；
环境温度：–35℃ ~+40℃；
相对湿度：日平均值不大于 95%，月平均值不大于 90%；
安装场所：无火灾、爆炸危险、化学腐蚀性气体及通风良好的场所，地面倾角不大于 3° 。

Altitude: not exceed 1000m;
Ambient temperature: –35 ℃ ~+40 ℃ ;
Relative humidity: daily average of not more than 95%, on average less than 90%;
Installation place: no fire, explosion, chemical corrosive gas and well-ventilated place, the ground angle of not more than 3°

## 功能及特点
## Functions and Features

全绝缘、全密封、免少维护、可靠保证人身安全；
结构紧凑、体积仅为同容量欧变的 1/3–1/5，高度低；
可采用分箱式结构，避免变压器油箱内油的污染；
高压侧采用双熔丝全范围保护，大大降低成本；
即可用环网，也可用于终端，电缆头可在 200A 负荷电流时紧急插拔；
箱体采用蜂窝式双夹层复合板，隔温又散热的功能；
低压侧加装电子缺相保护器，当系统内出现不正常电压时，可快速分断主进开关；
高压侧油浸式负荷开关或 SF6 负荷开关， 可电动升级，为实现配网自动化打下基础；
采用油浸式 S9 或性能更优的 S11 系列变压器。

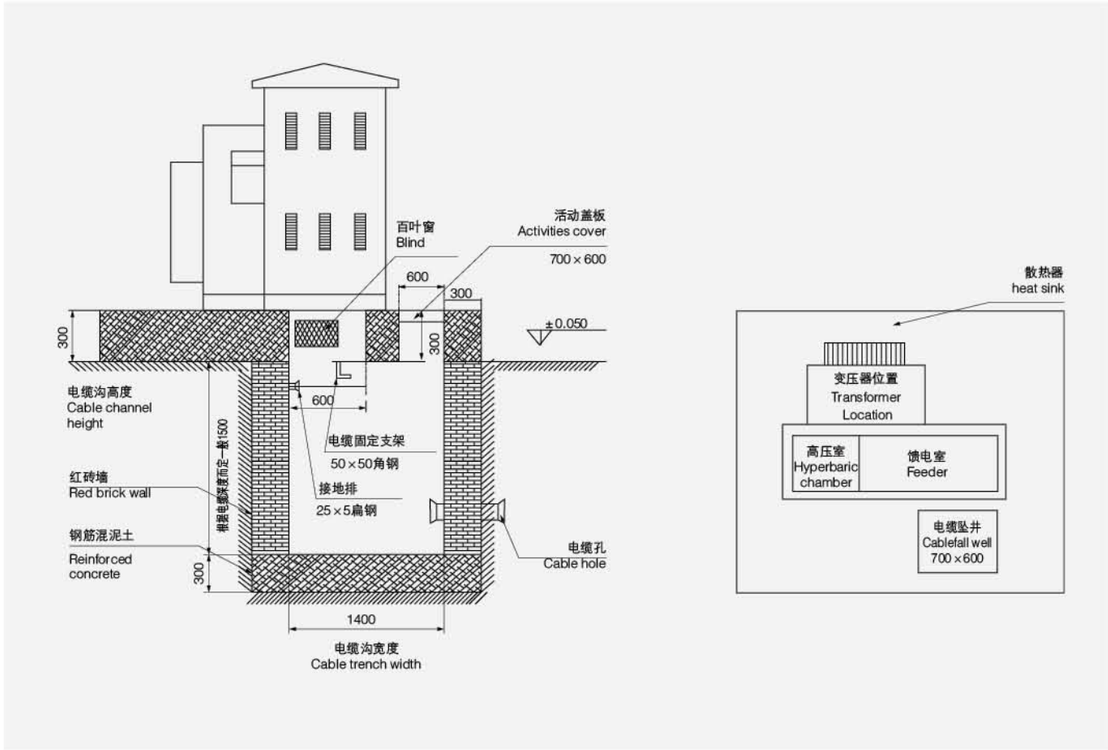
Fully insulated, sealed, low maintenance-free, reliable guarantee personal safety;
Compact structure, with the capacity of Europe changed only 1/3-1/5, high and low;
Box-type structure can be divided, to avoid contamination of the transformer oil tank;
High side fuse the full range of dual protection, greatly reduce the cost;
You can use the ring can also be used to end the cable head can plug in an emergency 200A load current;
Honeycomb sandwich box with dual composite panels, compartment temperature and cooling function;
The Low Voltage side of the installation of electronic phase protection, when abnormal voltage is present in the system, you can quickly open the main feed switch;
Oil high side load switch or SF6 load switch, electric upgrade, to achieve distribution automation lay the foundation;
Using oil-immersed S9 or better performance S11 series transformer.





## 主要技术参数
## Main Technical Parameter

| 名称 name | 单位 unit | 技术参数 Technical Parameters |
|---|---|---|
| 额定电压 Rated voltage | kV | 10/0.4( 高压 / 低压 )(High / low) |
| 最高工作电压 Maximum operating voltage | kV | 12( 高压侧 )(High side) |
| 额定频率 Rated frequency | Hz | 50 |
| 额定容量 Rated Capacity | kVA | 50–1600 |
| 1 分钟工频耐压 1 minute power frequency withstand voltage | kV | 35 |
| 雷电冲击电压 Lightning impulse voltage | kV | 75 |
| 冷却方式 cooling method | | 油浸自冷 ONAN |
| 高压后备熔断器开断电流 High-voltage fuse breaking current reserve | kA | 50 |
| 插入式熔断器开断电流 Plug-in fuse breaking current | kA | 2.5 |
| 环境温度 Ambient temperature | ℃ | –35~+40 |
| 线圈允许温升 Coil allowable temperature rise | ℃ | 65 |
| 无载调压 No-load voltage regulation | | ±5%或 ±2×2.5% |
| 噪声等级 Noise Level | db | 50 |
| 防护等级 Protection class | | IP43 |



SNTOOM

DFW-12kV

# 欧式电缆分接箱

EUROPEAN CABLE DISTRIBUTION BOXES




## 产品概述
## Product overview

DFW-12kV 欧式电缆分接箱，欧式电缆分接箱是近年来广泛用于电力配网系统中的电缆化工程设备，它的主要特点是双向开门、利用穿墙套管作为连接母排，具有长度小、电缆排列清楚、三芯电缆不需要大跨度交叉等显著优点。其所采用的电缆接头符合 DIN47636 标准。一般采用额定电流 630A 螺栓固定连接式电缆接头。

DFW-12kV European cable distribution boxes,European cable distribution boxes are widely used in power in recent years in the cable distribution network systems engineering equipment, its main feature is a two-way door, use wall bushing as the connection busbar, with a small length of cable arrangement clear, three-core cable does not require the large span crossing and other significant advantages. Their use of cable joint in line with DIN47636 standards. Generally the rated current of 630A bolted connection cable connector.

## 型号含义
## Type Meaning

DFW □-□ □

- □ A 为带避雷器缺省为不带 / A lightning arrester for the band with no default
- □ 回路数（一相中进出线总数） / The number of loops (a total phase into the outlet)
- □ 电压等级 Voltage level
- DFW 电缆分接箱 Cable distribution boxes





## 正常使用条件
## Normal Use Conditions

环境温度：-30℃ ~+40℃；

风速：相当 34m/s( 不大于 700Pa)；

相对湿度：日相对湿度平均值不大于 95%，月相对湿度平均值不大于 95%；

防震：水平加速度不大于 0.4m/s$^2$，垂直加速度不大于 0.15m/s$^2$，安装地点倾斜度不大于 3°；

周围环境：周围空气不受腐蚀性、可燃性气体、 水蒸气等明显污染，安装地点无剧烈震动。
注：订购本产品超出上述条件规定时，请与本公司协商。

Ambient temperature: -30℃ ~+40℃;

Winds: Pretty 34m/s (not more than 700Pa);

Relative humidity: daily average relative humidity less than 95%, the monthly average relative humidity less than 95%;

Earthquake: horizontal acceleration is not greater than 0.4m/s2, the vertical acceleration is not greater than 0.15m/s2 installation site gradient: less than 3° ;

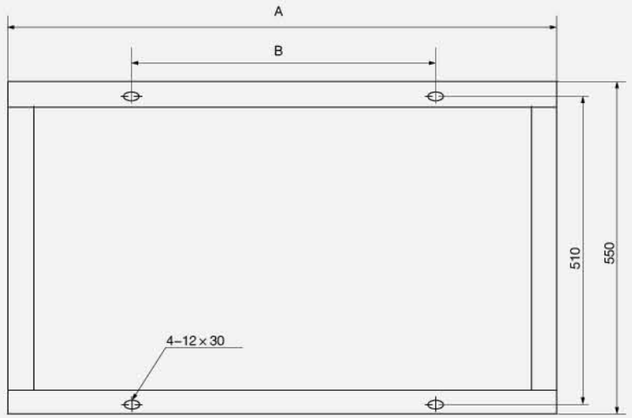
surroundings: the ambient air pollution is not obvious corrosive, flammable gas, vapor, etc, the installation site without severe vibration.

Note: The order of this product outside the above specified conditions, please consult with the company.

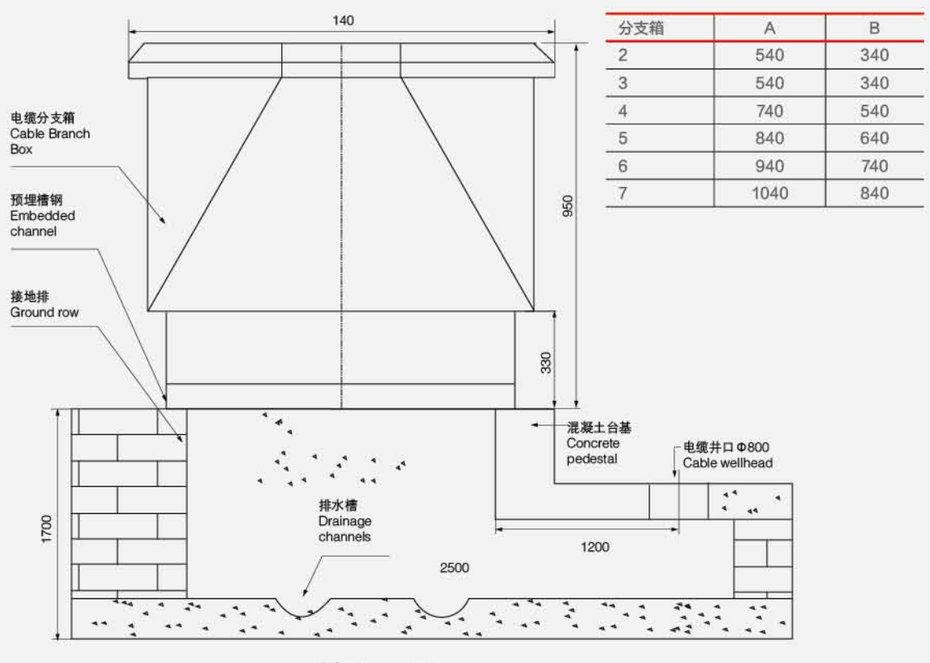
## 主要技术参数
## Main Technical Parameter

| 序号 No. | 名称 name | 参数 parameter |
|---|---|---|
| 1 | 额定电压 Rated voltage | 12kV |
| 2 | 额定电流 Rated current | 630A |
| 3 | 动稳定电流 Dynamic stability current | 50kA/0.3s |
| 4 | 热稳定电流 Thermal stability current | 20kA/3s |
| 5 | 1min 工频耐压 1min power frequency withstand voltage | 42kV |
| 6 | 15 分钟直流耐压 15 minutes DC voltage | 52kV |
| 7 | 雷电冲击耐压 Lightning impulse withstand voltage | 105kV |
| 8 | 箱体防护等级 Case protection class | IP33 |

## 欧式电缆分接箱地基
## European cable distribution boxes foundation plans




地基安装尺寸图Ground mounting dimensions




| 分支箱 | A | B |
|---|---|---|
| 2 | 540 | 340 |
| 3 | 540 | 340 |
| 4 | 740 | 540 |
| 5 | 840 | 640 |
| 6 | 940 | 740 |
| 7 | 1040 | 840 |

地基图Foundation plans



SNTOOM

# 矿用隔爆型移动变电站
EXPLOSION-PROOF MOBILE SUBSTATION FOR MINE



## 产品特点
## Features

矿用隔爆型移动变电站由矿用隔爆型干式变压器、矿用隔爆型移动变电站用高压负荷开关或矿用隔爆型移动变电站用高压真空开关和矿用隔爆型移动变电站用电缆连接器、矿用隔爆型移动变电站用低压馈电开关或矿用隔爆型移动变电站用低压保护箱组成。具有漏电、漏电闭锁、过载、短路、过压欠压等保护性能。

KBSGZY 系列矿用隔爆型移动变电站是一种煤矿井下用可移动的成套供变电设备，它既适用于有加甲烷混合气体和煤尘且有爆炸危险的井矿环境，也适用于不足以腐蚀金属和破坏绝缘的气体及蒸气环境中。

The mine explosion-proof mobile substation consists of mine explosion-proof dry-type transformers, high-voltage load switches for mine explosion-proof mobile substations or high-voltage vacuum switches for mine explosion-proof mobile substations and cables for mine explosion-proof mobile substations It is composed of a connector, a low-voltage feed switch for mine explosion-proof mobile substation or a low-voltage protection box for mine explosion-proof mobile substation. It has the protection performance of leakage, leakage lockout, overload, short circuit, overvoltage and undervoltage.

KBSGZY series mine explosion-proof mobile substation is a complete set of movable power supply and transformation equipment for underground coal mines. It is not only suitable for the mine environment with mixed gas and coal dust and explosion hazard, but also for insufficient In a gas and vapor environment that corrodes metals and destroys insulation.

## 型号含义
## Type Meaning




## 正常使用条件
## Normal Use Conditions

安装高度不超过海拔 1000m，特殊环境另作说明；

环境温度：

- 最高气温 +40℃；
- 最热月平均气温 +30℃；
- 最高年平均气温 +20℃；
- 最低气温 −5℃。

周围空气相对湿度不超过 95%(+25℃时 )；

在有甲烷混合气体和煤尘，且有爆炸危险的矿井中；

无强烈颠簸、震动和垂直面的倾斜度不超过 15° 的环境中；

无足以腐蚀金属和破坏绝缘的气体和蒸汽；

无滴水的场所；

电源电压的波形近似于正弦波；

三相电源电压近似对称。

( 超出本条件规定时，请另行说明 )

The installation height does not exceed 1000m above sea level, special environment will be explained separately;

Environment temperature:

- Ambient temperature:The highest temperature +40℃ ;
- Average temperature of the hottest month +30℃ ;
- The highest annual average temperature +20℃ ;
- The lowest temperature is −5℃ .

The relative humidity of the surrounding air does not exceed 95% (at +25℃ );

In mines where there is a mixture of methane gas and coal dust, and there is a danger of explosion; In an environment where there is no strong bumps, vibrations, and the inclination of the vertical plane does not exceed 15° ;

There is no gas and steam sufficient to corrode metals and destroy insulation;

Places without dripping water;

The waveform of the power supply voltage is similar to a sine wave;

The three−phase power supply voltage is approximately symmetrical.

(If it exceeds the requirements of these conditions, please specify separately)





## 产品标准
## Product Standards

GB 8286−2005　　GB 3836−2000

GB/T10228−2008　　GB1094−11−2007

## 6KV 级 KBSGZY 系列矿用隔爆型移动变电站技术参数
## Technical parameters of 6KV class KBSGZY series mine explosion-proof mobile substation

| 额定容量 Rated Capacity(kVA) | 电压组合 Voltage combination(kV) | 联结方式 Connection method | 损耗 loss(kW) 空载 No load | 负载 load(145℃ ) | 空载电流 No−load current(%) | 阻抗电压 Impedance voltage(%) | 外形尺寸 (mm) ( 长 L× 宽 B× 高 H) outline dimension | 重量 Weight(kg) | 轨距 gauge (mm) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | 高压 High Voltage (6±5%)； 低压 Low Voltage 0.693/0.4 1.2/0.693 1.2 3.45. | Yy0 (d11) | 350 | 550 | 2.5 | 4 | 3290×950×1160 | 2350 | 600 |
| 100 | | | 520 | 920 | 2.5 | 4 | 3580×950×1430 | 2600 | |
| 200 | | | 820 | 1550 | 2 | 4 | 3710×950×1445 | 3050 | 600 900 |
| 250 | | | 950 | 1800 | 2 | 4 | 3820×965×1530 | 3300 | |
| 315 | | | 1100 | 2150 | 1.8 | 4 | 3870×975×1540 | 3500 | |
| 400 | | | 1300 | 2600 | 1.8 | 4 | 3890×995×1550 | 3600 | |
| 500 | | | 1500 | 3100 | 1.5 | 4 | 3910×1050×1570 | 4100 | |
| 630 | | | 1800 | 3680 | 1.5 | 4 | 4085×1080×1450 | 5360 | |
| 800 | | Yy0 (d11) Dyn11 | 2050 | 4500 | 1.0 | 4 | 4085×1080×1510 | 5680 | |
| 1000 | | | 2350 | 5400 | 1.0 | 4 | 4100×1130×1540 | 6500 | |
| 1250 | | | 2750 | 6500 | 1.0 | 4 | 4190×1160×1610 | 6700 | |
| 1600 | | | 3350 | 8000 | 0.8 | 4 | 4190×1200×1750 | 9230 | |
| 2000 | | | 3800 | 9500 | 0.6 | 4.5 | 4570×1220×1790 | 9930 | |
| 2500 | | | 4500 | 10600 | 0.6 | 5 | 4580×1230×1850 | 13830 | |
| 3150 | | | 5300 | 12500 | 0.6 | 5.5 | 4820×1260×1890 | 17250 | |
| 4000 | | | 6100 | 14000 | 0.6 | 6 | 4930×1400×1920 | 19810 | |

## 10KV 级 KBSGZY 系列矿用隔爆型移动变电站技术参数
## Technical parameters of 10KV class KBSGZY series mine explosion-proof mobile substation

| 额定容量 Rated Capacity(kVA) | 电压组合 Voltage combination(kV) | 联结方式 Connection method | 损耗 loss(kW) 空载 No load | 负载 load (145℃ ) | 空载电流 No−load current(%) | 阻抗电压 Impedance voltage(%) | 外形尺寸 (mm) ( 长 L× 宽 B× 高 H) outline dimension | 重量 weight (kg) | 轨距 gauge (mm) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | 高压 High Voltage (10±5%)； 低压 Low Voltage 0.693/0.4 1.2/0.693 1.2 3.45. | Yy0 (d11) | 390 | 680 | 2.5 | 4 | 3200×950×1295 | 2400 | 600 |
| 100 | | | 560 | 1050 | 2.5 | 4 | 3580×950×1430 | 2800 | |
| 200 | | | 950 | 1800 | 2 | 4 | 3990×950×1525 | 3200 | 600 900 |
| 250 | | | 1100 | 2100 | 2 | 4 | 4020×950×1540 | 3500 | |
| 315 | | | 1300 | 2500 | 1.8 | 4 | 4050×980×1555 | 3800 | |
| 400 | | | 1500 | 3000 | 1.8 | 4 | 4200×1050×1610 | 4000 | |
| 500 | | | 1750 | 3500 | 1.5 | 4 | 4200×1050×1610 | 4300 | |
| 630 | | | 2000 | 4100 | 1.5 | 4 | 4370×1080×1450 | 5400 | |
| 800 | | Yy0 (d11) Dyn11 | 2300 | 5100 | 1.2 | 4 | 4370×1080×1600 | 5700 | |
| 1000 | | | 2600 | 6100 | 1.2 | 4.5 | 4400×1110×1675 | 6900 | |
| 1250 | | | 3100 | 7400 | 1.0 | 4.5 | 4480×1125×1740 | 7300 | |
| 1600 | | | 3800 | 8500 | 1.0 | 5 | 4640×1245×1830 | 9300 | |
| 2000 | | | 4500 | 9700 | 0.7 | 5 | 4665×1250×1900 | 11900 | |
| 2500 | | | 5200 | 10800 | 0.7 | 5.5 | 4870×1390×1900 | 14930 | |
| 3150 | | | 6100 | 12800 | 0.7 | 5.5 | 4880×1390×1990 | 19350 | |
| 4000 | | | 7000 | 15000 | 0.7 | 6 | 5210×1450×1900 | 21910 | |

注：以上数据仅供参考，移动站的外形尺寸根据开关不同而不同。

Note: The above data is for reference only, and the external dimensions of the mobile station vary depending on the switch.

SNTOOM

# 矿用隔爆型干式变压器

FLAMEPROOF DRY-TYPE TRANSFORMER FOR MINE




## 产品特点
## Features

KBSG 矿用隔爆型干式变压器符合 GB8286-2005《矿用隔爆型移动变电站》标准的要求。绝缘材料热稳定性好，采用 H 级或 C 级绝缘，冷却方式采用 ANAN，适用于有甲烷混合气体和煤尘，且有爆炸危险的矿井、矿山、隧道等环境，也适用于不足以腐蚀金属和破坏绝缘的气体及蒸汽环境中。在额定频率为 50Hz，一次侧电压为 6kV 或 10kV，中性点不接地的三相电力系统中运行，为使用环境中的各种动力设备和各种用电装置提供电源。

KBSG mine explosion-proof dry-type transformer meets the requirements of GB8286-2005 "Explosion-proof Mobile Substation for Mine". The insulation material has good thermal stability. It adopts H-class or C-class insulation, and the cooling method adopts ANAN. It is suitable for mines, mines, tunnels and other environments with methane mixed gas and coal dust, and explosion hazard, and also suitable for insufficient corrosion of metals And in a gas and vapor environment that destroys insulation. It operates in a three-phase power system with a rated frequency of 50Hz, a primary voltage of 6kV or 10kV, and an ungrounded neutral point, providing power for various power equipment and various electrical devices in the use environment.

## 型号含义
## Type Meaning

K B S G - □/□

- □ 额定电压 Rated voltage
- □ 额定容量 Rated Capacity
- G 干式 Dry
- S 三相 Three phase
- B 隔爆型 Flameproof
- K 矿用 Mine





## 正常使用条件
## Normal Use Conditions

安装高度不超过海拔 1000m，特殊环境另作说明；

环境温度：

- 最高气温 +40℃；
- 最热月平均气温 +30℃；
- 最高年平均气温 +20℃；
- 最低气温 -5℃。

周围空气相对湿度不超过 95%(+25℃时 )；

在有甲烷混合气体和煤尘，且有爆炸危险的矿井中；

无强烈颠簸、震动和垂直面的倾斜度不超过 15° 的环境中；

无足以腐蚀金属和破坏绝缘的气体和蒸汽；

无滴水的场所；

电源电压的波形近似于正弦波；

三相电源电压近似对称。

( 超出本条件规定时，请另行说明 )

The installation height does not exceed 1000m above sea level. Special environment will be explained separately;

Environment temperature:

- Ambient temperature:The highest temperature +40℃ ;
- Average temperature of the hottest month +30℃ ;
- The highest annual average temperature +20℃ ;
- The lowest temperature is -5℃ ..

The relative humidity of the surrounding air does not exceed 95% (at +25℃ );

In mines where there is a mixture of methane gas and coal dust, and there is a danger of explosion;

In an environment where there is no strong bumps, vibrations, and the inclination of the vertical plane does not exceed 15° ;

There is no gas and steam sufficient to corrode metals and destroy insulation;

Places without dripping water;

The waveform of the power supply voltage is similar to a sine wave;

The three-phase power supply voltage is approximately symmetrical.

(If it exceeds the requirements of these conditions, please specify separately)

## 产品标准
## Product Standards

GB 8286-2005　GB 3836-2000

GB/T10228-2008　GB1094-11-2007

## 6KV 级 KBSG 系列矿用隔爆型干式变压器技术参数
## Technical parameters of 6KV class KBSG series mine flameproof dry-type transformer

| 额定容量 Rated Capacity(kVA) | 电压组合 Voltage combination(kV) | 联结方式 Connection method | 损耗 loss(kW) 空载 No load | 负载 load(145℃) | 空载电流 No-load current(%) | 阻抗电压 Impedance voltage(%) | 外形尺寸 (mm) (长 L× 宽 B× 高 H) outline dimension | 重量 weight (kg) | 轨距 gauge (mm) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | 高压 High Voltage (6±5%); 低压 Low Voltage 0.693/0.4 1.2/0.693 1.2 3.45. | Yy0 (d11) | 350 | 550 | 2.5 | 4 | 2225×950×1160 | 1350 | 600 |
| 100 | | | 520 | 920 | 2.5 | 4 | 2500×950×1430 | 1600 | |
| 200 | | | 820 | 1550 | 2 | 4 | 2640×950×1445 | 2050 | 600 900 |
| 250 | | | 950 | 1800 | 2 | 4 | 2750×965×1530 | 2300 | |
| 315 | | | 1100 | 2150 | 1.8 | 4 | 2830×975×1540 | 2500 | |
| 400 | | | 1300 | 2600 | 1.8 | 4 | 2830×995×1550 | 2650 | |
| 500 | | | 1500 | 3100 | 1.5 | 4 | 2850×1050×1570 | 3100 | |
| 630 | | | 1800 | 3680 | 1.5 | 4 | 3020×1080×1450 | 4310 | |
| 800 | | Yy0 (d11) Dyn11 | 2050 | 4500 | 1.0 | 4 | 3020×1080×1510 | 4650 | |
| 1000 | | | 2350 | 5400 | 1.0 | 4 | 3030×1130×1540 | 5150 | |
| 1250 | | | 2750 | 6500 | 1.0 | 4 | 3120×1160×1610 | 5900 | |
| 1600 | | | 3350 | 8000 | 0.8 | 4 | 3120×1200×1750 | 7250 | |
| 2000 | | | 3800 | 9500 | 0.6 | 4.5 | 3225×1220×1790 | 10820 | |
| 2500 | | | 4500 | 10600 | 0.6 | 5 | 3580×1230×1850 | 13850 | |
| 3150 | | | 5300 | 12500 | 0.6 | 5.5 | 3820×1260×1890 | 18250 | |
| 4000 | | | 6100 | 14000 | 0.6 | 6 | 3930×1400×1920 | 20810 | |

## 10KV 级 KBSG 系列矿用隔爆型干式变压器技术参数
## Technical parameters of 10KV class KBSG series mine flameproof dry-type transformer

| 额定容量 Rated Capacity(kVA) | 电压组合 Voltage combination(kV) | 联结方式 Connection method | 损耗 loss(kW) 空载 No load | 负载 load(145℃) | 空载电流 No-load current(%) | 阻抗电压 Impedance voltage(%) | 外形尺寸 (mm) (长 L× 宽 B× 高 H) outline dimension | 重量 weight (kg) | 轨距 gauge (mm) |
|---|---|---|---|---|---|---|---|---|---|
| 50 | 高压 High Voltage (10±5%); 低压 Low Voltage 0.693/0.4 1.2/0.693 1.2 3.45 | Yy0 (d11) | 390 | 680 | 2.5 | 4 | 2310×950×1295 | 1400 | 600 |
| 100 | | | 560 | 1050 | 2.5 | 4 | 2430×950×1430 | 1800 | |
| 200 | | | 950 | 1800 | 2 | 4 | 2730×950×1525 | 2200 | 600 900 |
| 250 | | | 1100 | 2100 | 2 | 4 | 2760×950×1540 | 2500 | |
| 315 | | | 1300 | 2500 | 1.8 | 4 | 2800×980×1555 | 2800 | |
| 400 | | | 1500 | 3000 | 1.8 | 4 | 2950×1050×1610 | 3000 | |
| 500 | | | 1750 | 3500 | 1.5 | 4 | 2950×1050×1610 | 3300 | |
| 630 | | | 2000 | 4100 | 1.5 | 4 | 3200×1080×1450 | 4400 | |
| 800 | | Yy0 (d11) Dyn11 | 2300 | 5100 | 1.2 | 4 | 3200×1080×1600 | 4700 | |
| 1000 | | | 2600 | 6100 | 1.2 | 4.5 | 3200×1110×1675 | 5900 | |
| 1250 | | | 3100 | 7400 | 1.0 | 4.5 | 3250×1125×1740 | 6500 | |
| 1600 | | | 3800 | 8500 | 1.0 | 5 | 3450×1245×1830 | 8300 | |
| 2000 | | | 4500 | 9700 | 0.7 | 5 | 3665×1250×1900 | 10900 | |
| 2500 | | | 5200 | 10800 | 0.7 | 5.5 | 3780×1390×1900 | 13930 | |
| 3150 | | | 6100 | 12800 | 0.7 | 5.5 | 3880×1390×1900 | 18350 | |
| 4000 | | | 7000 | 15000 | 0.7 | 6 | 4210×1450×1900 | 20910 | |

注：以上数据仅供参考，移动变电站的外形尺寸根据开关不同而不同。
Note: The above data is for reference only. The external dimensions of the mobile substation vary according to the switch.



SNTOOM

三相油浸式矿用电力变压器
THREE-PHASE OIL-IMMERSED MINE POWER TRANSFORMER



## 产品特点
## Features

Ks9 系列矿用变压器，作为矿井的配电设备，该产品具有体积小、易下井、结构合理、损耗低、散热性能好等特点。

本系列产品采用优质的晶粒取向优质高导磁性能硅钢片叠装而成，铁芯为芯式铁芯，全斜接缝迭积式铁芯，其铁芯柱为多级圆截面，确保低噪音低损耗。油箱结构坚固，箱壁两侧焊有高、低压电缆接线盒，作为电缆接线之用，高压线圈须有额定电压 ±5% 的分接电压，利用分接开关变换电压。变换电压时，必须先切断电源，然后去除箱壁上分接开关的风雨罩进行变换电压。变压器低压侧允许“Y”型接成 693V 或“D”型接成 400V 供电，在电缆接线盒内直接装次级端头引出六个瓷套供用户改接。变压器吊装利用焊在箱壁的吊攀，变压器箱底均装有拖撬，在拖撬上备有安装孔，可供矿井需要时加装矿车滚轮。

The Ks9 series of mine transformers, as power distribution equipment in mines, have the characteristics of small size, easy downhole, reasonable structure, low loss, and good heat dissipation performance.

This series of products are made of high-quality grain-oriented, high-quality, high-magnetic-permeability silicon steel sheets stacked. The iron core is a core-type iron core and a fully-inclined-joint laminated iron core. The iron core column has a multi-level circular cross-section to ensure Low voice and low loss. The oil tank has a sturdy structure, and high and low voltage cable junction boxes are welded on both sides of the tank wall for cable wiring. The high voltage coil must have a tap voltage of ±5% of the rated voltage, and the tap switch is used to change the voltage. When changing the voltage, you must first cut off the power supply, and then remove the weather cover of the tap switch on the box wall to change the voltage. The low-voltage side of the transformer allows the "Y" type to be connected to 693V or the "D" type to be connected to 400V for power supply, and the secondary end is directly installed in the cable junction box to lead out six ceramic sleeves for users to modify. The transformer is hoisted using a hanging bracket welded to the wall of the box. The bottom of the transformer box is equipped with a towing skid. There are mounting holes on the towing skid, which can be used to install the mine cart roller when the mine needs it.

## 型号含义
## Type Meaning




## 使用范围
## Use range

适用于容量 630KVA 及以下，电压为 10KV 及以下的油浸式矿用电力变压器。此类型矿用变压器是一般型油浸式变压器，并无防爆要求，主要作为矿井配电时的矿用照明或电力拖动的电源。凡本系列变压器经运输后，不需作吊心检查，即可装配有关拆卸的零部件，做验收试验项目。

Suitable for oil-immersed mine power transformers with a capacity of 630KVA and below and a voltage of 10KV and below. This type of mine transformer is a general oil-immersed transformer without explosion-proof requirements. It is mainly used as a power source for mine lighting or electric drive during mine power distribution. After the transformers of this series are transported, the relevant disassembled parts can be assembled without the need for hanging inspection, and the acceptance test items can be done.

## 遵循标准
## Follow the standard

本系列变压器所遵循的标准：

GB1094.1~2-1996、GB1094.3,5-2003、GB/T6451-2008、GB12173-2008。

Standards followed by this series of transformers:

GB1094.1~2-1996, GB1094.3, 5-2003, GB/T6451-2008, GB12173-2008.

## 正常使用条件
## Normal Use Conditions

高度不超过海拔 1000m，特殊环境另作说明；

环境温度：

- 最高气温 +40℃；
- 最高日平均气温 +25℃；
- 最高年平均气温 +20℃；
- 户外最低气温 -20℃。

周围空气相对湿对不大于 95%(+25℃时 )；

安装在矿井下虽有煤尘、瓦斯，但无爆炸危险的场所；

电源电压的波形近似地正弦波；

The altitude does not exceed 1000m above sea level, special environment will be explained separately;

Ambient temperature:

- The highest temperature +40℃ ;
- The highest daily average temperature +25℃ ;
- The highest annual average temperature +20℃ ;
- The minimum outdoor temperature is -20℃ .

The relative humidity of the surrounding air is not more than 95% (at +25℃ );

Install in a place where there is coal dust and gas but no explosion hazard under the mine;

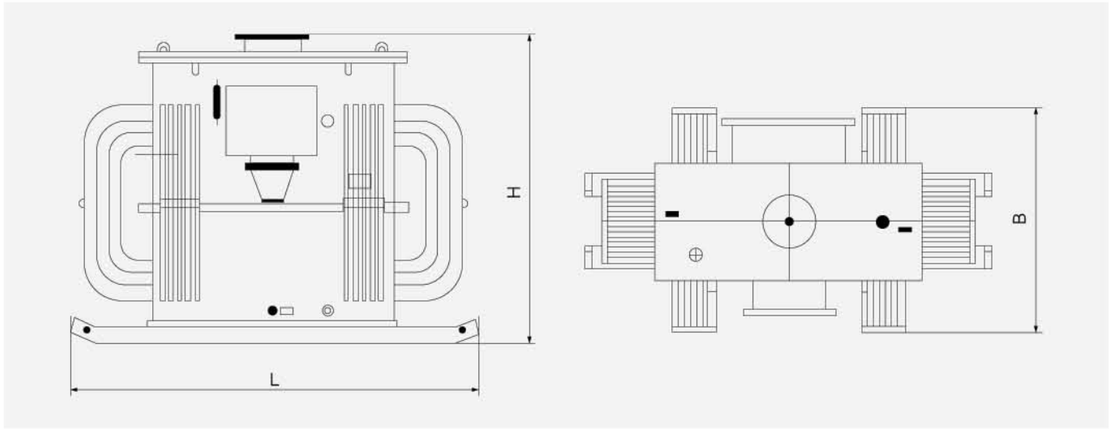
The waveform of the power supply voltage is approximately sine wave;





## KS9 系列油浸式矿用变压器
## KS9 series oil-immersed mine transformer

| 额定容量 Rated Capacity (kVA) | 电压组合 Voltage combination (kV) | 联结方式 Connection method | 损耗 loss(kW) 空载 No load | 损耗 loss(kW) 负载 load(75℃) | 空载电流 No-load current(%) | 阻抗电压 Impedance voltage(%) | 重量 weight(kg) 器身重 Body weight | 重量 weight(kg) 油重 Oil weight | 重量 weight(kg) 总重 Gross weight | 外形尺寸 (mm) (长 L× 宽 B× 高 H) outline dimension |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | 高压 High Voltage 10 6 低压 Low Voltage 0.693/0.4 | Yy0-d11 | 0.17 | 0.87 | 2.0 | 4 | 230 | 80 | 390 | 1200×950×900 |
| 80 | | | 0.25 | 1.25 | 1.8 | | 310 | 100 | 530 | 1300×950×950 |
| 100 | | | 0.29 | 1.50 | 1.6 | | 360 | 110 | 600 | 1300×950×1000 |
| 125 | | | 0.34 | 1.80 | 1.5 | | 425 | 120 | 690 | 1300×950×1000 |
| 160 | | | 0.40 | 2.20 | 1.4 | | 480 | 140 | 810 | 1350×950×1040 |
| 200 | | | 0.48 | 2.60 | 1.3 | | 580 | 170 | 955 | 1400×970×1080 |
| 250 | | | 0.56 | 3.05 | 1.2 | | 670 | 180 | 1100 | 1450×1000×1150 |
| 315 | | | 0.67 | 3.65 | 1.1 | | 775 | 240 | 1305 | 1500×1000×1150 |
| 400 | | | 0.80 | 4.30 | 1.0 | | 940 | 280 | 1570 | 1600×1050×1150 |
| 500 | | | 0.96 | 5.10 | 1.0 | | 1155 | 300 | 1790 | 1650×1050×1200 |
| 630 | | | 1.20 | 6.20 | 0.9 | 4.5 | 1310 | 345 | 2150 | 1650×1120×1220 |




## 矿用检验合格证编号
## Mining inspection certificate number

| 产品名称 product name | 产品型号 Product number | 证书编号 Certificate No | 发证单位 Issuing unit |
|---|---|---|---|
| 油浸矿用变压器 Oil immersed mine transformer | KS9-100/10 | 10901137 | 国家煤矿防爆质量监督检验中心 National Coal Mine Explosion-proof Quality Supervision and Inspection Center |
| | KS9-250/10 | 10901137 | |
| | KS9-315/10 | 10901137 | |
| | KS9-400/10 | 10901137 | |
| | KS9-500/10 | 10901137 | |
| | KS9-630/10 | 10901137 | |
| | KS9-800/10 | 10901137 | |
| | KS11-100/10 | 10901089 | |
| | KS11-250/10 | 10901089 | |
| | KS11-315/10 | 10901089 | |
| | KS11-400/10 | 10901089 | |
| | KS11-500/10 | 10901089 | |
| | KS11-630/10 | 10901089 | |
| | KS11-800/10 | 10901089 | |