国/内/争/第/一世/界/创/名/牌

亚威变压器
YAWEI TRANSFORMER

树脂绝缘干式变压器系列
SC(B) series Epoxy-resins insulation dry transformer

安装使用说明书
Instruction

江苏亚威变压器有限公司
JIANGSU YAWEI TRANSFORMER CO.,LTD

请仔细阅读说明并妥善保管

Please read the instructions carefully
and keep them properly

变压器保管须知

尊敬的用户您好，感谢您使用“亚威”牌变压器，请你按以下须知保管好变压器：

1、 变压器在运输、吊装过程中防止严重冲击和碰撞；
2、 变压器至工地，未拆箱前变压器应置于干燥、通风、避雨的平地；
3、 如变压器安装于地下配电室，应保持配电室内无积水，并防止有导电物质进入变压器内部；
4、 变压器就位后，若暂时不通电，应用防潮篷布盖罩；
5、 配电房施工时，要做好变压器的防护工作，加好防护盖，不得有异物进入变压器内部；
6、 变压器安装要平稳、牢靠，使用前请仔细阅读变压器使用说明产品保护；
7、 变压器就位后，应采取有效保护措施，防止铁件及杂物掉入线圈框内。并应保持器身清洁 干净；
8、 操作人员不得蹬踩变压器作业，应避免工具、材料掉下砸伤变压器；
9、 对安装的电气管线及其支架应注意保护，不得碰撞损伤；
10、 应避免在变压器上方操作电气焊，如不可避免时，应做好遮挡防护，防止焊渣掉下，损伤 设备。

敬请用户按照以上措施保管、使用，谢谢合作！

变压器主体技术咨询；0513-88783075 13912857788

Transformer Storage Instructions

Dear users, thank you for using the "Yawei" brand transformer, please keep the transformer according to the following instructions:

1. The transformer is prevented from serious impact and collision during transportation and hoisting;
2. The transformer should be placed on a dry, ventilated and rain-proof level before unpacking the transformer to the construction site;
3. If the transformer is installed in the underground power distribution room, keep the power distribution room free of water and prevent conductive substances from entering the transformer;
4. After the transformer is in place, if there is no power supply temporarily, apply a moisture-proof tarpaulin cover;
5. During the construction of the power distribution room, the protection of the transformer should be done well, and the protective cover should be added to prevent foreign objects from entering the inside of the transformer;
6. The installation of the transformer should be stable and reliable. Please read the instructions for use of the transformer carefully before use.
7. After the transformer is in place, effective protection measures should be taken to prevent iron parts and sundries from falling into the coil frame. And should keep the body clean;
8. Operators are not allowed to step on the transformer, and should avoid tools and materials falling and smashing the transformer;
9. Pay attention to the protection of the installed electrical pipelines and their brackets, and do not collide and damage them;
10. Electric welding should be avoided above the transformer. If it is unavoidable, shielding should be done to prevent the welding slag from falling off and damaging the equipment.

Please follow the above measures to keep and use, thank you for your cooperation!

Transformer main body technical consultation; 0513-88783075 13912857788

使用说明

♦温控仪电源电压交流 220V! !.

♦禁止在主体变压器低压侧——低压铜排上截取 220V 电源供温控使用！ ！

♦变压器做耐压试验时，应提前拔掉传感器插头，并关闭温控电源开关！ ！

♦温控仪在出厂前，已经将相关参数设定好，禁止随意调整!!确需要调整有关参数，请仔细阅 读说明书，或与厂方联系！ ！ （13912857788）

♦按风机手动键，可以临时打开风机对主体变压器进行冷却，但正常情况下该风机手动键不要 打开！ ！

特别警告!如果违反上述操作，可能会严重损坏风冷系统，特别是温控部分，导致变压器及整个供电系统瘫痪！ ！

♦无显示：

1、 查 1、2 接线端子有无 220V 交流电压：无，按上电源即可。有，继续查；

2、 有 220V,即电源输入正常，查电源开关是否打开：关，打开开关即可。开，继续查；

3、有 220V,电源开关也打开，查保险丝是否熔断：没有熔断，非专业人员停止检查。已经熔 断，继续查；

4、 保险丝熔断，说明负载电流较大，为安全起见暂先不更换保险丝，继续查。

5、 关掉电源开关，拆下风机连接线（3、4 端子）仔细逐一检查每一台风机是否卡壳（转不 动）、短路等，或带电测试每一台风机（注：带电测试时风机与风机之间的连线拆开），若发现损 坏，更换风机（或临时将故障风机断开），再更换保险丝，将风机连接好，接上电源应正常。

♦显示 HHHH

A 相、B 相、C 相任意一相显示 HHHH,基本确定该相感温探头已损坏，此时故障灯亮并报警， 更换探头（传感器）应正常。

♦风机：经长途运输及长期在仓库保存的风机，使用请检查机壳内是否有杂物，各部位连接是 否牢固，运转是否正常。

Instructions

♦The temperature controller power supply voltage is AC 220V!!.

♦ It is forbidden to intercept the 220V power supply on the low-voltage side of the main transformer - the low-voltage copper bar for temperature control! !

♦When the transformer is subjected to the withstand voltage test, the sensor plug should be unplugged in advance, and the temperature control power switch should be turned off! !

♦The temperature controller has already set the relevant parameters before the factory, and it is forbidden to adjust it at will!! If you really need to adjust the relevant parameters, please read the manual carefully, or contact the manufacturer! ! (13912857788)

♦Press the fan manual key to temporarily open the fan to cool the main transformer, but under normal circumstances, do not open the fan manual key! !

Special warning! If the above operation is violated, it may seriously damage the air cooling system,

especially the temperature control part, resulting in the paralysis of the transformer and the entire power supply system! !

♦No display:

1. Check whether the terminals 1 and 2 have 220V AC voltage: no, press the power supply. Yes, continue to check;

2. There is 220V, that is, the power input is normal, check whether the power switch is turned on: off, turn on the switch. open, continue to check;

3. If there is 220V, the power switch is also turned on, and check whether the fuse is blown: if it is not blown, non-professionals should stop checking. It has been blown, continue to check;

4. The fuse is blown, indicating that the load current is large. For the sake of safety, do not replace the fuse for the time being, and continue to check.

5. Turn off the power switch, remove the fan connecting wires (terminals 3 and 4), and carefully check whether each fan is stuck (not rotating), short-circuit, etc., or test each fan with electricity (Note: When the fan is tested with electricity, the fan If it is found damaged, replace the fan (or temporarily disconnect the faulty fan), then replace the fuse, connect the fan well, and connect to the power supply should be normal.

♦ Display HHHH

HHHH is displayed on any of the A-phase, B-phase, and C-phase, basically confirming that the temperature sensing probe of this phase is damaged. At this time, the fault light is on and an alarm is issued, and the replacement of the probe (sensor) should be normal.

♦ Fan: For fans that have been transported over long distances and stored in warehouses for a long time, please check whether there are sundries in the casing, whether the connection of each part is firm, and whether the operation is normal.

安装使用说明

本说明书适用于容量 2500kVA 以下，电压 35kV 及以下的绝缘干式变压器。

Installation instructions

This manual is applicable to insulated dry-type transformers with capacity below 2500kVA and voltage below 35kV.

—、产品技术规范

1.1 产品标准：GB 1094 «电力变压器〉〉

GB 1094.11, GB/T 10228《干式电力变压器〉〉

1.2 额定容量：2500kV 及以下。

1.3 电压等级：35kV 及以下。

1.4 电压分接范围：+5%; +2x2.5%;或按用户需求。

1.5 调压方式：无励磁调压、有载高压。

1.6 相数频率：3 相 50Hz。

1.7 联接组标号：Dynll、Yyno 或根据用户需求。

1.8 阻抗电压：*4%; 6%*（见出厂数据）。

1.9 冷却方式：AN 或 AN/AF。

1.10 防护等级:IP20 （户内式）

1.11 绝缘等级：F 级

1.12 绝缘水平：按标准，其中 35kV, 20kV,10kV, 6kV 见下表:

电压等级	外施耐压（kV）	雷电冲击（kV）		感应耐压
		I 型	II型	
35kV	70/min	145	170	200%Un
20 kV	50/min			200%Un
10kV	35/min	60	75	200%Un
6kV	25/min	40	60	200%Un

注：上表为出厂试验数值，交接试验及预防性试验中工频耐压施加值按《运行规程〉〉规定应为 85 % 时间为 1 min。

- Product technical specifications

1.1 Product Standard: GB 1094 "Power Transformer"

GB 1094.11, GB/T 10228 "Dry-type power transformers"

1.2 Rated capacity: 2500kV and below.

1.3 Voltage level: 35kV and below.

1.4 Voltage tap range: +5%; +2x2.5%; or according to user needs.

1.5 Voltage regulation mode: non-excitation voltage regulation, on-load high voltage.

1.6 Phase number frequency: 3-phase 50Hz.

1.7 Connection group label: Dynll, Yyno or according to user needs.

1.8 Impedance voltage: 4%; 6% (see factory data).

1.9 Cooling method: AN or AN/AF.

1.10 Protection class: IP20 (indoor)

1.11 Insulation class: F class

1.12 Insulation level: According to the standard, see the following table for 35kV, 20kV,10kV, 6kV:

Voltage	External pressure（kV）	Lightning impulse（kV）		Induction withstand voltage
		Type I	Type II	
35kV	70/min	145	170	200%Un
20kV	50/min	95	125	200%Un
10kV	35/min	60	75	200%Un
6kV	25/min	40	60	200%Un

Note: The above table is the value of the factory test. The power frequency withstand voltage applied value in the handover test and preventive test should be 85% and 1 min according to the "Operation Regulations".

二、用途及使用条件

2.1 用途：该产品绝缘性能好，机械强度高，耐潮湿，阻燃而无污染，易安装，基本不需要维 护，使用寿命长，过载能力强，广泛应用于医院、宾馆、地下商场、隧道、地铁、地下电站、海上 石油平台、试验室、高层建筑、机场、组合电站等重要场所。

2.2 产品使用条件：

♦海拔高度：1000m 及以下。

♦环境温度：最高气温：+40 °C　　最低气温：—30°C （适用于户外式变压器）

最高日平均气温：+30°C　　最低气温：-5°C（适用于户内式变压器）

最高年平均气温：+20°

♦相对温度：95%及以下

当使用条件超出上述要求时，应对运行参数(如输出电流)进行适当调整并采取适当保护措施 以保证产品运行寿命和安全可靠性。

2. Purpose and conditions of use

2.1 Purpose: The product has good insulation performance, high mechanical strength, moisture resistance, flame retardant and no pollution, easy installation, basically no maintenance, long service life, strong overload capacity, widely used in hospitals, hotels, underground shopping malls, tunnels, Subway, underground power station, offshore oil platform, laboratory, high-rise building, airport, combined power station and other important places.

2.2 Product use conditions:

♦ Altitude: 1000m and below.

♦ Ambient temperature: Maximum temperature: +40 °C

Maximum daily average temperature: +30°C　　Minimum temperature: -30° C (for outdoor transformers)

The highest annual average temperature: +20°　　Minimum temperature: -5° C (for indoor transformers)

♦ Relative temperature: 95% and below

When the operating conditions exceed the above requirements, the operating parameters (such as output current) should be properly adjusted and appropriate protection measures should be taken to ensure the product's operating life and safety and reliability.

三、产品结构特征：

3.1 铁芯：铁芯采用优质冷轧有取向硅钢片，45°全斜接缝不冲孔结构；铁芯表面采用特种树 脂涂封，以防锈蚀，夹件与铁芯、线圈之间以及铁芯与底座之间均垫以弹性材料以降低运行噪音。

3.2 线圈：低压绕组为双层圆筒式或箔式、高压绕组为分段连续式结构；并均采用 F 级绝缘涤纶 双玻璃丝铜导线绕制，玻璃纤维增强，环氧树脂配料在真空状态下浇注成型。它具有良好的电气性 能和机械强度。能抗短路，耐冲击，耐潮湿，并具有一定的过压承受能力。

3.3 底座：根据用户要求配底脚槽钢或小车。

3.4 接线端子：高压接线端子采用预埋铜螺母联接：低压接线采用带接线孔的镀镓锡铜排焊接 在线圈端部，用支柱绝缘子固定在夹件上，以方便接线。

3.5 防护外壳：IPOO 不配防护外壳，适用于箱式电站、配电柜等；IP20 配金属网防护外壳，可防 12mm 异物进入，适用于室内安装：IP23 配百叶窗式防护外壳，可防雨雪、昆虫、可用于室外，但 此类外壳使用时应降低 5 %使用容量。

3.6 变压器冷却方式：125kVA 及以下容量变压器一般为空气自冷(AN),此时可连续输出 100%额定容量。160kVA 及以上变压器采用风冷方式(AF),在一定容量下可不启用风机，超过额 定容量 70%时应启用冷却风机。

3.7 温控：豪用自动温度控制保护系统；根据用户要求，可实现温度显示，巡回检测〈启停风 机、超温报警、’跳闸、计算机通讯接口等功能。

三、 Product structure characteristics:

3.1 Iron core: The iron core is made of high-quality cold-rolled oriented silicon steel sheet, 45° full oblique joint without punching structure; Elastic material is padded between the iron core and the base to reduce the running noise.

3.2 Coil: The low-voltage winding is a double-layer cylindrical or foil type, and the high-voltage winding is a segmented continuous structure; both are wound with F-class insulated polyester double-glass filament copper wire, glass fiber reinforced, and epoxy resin ingredients are in a vacuum state Downcast molding. It has good electrical properties and mechanical strength. It can resist short circuit, impact resistance, moisture resistance, and has a certain overvoltage tolerance.

3.3 Base: according to the user's requirements, it can be equipped with foot channel steel or trolley.

3.4 Terminals: high-voltage terminals are connected with embedded copper nuts: low-voltage wiring is welded with tin-plated copper bars with wiring holes at the end of the coil, and fixed on the clamps with post insulators to facilitate wiring.

3.5 Protective shell: IPOO is not equipped with a protective shell, suitable for box-type power stations, power distribution cabinets, etc.; IP20 is equipped with a metal mesh protective shell, which can prevent 12mm foreign objects from entering, suitable for indoor installation: IP23 is equipped with a shutter-type protective shell, which can prevent rain and snow, Insects, can be used outdoors, but the capacity of such enclosures should be reduced by 5%.

3.6 Transformer cooling method: Transformers with a capacity of 125kVA and below are generally air-cooled (AN), and 100% of the rated capacity can be continuously output at this time. The transformer of 160kVA and above adopts the air cooling method (AF). The fan may not be activated under a certain capacity, and the cooling fan should be activated when it exceeds 70% of the rated capacity.

3.7 Temperature control: It adopts automatic temperature control and protection system; according to user requirements, it can realize the functions of temperature display, circuit detection (starting and stopping fans, over-temperature alarm, tripping, computer communication interface, etc.).

四、SC(B)10 系列性能参数

SC(B)10 系列 10kV 树脂绝缘干式电力变压器技术数据表

型号	额定容量 (kVA)	额定电压			联结组标号	空载损耗 (W)	负载损耗 120℃(W)	空载电流 (%)	短路阻抗 (%)	噪声 (dB)A
		高压 (kV)	分接范围	低压 (kV)						
SC10-30/10	30					190	710	2.3		57
SC10-50/10	50					270	1000	2.2		57
SC10-80/10	80					370	1380	1.7		59
SC10-100/10	100					400	1570	1.7		59
SC10-125/10	125					470	1850	1.5		59
SC10-160/10	160	6				540	2130	1.5		59
SCB10-200/10	200				Yvno	620	2530	1.3		60
SCB10-250/10	250	6.3				720	2760	1.3	4	60
SCB10-315/10	315		±5%		或	880	3470	1.1		62
SCB10-400/10	400	6.6		0.4		980	3990	1.1		62
SCB10-500/10	500		±2x2.5%		Dvn11	1160	4880	1.1		63
SCB10-630/10	630	10				1340	5880	0.9		64
SCB10-630/10	630					1300	5960	0.9		64
SCB10-800/10	800	10.5				1520	6960	0.9		65
SCB10-1000/10	1000					1770	8130	0.9		65
SCB10-1250/10	1250	11				2090	9690	0.9	6	67
SCB10-1600/10	1600					2450	11730	0.9		68
SCB10-2000/10	2000					3050	14450	0.7		69
SCB10-2500/10	2500					3600	17170	0.7		70

注：SC(B)11 按此标准空载损耗下降 10%,负载损耗不变。

五、SC(B)10 series performance parameters

SC(B)10 Series 10kV Resin Insulated Dry-Type Power Transformer Technical Data Sheet

Type	Rated Capacity (kVA)	Rated voltage			Vector Group	No-load Loss(W)	Load Loss120℃(W)	No-load Current (%)	Short Circuit Impendance (%)	Noise (dB)A
		HV (kV)	Tapping Ranges	LV (kV)						
SC10-30/10	30					190	710	2.3		57
SC10-50/10	50					270	1000	2.2		57
SC10-80/10	80					370	1380	1.7		59
SC10-100/10	100					400	1570	1.7		59
SC10-125/10	125					470	1850	1.5		59
SC10-160/10	160					540	2130	1.5		59
SCB10-200/10	200				Yyno	620	2530	1.3	4	60
SCB10-250/10	250	6				720	2760	1.3		60
SCB10-315/10	315		±5%			880	3470	1.1		62
SCB10-400/10	400	6.3		0.4	or	980	3990	1.1		62
SCB10-500/10	500		±2x2.5%		Dyn11	1160	4880	1.1		63
SCB10-630/10	630	6.6				1340	5880	0.9		64
SCB10-630/10	630	10				1300	5960	0.9		64
SCB10-800/10	800					1520	6960	0.9		65
SCB10-1000/10	1000	10.5				1770	8130	0.9		65
SCB10-1250/10	1250					2090	9690	0.9	6	67
SCB10-1600/10	1600	11				2450	11730	0.9		68
SCB10-2000/10	2000					3050	14450	0.7		69
SCB10-2500/10	2500					3600	17170	0.7		70

Note: SC(B)11 no-load loss is reduced by 10% according to this standard, and the load loss remains unchanged.

SC(B)10 系列 20kV 树脂绝缘干式电力变压器技术数据表

型号	额定容量(kVA)	额定电压			联结组标号	空载损耗(W)	负载损耗120℃(W)	空载电流 (%)	短路阻抗(%)	噪声(dB)A
		高压(kV)	分接范围	低压(kV)						
SCB10-50/20	50	20 22 24	±2.5 ±5	0.4		340	1230	2.4	6	57
SCB10-100/20	100					540	1990	2.2		57
SCB10-160/20	160					670	2470	1.8		59
SCB10-200/20	200		±2.5 ±5			730	2940	1.8		59
SCB10-250/20	250					840	3420	1.6		59
SCB10-315/20	315				Yyno	970	4080	1.6		60
SCB10-400/20	400					1150	1840	1.4		62
SCB10-500/20	500				Dyn11	1350	5790	1.4		63
SCB10-630/20	630					1530	6840	1.2		64
SCB10-800/20	800					1750	8260	1.2		64
SCB10-1000/20	1000					2070	9780	1.0		65
SCB10-1250/20	1250					2380	1150	1.0		65
SCB10-1600/20	1600					1790	1380	1.0		67
SCB10-2000/20	2000					3240	1630	0.8		68
SCB10-2500/20	2500					3870	1930	0.8		69

SC(B)10 Series 20kV Resin Insulated Dry-Type Power Transformer Technical Data Sheet

Type	Rated Capacity (kVA)	Rated Voltage			Vector Group	No-load Loss(W)	Load Current120℃(W)	No-load Current (%)	Short Circuit Impendance (%)	Noise (dB)A
		HV（kV）	Tapping Ranges	LV（kV）						
SCB10-50/20	50	20 22 24	±2.5 ±5	0.4		340	1230	2.4	6	57
SCB10-100/20	100					540	1990	2.2		57
SCB10-160/20	160					670	2470	1.8		59
SCB10-200/20	200		±2.5 ±5			730	2940	1.8		59
SCB10-250/20	250					840	3420	1.6		59
SCB10-315/20	315				Yyno	970	4080	1.6		60
SCB10-400/20	400					1150	1840	1.4		62
SCB10-500/20	500				Dyn11	1350	5790	1.4		63
SCB10-630/20	630					1530	6840	1.2		64
SCB10-800/20	800					1750	8260	1.2		64
SCB10-1000/20	1000					2070	9780	1.0		65
SCB10-1250/20	1250					2380	1150	1.0		65
SCB10-1600/20	1600					1790	1380	1.0		67
SCB10-2000/20	2000					3240	1630	0.8		68
SCB10-2500/20	2500					3870	1930	0.8		69

SC(B)11 系列 35kV 树脂绝缘干式电力变压器技术数据表

型号	额定 容量	高压 (kV)	分接范围	低压 (kV)	联结组标号	空载损耗 (W)	负载损耗 120℃	空载电流 (%)	短路阻抗 (%)
SCB11-50/35	50					405	1425	2.8	
SCB11-100/35	100					565	2090	2.4	
SCB11-160/35	160					710	2810	1.8	
SCB11-200/35	200					790	3325	1.8	
SCB11-250/35	250					890	3800	1.6	
SCB11-315/35	315					1065	4510	1.6	
SCB11-400/35	400	35	±5%		Dyn11	1245	5415	1.4	
SCB11-500/35	500			0.4		1460	6650	1.4	6
SCB11-630/35	630	38.5	±2x2.5%		Yyno	1675	7695	1.2	
SCB11-800/35	800					1945	9120	1.2	
SOB11-1000/35	1000					2190	10450	1.0	
SCB11-1250/35	1250					2550	12730	0.9	
SCB11-1600/35	1600					2920	15485	0.9	
SCB11-2000/35	2000					3445	18240	0.9	
SCB11-2500/35	2500					4010	21850	0.9	

注：SC(B)10 按此标准空载损耗下降 10%,负载损耗下降 5%; SC(B)11 按此标准空载损耗下 降 20%, 负载损耗下降 5%;

SC(B)11 Series 35kV Resin Insulated Dry-Type Power Transformer Technical Data Sheet

Type	Rated Capacity	HV (kV)	Tapping Ranges	LV (kV)	Vector Group	Load Loss(W)	No-load Current 120℃ (W)	No-load Current (%)	Short Circuit Impendance (%)
SCB11-50/35	50					405	1425	2.8	
SCB11-100/35	100					565	2090	2.4	
SCB11-160/35	160					710	2810	1.8	
SCB11-200/35	200					790	3325	1.8	
SCB11-250/35	250					890	3800	1.6	
SCB11-315/35	315					1065	4510	1.6	
SCB11-400/35	400	35	±5%		Dyn11	1245	5415	1.4	
SCB11-500/35	500			0.4		1460	6650	1.4	6
SCB11-630/35	630	38.5	±2x2.5%		Yyno	1675	7695	1.2	
SCB11-800/35	800					1945	9120	1.2	
SOB11-1000/35	1000					2190	10450	1.0	
SCB11-1250/35	1250					2550	12730	0.9	
SCB11-1600/35	1600					2920	15485	0.9	
SCB11-2000/35	2000					3445	18240	0.9	
SCB11-2500/35	2500					4010	21850	0.9	

Note: SC(B)10 according to this standard no-load loss decreased by 10%, load loss decreased by 5%; SC(B)11 according to this standard no-load loss decreased by 20%, load loss decreased by 5%;

三、 订货须知：订货时请提出以下项目

♦型号规格♦相数及电源频率♦高低压电压组合♦联结组及阻抗电压♦其它特殊要求

三、Instructions for ordering: Please submit the following items when ordering

♦Model specifications ♦Phase number and power frequency ♦High and low voltage voltage combination ♦Connection group and impedance voltage ♦Other special requirements

四、 产品装卸

1、 装卸设备可采用起重机、汽车吊或叉车等起吊设备。

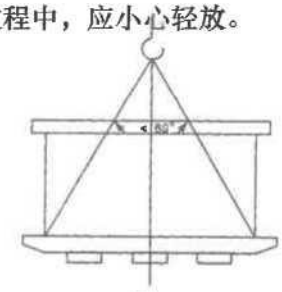
2、装卸时应严格执行国家有关的装卸规程。装卸过程中以安全、平稳和不对变压器造成损伤 为原则。

3、 起吊时，应在包装箱的四下角垫木处挂钢丝绳，如图一：如无包装箱或变压器从包装箱中 吊出，应同时使用器身上的所有吊板起吊，起吊钢丝绳之间的夹角不得大于 60° ,如图二。

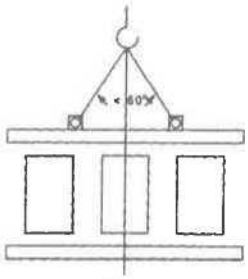
4、 起吊时，如重心明显偏离中心位置，应调整钢丝绳的长短使吊钩正对箱体重心。

5、 使用叉车装卸时，应使变压器的重心处于两叉的中间。

6、产品装卸过程中，应小心轻放。



图一



图二

4. Product loading and unloading

1. The loading and unloading equipment can use lifting equipment such as cranes, truck cranes or forklifts.

2. When loading and unloading, the relevant national loading and unloading regulations should be strictly implemented. In the process of loading and unloading, the principles of safety, stability and no damage to the transformer are taken as the principle.

3. When hoisting, wire ropes should be hung at the four lower corners of the packing box, as shown in Figure 1: if there is no packing box or transformer is lifted from the packing box, all the hanging plates on the body of the appliance should be used for lifting at the same time, and the lifting wire ropes The included angle shall not be greater than 60°, as shown in Figure 2.

4. When lifting, if the center of gravity is obviously deviated from the center position, the length of the wire rope should be adjusted so that the hook is facing the center of gravity of the box.

5. When using a forklift to load and unload, the center of gravity of the transformer should be in the middle of the two forks.

6. During the loading and unloading process of the product, it should be handled with care

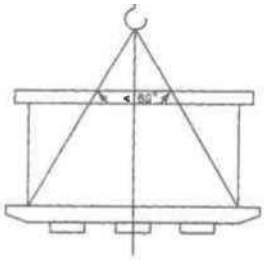


Figure 1

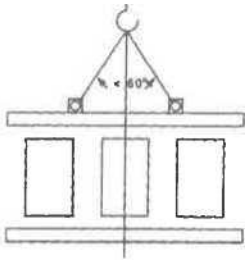


Figure 2

五、检查验收

1、用户收到变压器后应及时进行检查。按装箱单及铭牌查对产品及其型号、容量、电压组 合、联接组标号、阻抗电压等是否与订货合同相符。

2、 检查出厂文件是否齐全，配件是否与装箱单相符。

3、 查看变压器在运输过程中有无损伤，产品零部件是否损伤和位移，紧固件是否松动，绝缘 有否破损，线圈表面有否秽痕迹等。

4、 产品开箱检查后，如不立即投入运行，应重新包装好，并把它放在户内安全的地方，以防 损伤盗。

五、 Inspection and acceptance

1. The user should check the transformer in time after receiving it. According to the packing list and nameplate, check whether the product and its model, capacity, voltage combination, connection group label, impedance voltage, etc. are consistent with the order contract.

2. Check whether the factory documents are complete and whether the accessories are consistent with the packing list.

3. Check whether the transformer is damaged during transportation, whether the product parts are damaged and displaced, whether the fasteners are loose, whether the insulation is damaged, and whether there are contamination marks on the surface of the coil.

4. After the product is unpacked and checked, if it is not put into operation immediately, it should be repackaged and placed in a safe indoor place to prevent damage and theft.

六、运行前的准备

1、 运行前的检查

1.1 检查运输时拆卸的附件是否已全部安装就位。

1.2 检查所有紧固件、连接件、标准件是否松动，并重新紧固一次。

1.3 检查温控设备以及其他辅助器件能否正常运行。

1.4 检查变压器的箱体是否可靠接地、铁心装配是否有一点可靠接地。

2、 运行前的试验

2.1 测量绕组在各个分接位置的直流电阻值。

2.2 检测各个分接位置的电压比与铭牌是否相符。

2.3 测定绕组的极性和联结组标号。

2.4 拆去铁心接地片，用 2500V 兆欧表检测铁心的绝缘状况，符合要求后装好接地片，检测铁心 接地是否良好（铁心有且只能一点接地）。用 2500V 兆欧表检测变压器高压对地、低压对地及高压 对低压的绝缘状况。如果所得数据达不到要求。此时，变压器须经干燥处理。干燥处理的方法视现 场条件而定，最简单的方法可以用热风干燥或红外线烘烤或两者兼用。此时，加温不可急骤，要缓 慢，保持变压器周围的环境温度在 60°C-80°C 干燥处理一段时间后，待绝缘至少恢复到表 1 的规 定后，变压器才可以投入运行。不经干燥处理的变压器（35kV 级以下）可以投入运行的绝缘要求 表 1

项 目	高压对低压及地	低压（w3kV）对地	铁心、穿心螺栓对地
绝缘电阻（MQ ）	^600	N600	N2

注：测试条件温度为 15℃一 30℃，湿度为≤90°C。

2.5 如要进行工频耐压试验，其试验值为出厂试验值的 85°Co 变压器必须在温控器与传感插头 分离后

方可进行耐压试验。

2.6 如果是有载调压变压器，请按有载调压开关说明书，进行必要的检测和调试。

3、试运行

经过检查和测试，变压器一切正常后，可以投入运行。

3.1 变压器投入运行前，且正确使用温控和温显设备。

3.2 再一次检查变压器的分接位置是否与铭牌和分接位置标志牌相一致。

3.3 检查变压器相序与电网相序是否一致。

3.4 在确定保护装置已经投入的情况下，变压器进行三次全电压空载合闸，进一步使变压器承 受操作过电压和激磁涌流（瞬间峰值可达 10 倍的变压器额定电流）的考验。两次电压冲击之间间隔 应大于 5 分钟，无异常情况后，可以空载运行 24 小时。

3.5 当为有载调压变压器时，应将有载分接开关作一次循环操作，检查变压器输出电压是否符 合要求，开关操作是否正常（在空载的情况下）。

3.6 带上负载后，注意观察温度显示是否正常，在三相负载平衡的情况下，三相温度应相差不大。

3.7 所有这些检测过程都应该做好记录，存档备查。

4、变压器的投运

4.1 变压器投运前，应根据变压器铭牌将各相分接片调整到合适的位置。

1）无励磁调压时，应根据电网电压把变压器 A、B、C 三相的调压分接头连接片按变压器铭牌 接到相应的位置上。

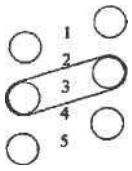
例如：对电力为 10000±2x2.5%V 的变压器，其铭牌电压如下：

（D10500V　　②10250V　　③ 10000V　　④9750V　　©9500V

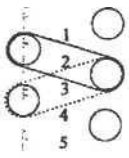
a） 如当地电网实际电压为 10kV,则分接片应接 3 档（出厂时通常接此档），见图三。

b）当变压器低压输出电压偏高时，在确保高压断电并将高压进线可靠接地、线圈完全放电 后，将分接头的连接片往上接，见图四。

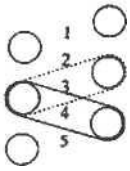
C）当变压器低压输出电压偏低时，在确保高压断电并将高压进线可靠接地、线圈完全放电 后，将



图四



图五



分接头的连接片往下接，见图五。

2）有载调压时，应在断电情况下，分接开关调试正常后方可投运。有载开关的调试请参看有 载调压分接开关使用说明书。

4.2 变压器有温控器时，请先参看温控器使用说明书，内部的温度设定在变压器出厂时已调整 好。当温控器通电正常后（当温度在 0°C 以下时，温控器无温度显示!）关断其电源开关，先将变压 器合闸投运，而后再接通温控器电源开关。

4.3 变压器应在空载时合闸投运。空载合闸正常后，可逐渐加负荷运行，并注意观察温控器的 温度显示变化以及风机的启、停情况和超温报警、超温跳闸等情况，发现异常应及时处理。由于三 相负荷的均衡程度及散热等原因，三相温度差小于 10°C 属正常情况。如大于 10°C,则应检查变压器 低压各项的负荷电流，如相差较大，则应及时调整各相的负荷分配，使之尽量趋于均衡。

4.4 变压器投运后，风机将由温控器根据设定的温度控制其自动投切，不可将风机长期处于手 动运行状态。

4.5 变压器过负荷运行应按照《干式电力变压器负载导则〉〉的规定执行。

4.6 变压器退出运行后，一般不需要采取其他措施即可重新运行。但如退运时间较长，在高湿 度的环境下，变压器已发生凝露，则应经干燥处理后，方能重新投运。

4.7 当多台产品并联运行时，应根据相关规程判断它们是否满足并联运行的条件：同时检查它 们的高压输入电缆的相序是否都一致。

六、 Preparation before operation

1. Inspection before operation

1.1 Check that the accessories removed during transportation are all installed in place.

1.2 Check whether all fasteners, connectors and standard parts are loose, and re-tighten them once.

1.3 Check whether the temperature control equipment and other auxiliary devices can operate normally.

1.4 Check whether the box body of the transformer is reliably grounded, and whether the core assembly is reliably grounded.

2. Test before operation

2.1 Measure the DC resistance value of the winding at each tap position.

2.2 Check whether the voltage ratio of each tap position is consistent with the nameplate.

2.3 Determine the polarity of the winding and the label of the connection group.

2.4 Remove the iron core grounding piece, use a 2500V megger to check the insulation condition of the iron core, install the grounding piece after meeting the requirements, and check whether the iron core is well grounded (the iron core has and can only be grounded at one point). Use a 2500V megger to check the insulation condition of the transformer between high voltage and ground, low voltage and ground, and high voltage and low voltage. If the obtained data does not meet the requirements. At this time, the transformer must be dried. The drying method depends on the site conditions, the simplest method can be hot air drying or infrared baking or both. At this time, heating should not be abrupt, but slow. Keep the ambient temperature around the transformer at 60°C-80°C and dry for a period of time, and the transformer can be put into operation after the insulation is at least restored to the requirements in Table 1.

Insulation requirements for transformers (below 35kV) that can be put into operation without drying treatment Table 1

Item	High voltage to low voltage and ground	Low voltage (w3kv) to ground	Iron core and core bolt to the ground
Insulation resistance （MQ ）	^600	N600	N2

Note: the test condition is 15 ℃ - 30 ℃, and the humidity is ≤ 90 ℃.

2.5 If the power frequency withstand voltage test is to be performed, the 85°Co transformer whose test value is the factory test value must be separated from the sensor plug before the withstand voltage test can be performed.

2.6 If it is an on-load voltage regulating transformer, please follow the instructions of the on-load voltage regulating switch to carry out necessary testing and debugging.

3. Trial operation

After inspection and testing, the transformer can be put into operation after everything is normal.

3.1 Before the transformer is put into operation, the temperature control and temperature display equipment should be used correctly.

3.2 Check again whether the tap position of the transformer is consistent with the nameplate and the tap position sign.

3.3 Check whether the transformer phase sequence is consistent with the grid phase sequence.

3.4 When it is confirmed that the protection device has been put into operation, the transformer shall be closed at full voltage no-load three times, which further makes the transformer withstand the test of operating overvoltage and exciting inrush current (the instantaneous peak value can reach 10 times the rated current of the transformer). The interval between two voltage shocks should be greater than 5 minutes, and if there is no abnormal situation, it can run without load for 24 hours.

3.5 When it is an on-load voltage regulating transformer, the on-load tap-changer should be operated in a cycle to check whether the output voltage of the transformer meets the requirements and whether the switching operation is normal (in the case of no load).

3.6 After putting on the load, pay attention to observe whether the temperature display is normal. In the case of three-phase load balance, the three-phase temperature should be the same.

big.

3.7 All these testing processes should be recorded and archived for future reference.

4. Operation of the transformer

4.1 Before the transformer is put into operation, the taps of each phase should be adjusted to the appropriate position according to the nameplate of the transformer.

1) In the case of non-excitation voltage regulation, the connection pieces of the three-phase voltage regulation taps of transformers A, B and C should be connected to the corresponding positions according to the transformer nameplate according to the grid voltage.

For example: for a transformer with a power of 10000±2x2.5%V, its nameplate voltage is as follows:

①10500V ②10250V ③ 10000V ④9750V ⑤9500V

a) If the actual voltage of the local power grid is 10kV, the tap should be connected to the 3rd gear (usually connected to this gear when leaving the factory), see Figure 3.

b) When the low-voltage output voltage of the transformer is high, after ensuring that the high-voltage power is cut off, the high-voltage incoming line is reliably grounded, and the coil is completely discharged, connect the connecting piece of the tap up, as shown in Figure 4.

C) When the low-voltage output voltage of the transformer is low, after ensuring that the high-voltage power is cut off, the high-voltage incoming line is reliably grounded, and the coil is completely discharged, connect the connecting piece of the tap to the bottom, as shown in Figure 5.

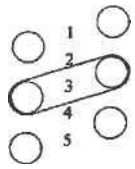


Figure 4

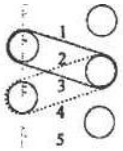
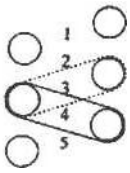


Figure 5



2) In the case of on-load voltage regulation, it should be put into operation after the tap changer is debugged normally under the condition of power failure. For the commissioning of the on-load switch, please refer to the instruction manual of the on-load tap-changer.

4.2 When the transformer has a thermostat, please refer to the instruction manual of the thermostat first. The internal temperature setting has been adjusted at the factory of the transformer. When the thermostat is powered on normally (when the temperature is below 0°C, the thermostat has no temperature display!), turn off its power switch, first close the transformer and put it into operation, and then connect the thermostat power switch.

4.3 The transformer should be closed and put into operation at no-load. After the no-load closing is normal, you can gradually increase the load to run, and pay attention to observe the temperature display changes of the thermostat, the start and stop of the fan, and the over-temperature alarm and over-temperature trip. If any abnormality is found, it should be dealt with in time. Due to the balance of the three-phase load and heat dissipation, it is normal for the three-phase temperature difference to be less than 10°C. If it is greater than 10°C, the load current of the low-voltage items of the transformer should be checked. If the difference is large, the load distribution of each phase should be adjusted in time to make it as balanced as possible.

4.4 After the transformer is put into operation, the fan will be automatically switched on and off by the thermostat according to the set temperature, and the fan cannot be left in manual operation for a long time.

4.5 The overload operation of the transformer shall be carried out in accordance with the provisions of the "Guidelines for Loading of Dry-Type Power Transformers".

4.6 After the transformer is out of operation, it is generally not necessary to take other measures to restart the operation. However, if the return time is long, and the transformer has condensed in a high-humidity environment, it should be dried before it can be put into operation again.

4.7 When multiple products run in parallel, judge whether they meet the conditions for parallel running according to relevant regulations: at the same time, check whether the phase sequences of their high-voltage input cables are consistent.

七、运行前的试验

1、 变压器运行前应按 GB50150 的规定，进行变比、联接组别及相应其他项目的试验。

2、 检查变压器铁心和外壳是否已永久接地。

3、 线圈绝缘电阻的测试，一般情况下（环境温度：20∽30°C,相对湿度：〈90%）

高压一低压及地　　>300MQ　　仪表：2500V 兆欧表

低压一地　　>100MQ　　仪表：2500V 兆欧表

在比较潮湿的环境下，变压器的绝缘电阻会有所下降。一般地，如每 IkV 额定电压，其绝缘电 阻不

小于 2MC （1 min, 25°C）,即可满足运行要求。但是，如变压器异常潮湿并发生凝露现象，则
不论其绝缘电阻如何，均应在进行工频耐压试验前或投运前，进行干燥处理。

4、铁心绝缘电阻测试，一般情况下（环境温度：20∽30°C,相对湿度：<90%）铁心一夹件及地 >2MQ
仪表：2500V 兆欧表

穿心螺杆一铁心及地 >2MQ 仪表：2500V 兆欧表

同样，在比较潮湿的环境下，此绝缘电阻会有所下降。一般通过干燥处理使其达到要求。只要 其阻值 0.5MG 即可投运。

5、 对于有载调压变压器，应根据有载调压分接开关使用说明书做投运前必要的检查和试验。

6、 进行外施工频耐压试验，因此项目为破坏性试验，故试验电压值根据 GB50150 的规定为出 厂试验电压的 85%。试验前应拔下温控器总接头及各个插入线圈的钳电阻探头，待试验结束后，再 将温控器总接头与温控器接上，各个箱电阻探头插入原测量位置 O

七、Test before operation

1. Before the transformer is operated, the transformation ratio, connection group and corresponding other items should be tested according to the provisions of GB50150.

2. Check whether the transformer core and shell are permanently grounded.

3. Coil insulation resistance test, under normal circumstances (ambient temperature: 20~30°C, relative humidity: <90%)

High voltage, low voltage and ground >300MQ meter: 2500V megohmmeter

Low voltage one ground >100MQ meter: 2500V megohmmeter

In a relatively humid environment, the insulation resistance of the transformer will decrease. Generally, if the insulation resistance is not less than 2MC (lmin, 25°C) per rated voltage of 1kV, it can meet the operating requirements. However, if the transformer is abnormally wet and condensation occurs, the

Regardless of its insulation resistance, it should be dried before the power frequency withstand voltage test or before it is put into operation.

4. Iron core insulation resistance test, under normal circumstances (ambient temperature: 20~30°C, relative humidity: <90%) Iron core one clip and ground > 2MQ Meter: 2500V megohmmeter

Through-the-core screw-core and ground >2MQ Meter: 2500V megohmmeter

Also, in a humid environment, this insulation resistance will drop. It is generally made to meet the requirements by drying treatment. As long as its resistance value is 0.5MG, it can be put into operation.

5. For the on-load tap changer, the necessary inspections and tests before putting into operation should be done according to the instruction manual of the on-load tap changer.

6. The external construction frequency withstand voltage test is carried out, so the project is a destructive test, so the test voltage value is 85% of the factory test voltage according to the provisions of GB50150. Before the test, unplug the thermostat general connector and each clamp resistance probe inserted into the coil. After the test is over, connect the thermostat general connector to the thermostat, and insert each box resistance probe into the original measurement position O.

八、运行中的监护

在做好第四和第五条规定的工作后，在干燥、清洁的环境中、在正常负荷情况下，本产品不用 维护。平时应着重注意下列几个方面：

1、 经常观察负荷情况和变压器的温度情况。

2、 如发现有过多的灰尘聚集应在可断电的情况下用干燥、清洁的压缩空气来清除这些灰尘。

3、 本产品停运后，经绝缘检测，无异常情况可直接带负荷投入运行。

4、 本产品的温控器可按表 2 设定和调节。

温度控制器的温度设定及调节范围　表 2

项 目	高温报警	超温跳闸
出厂设定（P）	135	150
调节范围（P）	130-170	150-190

5、只要电网电压最大值不超过相应分接电压的 5%,变压器可安全运行。

6、无激磁调压的变压器，在完全脱离电网（高、低压侧均断开）的情况下，用户可根据当时电网电压的高低按分接位置进行三相同时调节。

7、 有载调压变压器，当电网电压波动时，可在负载的情况下，通过自动控制器或电动、手动 操作来改变线圈匝数，从而稳定输出电压。

8、 根据环境温度和初始负载状态，变压器允许短时过载运行。

9、 变压器的附件，如温度控制器、开关、冷却风机等的使用，请参阅有关说明书，在附件调 试正常后，先将变压器投入运行，再将附件投入运行。

八、 Monitoring during operation

After completing the work specified in Articles 4 and 5, this product does not need maintenance in a dry and clean environment and under normal load. In ordinary times, we should pay attention to the following aspects:

1. Always observe the load and transformer temperature.

2. If excessive dust accumulation is found, dry and clean compressed air shall be used to remove the dust when the power can be cut off.

3. After the product is shut down, it can be put into operation directly with load without any abnormality after insulation test.

4. The thermostat of this product can be set and adjusted according to Table 2.

Temperature setting and adjustment range of temperature controller Table 2

Item	High temperature alarm	Overtemperature trip
Factory setting（℃）	135	150
Adjustment range（℃）	130-170	150-190

5. As long as the maximum value of the grid voltage does not exceed 5% of the corresponding tap voltage, the transformer can operate safely.

6. When the transformer without excitation and voltage regulation is completely disconnected from the power grid (both high and low voltage sides are disconnected), the user can

The level of the grid voltage is adjusted simultaneously for three phases according to the tap position.

7. For the on-load voltage regulating transformer, when the grid voltage fluctuates, the number of turns of the coil can be changed by the automatic controller or electric and manual operation under the load condition, so as to stabilize the output voltage.

8. According to the ambient temperature and initial load state, the transformer allows short-time overload operation.

9. For the use of accessories of the transformer, such as temperature controller, switch, cooling fan, etc., please refer to the relevant manuals. After the accessories are debugged normally, put the transformer into operation first, and then put the accessories into operation.

九、运行

1. 变压器投入运行前应按照《运行规则〉〉要求认真作好检查和预防性试验，在确信变压器不 存在任何故障时方可通电运行。

2. 本产品具有较强的防潮能力，但长期存放仍可能产生绝缘电阻下降，此时，可采取适当的 措施（如加强干燥）可恢复。

3. 干式变压器因电流密度较油浸式小得多，因而低压侧直流电阻结构性不平衡可能较油浸式 高。请对照出厂试验数据，如无明显差别，则证明不存在接触不良故障，可投入正常运行。

4. 投入运行的铁芯、器身及壳体须有效接地。

九. Operation

1. Before the transformer is put into operation, the inspection and preventive tests should be carefully carried out according to the requirements of the "Operation Rules", and the transformer can be powered on and run only when it is sure that there is no fault in the transformer.

2. This product has strong moisture-proof ability, but long-term storage may still cause a drop in insulation resistance. In this case, appropriate measures (such as strengthening drying) can be taken to restore it.

3. Because the current density of the dry-type transformer is much smaller than that of the oil-immersed type, the structural imbalance of the DC resistance on the low-voltage side may be higher than that of the oil-immersed type. Please compare the factory test data, if there is no obvious difference, it proves that there is no bad contact fault, and it can be put into normal operation.

4. The iron core, body and shell put into operation must be effectively grounded.

江苏亚威变压器厂产品售后服务承诺

江苏亚威变压器厂以“质量第一，信誉至上"为销售宗旨。24 小时随时为您服务，以最快的速 度和最准确的判断力为您排除故障。

为使用户放心使用我厂产品，我厂对产品质量承诺如下：

一、 我厂售出产品按国际及相关行业标准生产，保修期为 1 年。保修期结束后，负责终身维 护，适当收取成本费用。

二、 售出产品如因非人为因素导致变压器性能及技术问题，我方将无条件更换。对由于其它原 因造成的问题，我厂将积极协助解决用户困难，以保证产品及时投运，将损失减少到最低限度。

三、 对售出产品，我厂将积极配合用户搞好变压器的现场运行和维护管理。并可根据用户需 要，提供成本价的备品备件。

四、 如遇产品发生质量问题，我厂将以最快的时间赶到现场。一小时之内给予答复，周边地区 我们将在 48 小时内给予客户解决，边远地区我们将在 72 小时内给予解决！不论用户有什么问题，都 将得到江苏亚威变压器厂及时、周到的帮助。

江苏亚威变压器厂服务热线：0513-88783075 传真：0513-88783075

Jiangsu Yawei Transformer Factory Product After-sales Service Commitment

Jiangsu Yawei Transformer Factory takes "quality first, credit first" as its sales tenet. 24 hours to serve you at any time, with the fastest speed and the most accurate judgment for you to troubleshoot.

In order to make users feel at ease to use our products, our commitment to product quality is as follows:

1. The products sold by our factory are produced according to international and related industry standards, and the warranty period is 1 year. After the warranty period is over, it will be responsible for life-long maintenance and charge appropriate costs.

2. We will unconditionally replace the transformer performance and technical problems caused by non-human factors in the sold products. For problems caused by other reasons, our factory will actively assist in solving the user's difficulties, so as to ensure that the products are put into operation in time and reduce the loss to a minimum.

3. For the products sold, our factory will actively cooperate with users to do a good job in the on-site operation and maintenance management of the transformer. According to user needs, we can provide spare parts at cost price.

4. In case of product quality problems, our factory will arrive at the scene as soon as possible. Reply within one hour, the surrounding areas will be resolved within 48 hours, and the remote areas will be resolved within 72 hours! No matter what questions the user has, they will receive timely and thoughtful help from Jiangsu Yawei Transformer Factory.

Jiangsu Yawei Transformer Factory Service Hotline: 0513-88783075 Fax: 0513-88783075

亚威牌干式变压器用户登记卡

尊敬的用户：

您好!感谢您使用江苏亚威变压器厂为您生产的树脂绝缘干式电力变压器。我们将为您提供自 购买之日起 1 年的质量保证期。

同时为了更好地维护您的权力，请您务必填妥后附的《亚威牌干式变压器用户登记卡〉〉连同发 票，复印件一起用挂号件寄到江苏亚威变压器厂。我们将根据您填写的内容为您建立用户档案，以便于我们为您提供更好的售后服务。

此外，我们已为您专门设立了干式变压器售后服务热线 0513-88783075,欢迎您拔打。

Yawei dry-type transformer user registration card

Dear users:

Hello! Thank you for using the resin insulated dry-type power transformer produced for you by Jiangsu Yawei transformer factory. We will provide you with a one-year warranty from the date of purchase.

At the same time, in order to better protect your rights, please fill in the attached Yawei brand dry-type transformer user registration card and send it to Jiangsu Yawei transformer factory by registered mail together with the invoice and copy. We will establish a user file for you according to the content you fill in, so that we can provide you with better after-sales service.

In addition, we have set up a dry-type transformer after-sales service hotline 0513-88783075 for you. You are welcome to call.

亚威牌干式变压器用户登记卡(回执)

编号:

产品型号规格			
额定容量(kVA)		电压组合(kV)	
		铭牌编号	
制造厂			
发票号		购买年月	
用户单位名称			
用户单位地址			
联系人	电话		邮政编码
安装单位名称			
销售单位名称			
销售服务质量	口好 口一般 口差		
变压器投入时间			
用户意见：			

Yawei dry-type transformer user registration card (receipt)

No:

Product Model Specifications			
Rated voltage (kVA)		Voltage combination(k	
		Nameplate No.	
Manufacturer			
Receipt number		Year of purchase	
User unit name			
User unit address			
Contact	Telephone		Postal Code
Installation unit name			
Sales unit name			
Sales service	□ good □ average □ bad		
Transformer investment time			
User opinion：			

特别声明

为规范变压器售后服务标准，使每一位使用我公司产品的用户的权利、义务、责 任得到明确，请购买本公司产品的用户仔细阅读此声明。

因如下原因造成变压器损毁无法使用，本公司将对事故不承担任何责任。（含质 保期内）

1、 因不可抗力因素（地震、雷击、海啸、火山喷发等）；

2、 因环境变化，超出变压器使用环境条件要求：

2.1 环境温度：上限十 40°C,下限-30°C （户外），-5°C （户内）；

2.2 相对湿度：日平均值不大于 95%,月平均值不大于 90%。

2.3 因雨水天气造成的积水。

3、 使用不当（过压、过载、过电流）等原因，而造成变压器高低压三相线圈同时 烧毁；

4、 外部短路（外部输电线路短路、综保误动作、综保选用不当或失灵），造成变 压器因短路冲击损坏；

5、 异物侵入（包括动物、金属体、金属粉尖等其它杂物），造成拉弧，导致变压 器击穿；

6、 因过流、过压、保护不当、外部短路、异物侵入，导致变压器温度过高烧毁， 由此引发的火灾或其它附加损失，本公司不承担任何责任。

在质保期内（自出厂 15 个月内，含 3 个月安装期），因如下原因造成变压器损毁无 法使用，本公司将负责无偿更换新变压器或现场处理。

1、 变压器自身短路，造成一相或者两相之间击穿（如 A、B 相或者 B、C 相）；

2、 变压器自身短路或缺相，无法合闸送电；

3、 噪音超过国家标准；

4、 变压器运行声音异常。

special statement

In order to standardize the after-sales service standards of transformers and clarify the rights, obligations and responsibilities of every user who uses our products, please read this statement carefully.

If the transformer is damaged and cannot be used due to the following reasons, our company will not take any responsibility for the accident. (including the warranty period)

1. Due to force majeure factors (earthquakes, lightning strikes, tsunamis, volcanic eruptions, etc.);

2. Due to environmental changes, exceeding the requirements of the environmental conditions for the use of transformers:

2.1 Ambient temperature: upper limit + 40°C, lower limit -30°C (outdoor), -5°C (indoor);

2.2 Relative humidity: the daily average is not more than 95%, and the monthly average is not more than 90%.

2.3 Accumulation of water caused by rainy weather.

3. Improper use (overvoltage, overload, overcurrent) and other reasons, resulting in the simultaneous burning of the high and low voltage three-phase coils of the transformer;

4. External short circuit (short circuit of external transmission line, malfunction of comprehensive insurance, improper selection or failure of comprehensive insurance), resulting in damage to the transformer due to short-circuit impact;

5. Intrusion of foreign objects (including animals, metal bodies, metal powder tips and other debris) will cause arcing and lead to breakdown of the transformer;

6. Due to overcurrent, overvoltage, improper protection, external short circuit, and foreign matter intrusion, the transformer is overheated and burned, resulting in fire or other additional losses. The company does not assume any responsibility.

During the warranty period (within 15 months from the factory, including 3 months for installation), if the transformer is damaged and cannot be used due to the following reasons, our company will be responsible for free replacement of new transformers or on-site treatment.

1. The transformer itself is short-circuited, causing breakdown between one phase or two phases (such as A, B phase or B, C phase);

2. The transformer itself is short-circuited or lacks phase, so it cannot be switched on and powered on;

3. The noise exceeds the national standard;

4. The sound of the transformer is abnormal.