

变压器/稳压器/隧道电力升降压器/电抗器/调压器/变频电源/ups 不间断电源等制造商

产品规格书

Product Specification

产品名称 Product	SG 干式自耦式变压器 SG Dry-Type Autotransformer
产品型号 Model	SG-45KVA
电压规格 specification	输入: 380V 输出: 220V/200V
规格书编号 NO	20250814045001
更新日期 DATE	2025-08



技术参数

Technical Parameter

型号 (Model) : SG-45

容量 (Capacity) : 45KVA.

相数 (Phase) : 3相

频率 (Frequency) : 50/60Hz.

输入电压 (Input) : AC 380V \pm 15%.

输出电压 (Output) : AC 220V \pm 2%.

反应时间 (Reaction time) : 当输入电压跳跃变在 10V 内反应时间为 1 秒。

(When the input voltage jump is within 10V, the reaction time is 1s) .

连接组别 (Connection) : D/d;D/y;Y/y;Y/d;Y/yn

绝缘等级 (Glass) : F 级.

负载测试 (Load test) : EN-61558-2-4 , JEC-204.

耐压测试 (Withstand voltage test) : 初级与次级之间 AC 2500V / 分钟无异常, 初次级与铁芯之间 AC 2500V / 分钟无异常。

(AC2500V/min between primary and secondary is normal.No abnormal AC 2500V/min between primary coil and iron core)

温升 (temperature rise) : 在全负荷连续运行下每个绕组与铁芯在夏天的温升 \leq 70 $^{\circ}$ C

Under full load continuous operation, the temperature of each winding and core in summer is \leq 70 $^{\circ}$ C

绝缘电阻 (Insulation resistance) : \geq 100M Ω

工作效率 (Work efficiency) : 自耦 Self - couple \geq 98%, 隔离 Isolation \geq 95% \geq

超载能力 (Overload capacity) : 允许超过 1.2 倍负载 (More than 1.2 times the load is allowed).

波形失真 (Waveform distortion) : 无失真 No distortion .

噪音 (Noise) : \leq 45db/1 米内 Within \leq 45db / 1 m.

温度 (Temperature) : 存放温度 Storage temperature -20 ~60 $^{\circ}$ C ,

工作温度 Working temperature-10 ~ 40 $^{\circ}$ C .

湿度 (Humidity) : 30-90%无凝结 30-90% non condensing.

防护等级 (Degree of protection) : 裸机 IP00 Bare metal LP00.

冷却方式 (Cooling mode) : 干式风冷 Dry air cooling.

设计寿命 (Design life) : 20 years.

执行标准 (Executive standard) : GB 19212.14 - 2012 (EN IEC61558 - 1)

外观尺寸

Appearance dimension



前视图 Front view



左视图 Left view



后视图 Rear view



后视安装图 Rear view

设备尺寸 (Equipment size) : 长(L)600*宽(W)420*高(H)550mm

电源净重 (Net weight) : 125KG

由于设备规格型号及产品参数随品质提高会有变更, 对此恕不通知, 以实物为准!

工作原理

Working principle

变压器是借助于电磁感应，以相同的频率、在两个或更多绕组之间，变换交流电压和电流而传输交流电能的一种静止电器。

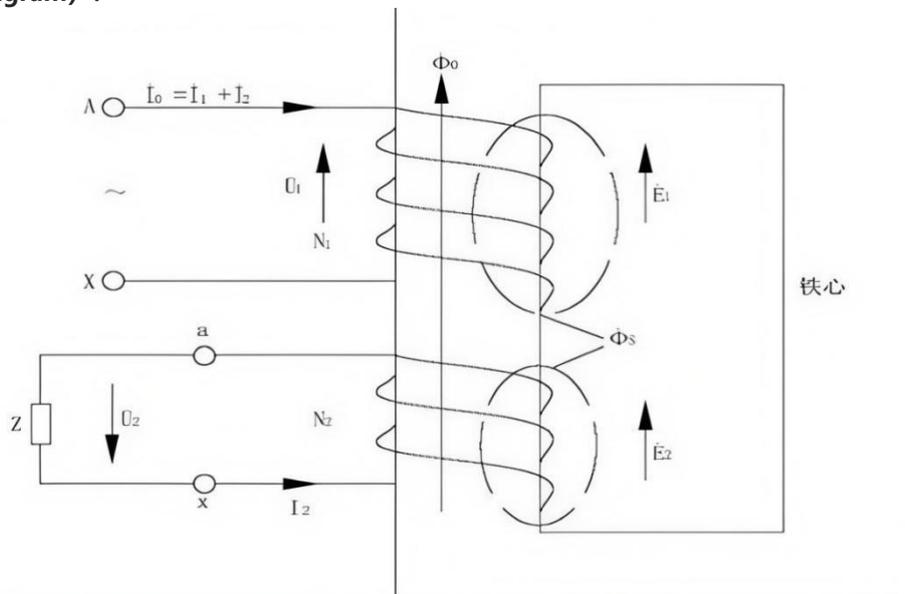
A transformer is a static electrical device that transfers alternating current (AC) electrical energy through electromagnetic induction, transforming AC voltage and current between two or more windings at the same frequency.

其工作原理如下 (Its working principle is as follows) :

变压器的基本原理是电磁感应，现以单相双绕组(或互感式三相中一相)变压器为例来加以说明。如图 1 所示：它由两个绕组和一个铁心组成。当匝数为 N_1 的一次绕组 AX 接到频率为 f 、电压为 U_1 的交流电源上时，很小的励磁电流 I_0 就足以在铁心中产生主磁通 Φ_0 (最大值为 Φ_m) 以及经铁心外回路的漏磁通 Φ_s ， Φ_0 在一、二次绕组中分别感应出电势 E_1 、 E_2 ，二次绕组 ax 端就有电压 U_2 。当二次绕组接有负载时，二次绕组就流通电流 I_2 ，而一次电流就由空载时励磁电流 I_0 增至 I_1 。

The basic principle of a transformer is electromagnetic induction. Let's take a single-phase two-winding transformer (or one phase of an mutual inductance three-phase transformer) as an example to illustrate. As shown in Figure 1, it consists of two windings and an iron core. When the primary winding AX with N_1 turns is connected to an AC power supply with frequency f and voltage U_1 , a small excitation current I_0 is sufficient to generate a main magnetic flux Φ_0 (with a maximum value of Φ_m) in the iron core, as well as a leakage flux Φ_s passing through the external circuit of the iron core. Φ_0 induces electromotive forces E_1 and E_2 in the primary and secondary windings respectively, and there will be a voltage U_2 at the ax terminal of the secondary winding. When the secondary winding is connected to a load, a current I_2 flows through the secondary winding, and the primary current increases from the no-load excitation current I_0 to I_1 .

图示 (Diagram) :



产品特点 (Product Features):

功率足 Sufficient power output

高效节能 High efficiency and energy-saving

寿命长 Long service life

阻燃性高 High flame retardancy

质量稳定 Stable quality

安装方便 Easy to install

安装接线

Installation Wiring

A. 接线时, 请选择适当的线缆及线耳, 以保证输入、输出端的可靠连接。产品四周及顶部必须留有足够的散热空间和维护保养空间。

When wiring, please select appropriate cables and cable lugs to ensure reliable connection of input and output terminals. Sufficient heat dissipation space and maintenance space must be reserved around and on the top of the product

B. 输入、输出线缆, 必须考虑负载率、截流量、散热条件、环境状况、敷设方式、传输长度等因素

For input and output cables, factors such as load rate, current-carrying capacity, heat dissipation conditions, environmental conditions, laying method, and transmission length must be considered.

C. 当输出回路中存在零序电流或三相不平衡度较大时, 零线截面积应加大到接近或等于相线截面积。输入、输出均有标识, 请按照规定的标识连接, 切勿接错

When there is zero-sequence current in the output circuit or the three-phase unbalance degree is large, the cross-sectional area of the neutral wire should be increased to be close to or equal to that of the phase wire. Both input and output are marked; please connect according to the specified markings and do not connect incorrectly.

D. 接线前用万用表或兆欧表, 分别测量变压器输入/输出端对机壳/地线是否短路或绝缘电阻至 1M 以下。如是请即通知本公司技术服务中心处理

Before wiring, use a multimeter or megohmmeter to respectively measure whether the input/output terminals of the transformer are short-circuited to the chassis/ground wire, or if the insulation resistance is below 1MΩ. If so, please immediately notify our company's Technical Service Center for handling.

E. 接线前请核对端子标称的电压是否与您使用要求相同

Before wiring, please check whether the nominal voltage of the terminals is consistent with your usage requirements.

F. 接线时请使用适当的工具, 务必保持必要的联接力, 这样不致使连接点产生过大的接触电阻而发热

Please use appropriate tools during wiring and ensure necessary connection force, so as to prevent excessive contact resistance at the connection point which may cause heating.

G. 对于三相变压器, 应将各相的负载尽可能均匀分布配置, 以免三相负载不平衡甚至造成变压器某相负荷超载而发生故障

For three-phase transformers, the loads of each phase should be distributed and configured as evenly as possible to avoid three-phase load unbalance or even overload on a certain phase of the transformer, which may lead to malfunctions.



警告 (Warning) :

切勿将输入/输出反接, 切勿将相线与零线反接!

Do not reverse the input and output connections, and do not reverse the phase wire and neutral wire!

例如图示 (As shown in the illustration) :



禁止触摸

通电时 (When power is applied)



零线

地线

注 (Note) : 接线请务必按照实物电压标识进行操作! (When wiring, please be sure to operate in accordance with the voltage markings on the actual product!)

使用条件

Service Conditions

- A、无水滴、蒸汽及油性灰尘； No water droplets, steam, or oily dust
- B、无腐蚀、易燃、易爆气体、液体； No corrosive, flammable, or explosive gases or liquids
- C、无漂浮性尘埃及金属微粒； No floating dust or metal particles
- D、坚固无振动之基础； A solid and vibration-free foundation
- E、环境条件 (Environmental conditions) :

室内型(Indoor type):

最低温度 Minimum temperature: -5°C (室内 indoor)

最高温度 Maximum temperature: $+40^{\circ}\text{C}$

最热月平均温度 Average temperature of the hottest month: $+30^{\circ}\text{C}$

最高年平均温度 Maximum annual average temperature: $+20^{\circ}\text{C}$

湿度 Humidity: $<93\%$ (线圈表面无水滴 no water droplets on the coil surface)

海拔 Altitude: $<1000\text{m}$

电源电压的波形近似正弦波($\text{THD} \leq 5\%$)及三相电源电压近似对称

The waveform of the power supply voltage is approximately sinusoidal ($\text{THD} \leq 5\%$) and the three-phase power supply voltage is approximately symmetrical;

电网中瞬态尖峰电压 $\text{UP-P} \leq 2000\text{V}$,无雷击。

Transient peak voltage in the power grid: $\text{UP-P} \leq 2000\text{V}$, no lightning strikes;

变压器四周及顶部应留有足够散热空间和维护保养空间

Sufficient heat dissipation space and maintenance space should be reserved around and on top of the transformer.

存放环境 (Storage Conditions) :

产品应存放在 $-20 \sim +40^{\circ}\text{C}$ 和相对湿度不大于 80%的干燥、通风、无腐蚀性气体影响的场所内。

The product should be stored in a dry, well-ventilated area free from corrosive gases, with a temperature range of -20°C to $+40^{\circ}\text{C}$ and a relative humidity not exceeding 80%.

运输环境(Transportation Conditions):

产品运输时应有必须的包装物, 运输中应避免雨、雪的直接淋袭和剧烈的颠簸及机械撞击。

The product must be properly packaged during transportation. During transit, direct exposure to rain or snow, severe jolts, and mechanical impacts should be avoided.

!!! 注意 (Attention) :

本产品只能用于本手册所认可的场合, 未经认可的使用环境可能导致火灾、漏电等事故。

This product shall only be used in the scenarios approved by this manual. Unauthorized use environments may lead to accidents such as fire or electric leakage.

日常维护工作

Daily Maintenance Work

在通常情况下，干式电力变压器无需维护。但在多尘或有害物场所，检查时应特别注意接线端子、绕组的底部和端部有无积尘。可用不超过 2 个大气压的压缩空气器吹净通风道和表面的灰尘。平时运行巡视检查中禁止触摸，注视观察应注意紧固部件有无松动发热，绕组绝缘表面有无龟裂、爬电和碳化痕迹，声音是否正常。

Under normal circumstances, dry-type power transformers do not require maintenance. But in dusty or hazardous areas, special attention should be paid to whether there is dust accumulation at the bottom and end of the wiring terminals and windings during inspection. Compressed air with a pressure not exceeding 2 atmospheres can be used to blow away dust from the ventilation duct and surface. During regular operation and inspection, touching is prohibited. Attention should be paid to whether the fastening components are loose or overheating, whether there are cracks, creepage and carbonization marks on the insulation surface of the winding, and whether the sound is normal.

变压器使用中要经常检查风扇是否运转正常。当变压器出现故障或疑似故障时、请致电本公司技术支持部门。当需要工程师上门服务时，请确认到达时能否停机检查及是否具备检修条件。

During the operation of the transformer, it is necessary to regularly check whether the fans are running normally. In case of transformer failure or suspected failure, please call our company's technical support department. When on-site service from an engineer is required, please confirm whether the transformer can be shut down for inspection upon their arrival and whether the maintenance conditions are met.

!!! 注意 (Attention) :

发现输出电压偏离额定电压较多时，首先检查输入电压是否正常，是否缺相。

When the output voltage deviates significantly from the rated voltage, first check whether the input voltage is normal and whether there is a phase loss

当变压器有异味时，应检查是否缺相，负载是否超过变压器的额定电流较多及风扇是否正常运行。如以上情况与正常仍有异味时，请通知本公司或代理商处理。

When a transformer emits an unusual odor, check for the following: whether there is a phase loss, whether the load exceeds the transformer's rated current by a significant margin, and whether the fans are operating normally. If all the above conditions are normal but the odor persists, please notify our company or the authorized distributor for handling.



危险 :

维护时必须停电操作，并在电源侧悬挂“禁止合闸，有人工作”警示牌，验电、放电后再进行作业

During maintenance, power must be cut off first. A warning sign reading "Do Not Close Switch - Personnel Working" shall be hung on the power supply side. Maintenance operations can only be carried out after verifying no electricity (voltage testing) and discharging residual electricity.

避免在潮湿、雷雨天气进行维护，防止触电或设备损坏

Avoid performing maintenance in humid or thunderstorm weather to prevent electric shock or equipment damage.

标签 Label



铭牌 nameplate



合格证书 Certificate of Compliance



重要提示 Important Note



危险警告 Danger Warning

售后服务

After sales service

产品型号 (Product Model) : _____

使用单位 (User Unit) : _____

出厂编号 (Factory Serial Number) : _____

出厂时间 (Date of Manufacture) : _____

购机日期 (Date of Purchase) : _____

产品自交货到厂方安装检验合格之日起, 提供 1 年保修, 终身维护

The product comes with a 1-year warranty and lifetime maintenance, starting from the date when the manufacturer completes installation and inspection after delivery.

保修条例:

1. 保修产品时, 保修卡和购机单据, 若两者手续不全则不在免费保修范围。

or product warranty service, both the warranty card and purchase documents are required. If either document is incomplete, the product will not be eligible for free warranty.

2. 产品凡因人为损坏, 如: 不按说明书操作使用, 接入不适当电源或非经本公司维修中心认可自行维修等, 均不属于本保修范围

The warranty does not cover damages caused by human factors, such as: improper operation not in accordance with the instruction manual, connection to inappropriate power sources, or unauthorized repairs not approved by our company's service center.

3. 保修期满后, 为了能更持久完善地为您提供服务, 我们将酌情收取成本费。

After the warranty period expires, to continue providing you with sustained and comprehensive services, we will charge a reasonable cost fee as appropriate.

4. 客户对保修期另有要求, 可以按合同约定。

If customers have additional requirements for the warranty period, such terms shall be subject to the agreement specified in the contract.

24 小时服务电话: 13682491449