

树脂绝缘干式变压器 Cast Resin Insulation Dry-type Transformer



产品概述

公司于94年引进欧洲先进技术软件，通过CAD优化设计环氧树脂浇注的干式变压器。该产品铁心采用优质取向冷轧硅钢片材料，由德国GEORG公司的阶梯接缝铁心自动生产线制造并采用五阶步叠接新工艺，使铁心的空载性能大大提高。线圈采用Huntsman（原汽巴—嘉基）环氧树脂，由德国HEDRICH真空浇注设备完成线圈浇注过程。该产品树脂渗透性好、无气泡，因而局放量小。高、低压线圈紧密配合具有较强的结构强度，从而保证具有较强的抗短路能力和抗振动能力。该产品在正常使用条件下，使用寿命为30年，在运行寿命期内，按正常使用条件产品不会因温度变化导致线圈表面龟裂。

产品特点

低噪声低损耗

- 1)变压器的噪声源自铁心，本公司应用国内首家引进的德国GEORG公司阶梯接缝铁心自动生产线，采用Step—Lap新工艺，改善了铁心内部的磁路分布，以其特有的设备优势，降低了产品的噪声。
- 2)产品设计，采用CAD手段，选用优质的硅钢片，取较低的磁密使其远离饱和点，使得铁心中的谐波量减少，降低了噪声及空载损耗。
- 3)所有的夹紧部位均采用硅橡胶及弹性元件缓冲以减少振幅，降低噪声，同时在铁心外表面涂覆一定厚度的树脂，起到了隔音作用。

难燃不污染环境

- 1)优质树脂和玻璃纤维所组成的固体绝缘具有很高的电气强度(击穿电压不小于34kV/mm)，局部放电量小，可控制在 $\leq 5\text{pC}$ 范围内。
- 2)由于干式变压器所用的树脂和玻璃纤维复合绝缘材料在燃烧时产生的热量极小(约65mJ/kg)，因此具有阻燃自熄的特点。
- 3)干式变压器的铁心用树脂涂覆，线圈全部被树脂密封，因此可在空气相对湿度100%湿度下可靠运行，并具有很高的防腐蚀能力。干式变压器同时还具有过负荷能力强，热稳定性好、体积小、重量轻、安装简单方便，免维护等优点。广泛用于高层建筑、商业中心、机场、车站、码头、地铁、工厂和地下配电站等。

Product Overview

We adopt optimized CAD design for cast resin dry type transformer with advanced technology software imported from Europe in 1994. The core is made of cold-rolled grain-oriented silicon steel sheet cut in step-lap by automatic cutting line from GEORG, Germany and laminated with method of fifth-order step-by-step stack technology. In this way, no-load performance of the core is greatly improved. The winding assembly is casted in the vacuum resin casting machine imported from Hedrich, Germany. The resin materials are provided by (HUNTSMAN) CIBA-GEIGY, Switzerland. All these equipment and material ensure good permeability, no bubbles of casted resin, which leads to minimum partial discharge and high capability to withstand short circuit. The HV and LV winding mate with each other tightly, which ensures solid strength of structure and capability to withstand short circuit and vibration. Under normal service condition, the service life of dry type transformer is 30 years. No crackle will form on the surface of transformer winding due to temperature variation as long as the transformer runs under normal service condition.

Product Characteristic

Low-noise low-loss

- 1)The core is made of high quality cold-rolled grain-oriented silicon-steel sheet. The lamination sheets are produced by automatic step-lap core lamination line from GEORG, Germany. Such method improves the distribution of magnetic circuit result in lowering the noise level.
- 2)Product design adopts CAD software. By selection of high-quality silicon steel sheet and applying lower flux density, noise and no-load loss are reduced due to lower the harmonics in the core.
- 3)All parts used for clamping apply silicone rubber and flexible elements as buffers in order to reduce the amplitude and noise of components, while the surface of core is coated with a certain thickness of resin, which plays a role of sound-proof.

Non-flammable, no pollution to environment

- 1)Solid electrical insulation composed of high quality resin and glass fiber could provide with high electrical strength (breakdown voltage $\geq 34\text{kV/mm}$) and partial discharge can be controlled in the range of $\leq 5\text{pC}$.
- 2)As resin and glass fiber composite materials used in dry-type transformer generate very little heat when in combustion (about 65mJ/kg), the transformer has characteristic of fire-retardant self-extinguishing.
- 3)Dry-type transformer core is coated with the resin, while the coil is all encapsulated by resin. The transformer can provide relative reliable operation in circumstance of 100% humidity, and has high anti-corrosion ability. Dry-type transformer also has good advantages such as strong overload capability, good thermal stability, compact size, light weight, easy to install, maintenance-free and so on. Dry-type transformer is widely used in high-rise buildings, commercial centers, airports, stations, ports, subway, factories and underground power distribution stations.

●铁心

铁心采用优质取向冷轧硅钢片材料，由德国GEORG公司的阶梯接缝铁心自动生产线制造并采用阶梯接缝(Step-Lap)新工艺。使磁路结构得到改善，阶梯接缝处的磁通密度降低。由一流的设备，优质的硅钢片以及先进的工艺，铁心的空载性能大大提高。与常规结构铁心比较，空载损耗，空载电流和噪声水平分别减少5%~6%、20%~30%和6%。

●线圈

树脂浇注高压线圈

高压线圈为分段层式结构，采用Huntsman(原瑞士CIBA)树脂系统材料，德国HEDRICH设备真空浇注。低压线圈采用箔式结构。先进的工艺保证了线圈具有局放量小，抗短路能力强的特点。

高压线圈调压范围

$Un \pm 5\%$ 和 $Un \pm 2 \times 2.5\%$ 无励磁调压以及 $Un \pm 4 \times 2.5\%$ 有载调压。

●温控装置

具有故障报警，超温报警，超温跳闸，三相巡检，启、停风冷装置等功能。还可配置计算机远程控制接口。

●冷却装置

采用辐流风机，具有噪声低，冷却效果好，安装方便等优点，加装风机可增加干式变压器的出力。

●新产品开发、质量控制

公司注重新产品研究开发，具有一支很强的设计、工艺、试验及材料检测的技术队伍。广泛应用CAD手段，可满足用户各种特种产品的订货要求。

产品采用IEC国际标准组织生产，通过ISO9001质量体系认证。由于采用现代化生产技术和严格的质量控制，产品能经受严格的出厂试验和型式试验，保证具有高标准的质量，优良的售后服务。

●Core

The core is made of high quality cold-rolled grainoriented silicon-steel sheet, laminated by automatic step-lap core lamination line imported from GEORG, Germany. Such method improves the distribution of magnetic circuit result in lowering the nose level. By selection of high-quality silicon steel sheet and applying advanced technology, equipment, no-load performance of transformer is improved. Compared with conventional core, no-load loss, no-load current and noise level are reduced by 5%~6%, 20%~30%, 6% respectively.

●Coil

Cast-resin high-voltage coil

High-voltage coil applies fractionation-layer structure, casted with Huntsman (the former Swiss CIBA) resin materials, Germany) and by HEDRICH vacuum casting equipment. Low-voltage coil applies foil structure. Advanced technology ensures little partial discharge of coil and strong ability to withstand short circuit.

Tapping range of high-voltage coil

$Un \pm 5\%$ and $Un \pm 2 \times 2.5\%$ OCTC, as well as $Un \pm 4 \times 2.5\%$ OLTC.

●Temperature control device

With fault alarm, over-temperature alarm, over-temperature tripping, three-phase polling, start and stop air-force cooling device and other functions. It can also configure computer remote control interface.

●Cooling device

Radial flow fan has advantages of low noise, good cooling effect, easy installation. It also improves the operation capacity by installing fans.

●New product development and quality control

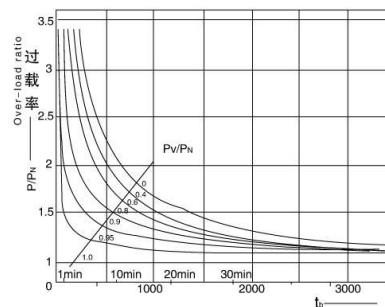
QRE pays great attention to new product research and development. There is rich technical team working for design, technology, testing and materials control. With widely application of CAD, a variety of client's special requirement can be satisfied.

Transformers are produced according to IEC relevant standards. The company passed ISO9001 quality system authentication. By use of modern production technology and strict quality control, the product can pass strict factory testing and type testing to ensure high standards of quality.

●过载能力

干式变压器在运行时，可允许短时过载，其短时过载曲线如下图a、b所示。图a、b分别给出了不同环境温度(40℃或20℃)和运行条件下，过载容量与过载时间的关系曲线。

PN—额定容量
Pv—起始负载
P—过载容量

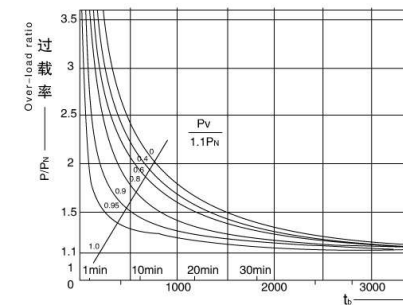


图a 环境温度 $\theta_a=40^\circ\text{C}$ 允许过载时间
Fig.a Ambient temperature $\theta_a=40^\circ\text{C}$ Overload time allowable

●Overload capacity

Short-term overload is allowed for Dry-type transformers during operation. The short-term overload curves are shown in following figures a, b. Figure a, b show overload capacity and overload time curve in different ambient temperatures (40 °C or 20 °C) and operating conditions respectively.

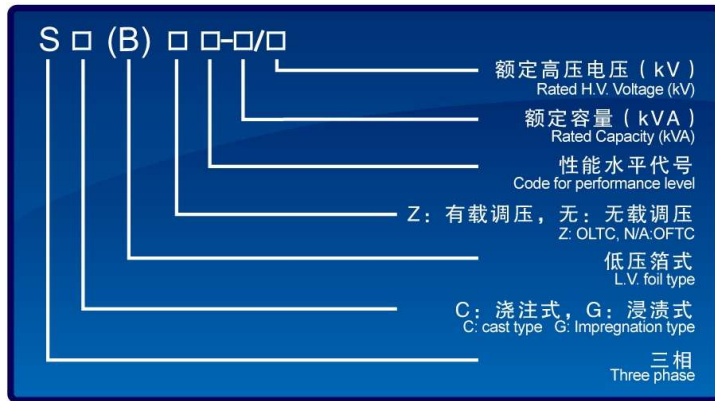
PN- Rated capacity
Pv- Initial load
P - Overload capacity



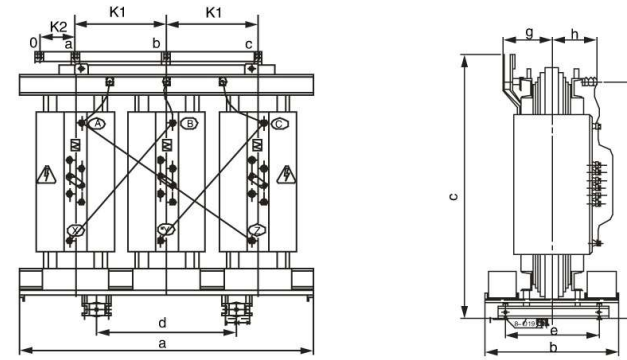
图b 环境温度 $\theta_a=20^\circ\text{C}$ 允许过载时间
Fig.b Ambient temperature $\theta_a=20^\circ\text{C}$ Overload time allowable

产品标准：GB/T1 0228-2008、GBI 094.11-2007、IEC60076-11、DIN42523
Product standard：GB/T1 0228-2008, GBI 094.11-2007, IEC60076-11, DIN42523

型号说明 Model Coding



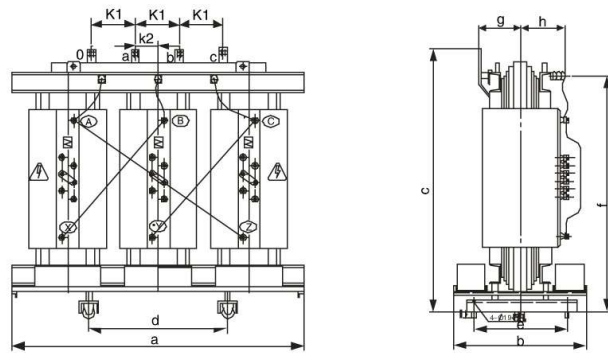
10kV级315-3150kVA外型图
Outline Diagram for 315-3150kVA, 10kV series Transformer



外形图二 Outline diagram 2

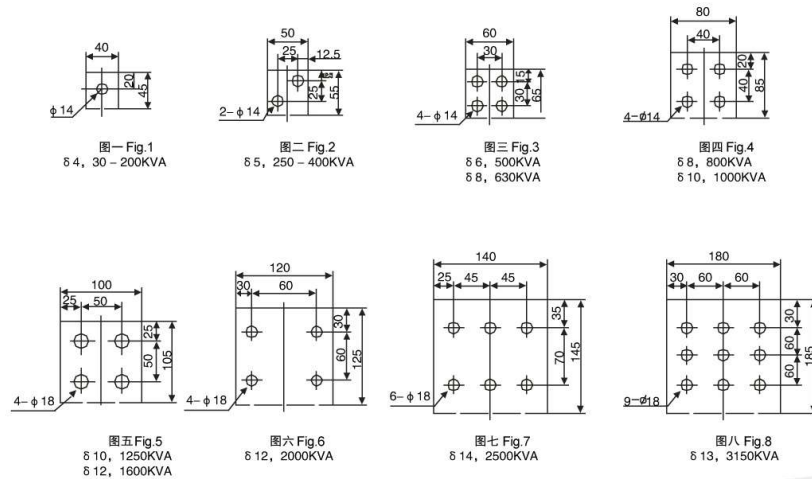
结构图 Structure Chart

10kV级30-250kVA外型图
Outline Diagram for 30-250kVA, 10kV series Transformer



外形图一 Outline diagram 1

低压接线端子图 Low-voltage terminal diagram



技术参数 Technical Parameters

SC(B)系列F级绝缘干式变压器技术数据(频率均为: 50HZ)
 额定电压: 高压6, 6.3, 10, 10.5, 11kV 低压0.4kV
 分接范围: ± 5%: ± 2 × 2.5%
 联结组标号: Yyn0, Dyn11
 绝缘水平: 10/0.4kV LI75AC35/AC3
 6/0.4kV LI60AC25/AC3

Technical parameters for SC(B) Series F grade insulation dry-type distribution transformer (Frequency: 50HZ)
 Rated voltage: HV-6, 6.3, 10, 10.5, 11 kV; LV-0.4kV
 Tapping Range: ± 5%: ± 2 × 2.5%
 Vector Group: Dyn11; Yyn0
 Insulation Level: 10/0.4kV: LI 75AC35/AC3kV
 6/0.4kV: LI 60AC25/AC3kV

SC(B)9型10kV干式配电变压器技术参数和外形尺寸
 Specification of 10kV (SC(B)9 Series) Dry Type Distribution Transformer

型号 Model	UK(%)	P ₀ (W)	R _k (75°C) (W)	I ₀ (%)	L _p dB(A)	G ₀ (kg)	外形尺寸 (mm) Outer dimension										低压端子 L.V. terminal	参考 外形图 Diagram	
							a	b	c	d	e	f	g	h	k1	k2			
SC9-30/10	210	650	1.6	44	300	870	600	828	550	400	733	199	225	150	75	图一 Fig.1	外形图一 Diagram1		
SC9-50/10	295	900	1.6	44	380	880	800	905	550	400	833	205	234	150	75				
SC9-80/10	400	1270	1.4	45	500	960	600	1010	550	400	938	214	243	150	75				
SC9-100/10	420	1450	1.4	45	550	970	600	1010	550	400	938	214	243	150	75				
SC9-125/10	490	1700	1.2	46	700	1000	600	1050	550	400	978	215	249	150	75				
SC9-160/10	580	1960	1.2	46	770	1030	650	1098	550	400	968	225	270	150	75				
SC9-200/10	650	2330	1.0	47	850	1060	720	1100	550	550	1018	223	257	150	75				
SCB9-250/10	750	2540	0.8	47	1010	1120	720	1145	550	550	988	240	268	150	75				
SCB9-315/10	910	3200	0.8	48	1145	1180	720	1130	550	550	988	281	275	395	150			图二 Fig.2	图二 Diagram2
SCB9-400/10	1000	3690	0.8	48	1360	1220	720	1195	550	550	1065	292	283	410	150				
SCB9-500/10	1200	4510	0.6	48	1600	1250	830	1270	660	660	1175	297	288	425	150				
SCB9-630/10	1390	5430	0.6	49	1900	1300	830	1370	660	660	1275	310	298	440	150				
SCB9-800/10	1350	5510	0.6	49	1830	1340	830	1295	660	660	1200	295	284	450	150				
SCB9-1000/10	1630	6430	0.5	50	2245	1420	880	1395	820	660	1270	320	298	480	150				
SCB9-1250/10	1830	7510	0.5	50	2555	1500	880	1390	820	660	1265	330	308	505	150				
SCB9-1600/10	2170	8960	0.5	52	3160	1610	900	1500	820	660	1355	342	321	545	200				
SCB9-2000/10	2530	10830	0.5	52	3875	1730	920	1585	820	660	1445	375	332	585	200				
SCB9-2500/10	3200	13360	0.4	53	4480	1770	960	1705	820	660	1535	381	339	595	200				
SCB9-3150/10	3700	15870	0.4	54	5385	1840	990	1865	1070	820	1675	401	342	620	200				
SCB9-4000/10	4530	19660	0.4	54	6400	1920	1020	2005	1150	820	1815	421	345	645	200				
SCB9-5000/10	5370	23750	0.4	54	7530	1970	1050	2145	1230	820	1955	441	348	670	200				
SCB9-6300/10	6220	28150	0.4	54	8780	2030	1080	2285	1310	820	2095	461	351	695	200				
SCB9-8000/10	7180	32950	0.4	54	10150	2100	1110	2425	1390	820	2235	481	354	720	200				
SCB9-10000/10	8250	38150	0.4	54	11650	2180	1140	2565	1470	820	2375	501	357	745	200				
SCB9-12500/10	9450	43750	0.4	54	13280	2270	1170	2705	1550	820	2515	521	360	770	200				
SCB9-16000/10	11150	50650	0.4	54	15150	2380	1210	2845	1630	820	2655	541	363	795	200				
SCB9-20000/10	13050	58050	0.4	54	17180	2500	1250	2985	1710	820	2795	561	366	820	200				
SCB9-25000/10	15150	66050	0.4	54	19380	2630	1290	3125	1790	820	2935	581	369	845	200				
SCB9-31500/10	17550	74650	0.4	54	21750	2770	1330	3265	1870	820	3075	601	372	870	200				

SC(B)9干式配电变压器带IP20保护外壳外形尺寸

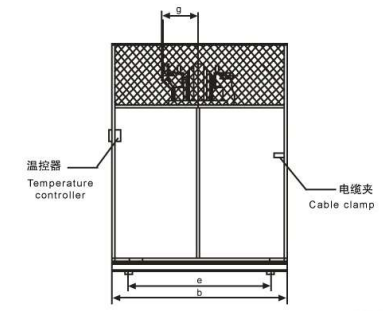
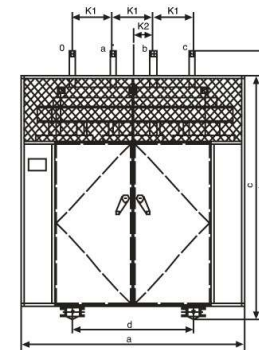
Outer dimensions of SC (B) 9 Dry-type distribution transformer with IP20 protection enclosure

型号 Model	UK(%)	a	b	c	d	e	h	g	k1	k2	G ₀ (kg)
SC9-30/10	4	1450	1000	1260	550	820	1410	199	150	75	500
SC9-50/10		1450	1000	1260	550	820	1410	205	150		
SC9-80/10		1450	1000	1260	550	820	1410	214	150		
SC9-100/10		1450	1000	1260	550	820	1410	214	150		
SC9-125/10		1450	1000	1260	550	820	1410	215	150		
SC9-160/10		1450	1000	1260	550	820	1410	225	150		
SC9-200/10		1500	1100	1310	550	820	1460	223	150		
SCB9-250/10		1500	1100	1310	550	820	1460	240	150		
SCB9-315/10		1700	1300	1310	550	1070	1460	281	130		
SCB9-400/10		1700	1300	1420	550	1070	1570	292	130		
SCB9-500/10	1700	1350	1480	660	1180	1630	297	130			
SCB9-630/10	1700	1350	1580	660	1180	1730	310	130			
SCB9-800/10	1700	1350	1580	660	1180	1730	295	130			
SCB9-1000/10	1900	1350	1630	820	1180	1780	320	150	0	2540	
SCB9-1250/10	1900	1350	1630	820	1180	1780	330	150			
SCB9-1600/10	2100	1350	1730	820	1180	1890	342	150			
SCB9-2000/10	2100	1350	1780	820	1180	1930	375	150			
SCB9-2500/10	2300	1500	1940	820	1180	2090	381	200			
SCB9-3150/10	2300	1600	2180	1070	1280	2380	401	225			
SCB9-4000/10	2500	1600	2250	1070	1280	2500	417	250			
SCB9-5000/10	2500	1600	2250	1070	1280	2500	417	250			
SCB9-6300/10	2500	1600	2250	1070	1280	2500	417	250			
SCB9-8000/10	2500	1600	2250	1070	1280	2500	417	250			

• 低压接线端子与不带外壳产品端子相同
 • L.V. connection terminals are the same with those of non-enclosure products.

SC(B)9干式配电变压器带IP20保护外壳外形图

Outline of SC(B)9 Dry-type Transformer with IP20 Protection enclosure.

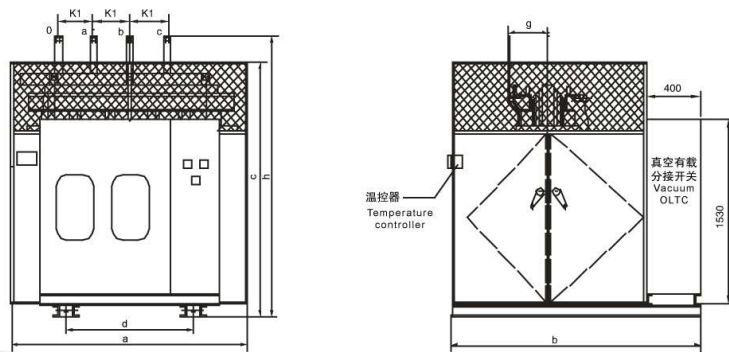


SC(B)Z9干式配电变压器带IP20保护外壳外形尺寸
Outer dimensions of SC (B) Z9 Dry-type distribution transformer with IP20 protection enclosure

型号 Model	UK(%)	a	b	c	d	h	g	k1
SCBZ9-250/10	4	1500	1500	1310	550	1460	240	150
SCBZ9-315/10		1700	1700	1310	550	1460	281	130
SCBZ9-400/10		1700	1700	1420	550	1570	292	130
SCBZ9-500/10		1700	1750	1480	660	1630	297	130
SCBZ9-630/10		1700	1750	1580	660	1730	310	130
SCBZ9-630/10	6	1700	1750	1580	660	1730	295	130
SCBZ9-800/10		1900	1750	1630	820	1780	320	150
SCBZ9-1000/10		1900	1750	1630	820	1780	330	150
SCBZ9-1250/10		2100	1750	1730	820	1880	342	150
SCBZ9-1600/10		2100	1750	1780	820	1930	375	150
SCBZ9-2000/10		2300	1900	1940	820	2090	381	200
SCBZ9-2500/10		2300	2000	2180	1070	2380	401	225

- 有载变压器低压端子与无载调压配电变压器相同。
- 有载变压器不带外壳产品尺寸与带外壳尺寸原则上一样，其高度可适当降低。
- 带外壳有载变压器除有载开关侧外，其余三面开双门。
- 有载变压器并联运行时，必须配置同步控制器，且并联运行台数不能超过3台。
- 温控器装在外壳低压右侧。
- LV terminal of transformer with OLTC is same to that of transformer with OCTC.
- Dimension of transformer with OLTC but without enclosure is same to that of with enclosure in principle, while the height could be appropriately lowered.
- There are double doors on other three sides except on the side of OLTC for transformer with enclosure.
- Synchronous controller must be equipped while transformers with OLTC are in parallel operation. Transformers in parallel operation can't be more than 3 units.
- Install thermostat on the right side of enclosure.

SC(B)Z9有载调压干式配电变压器带IP20保护外壳外形图
Outline diagram of SC (B) Z9 Dry-type distribution transformer with IP20 protection enclosure

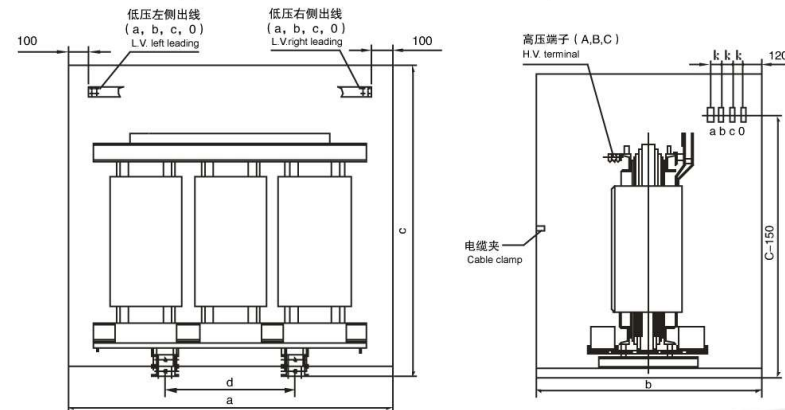


4. SC(B)系列标准横排侧出线外形尺寸
Outer dimensions of SC(B) series transformer with standard horizontal side leading

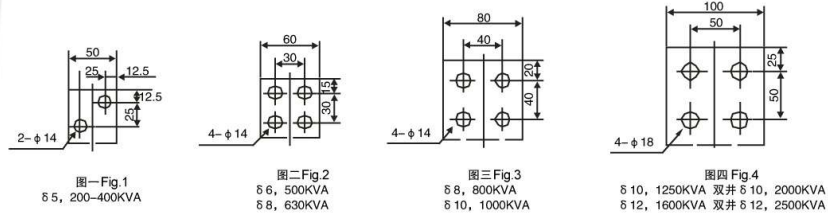
型号 Model	UK(%)	a	b	c	d	k	侧出线低压 接线端子 英文缺失
SCB-200/10	4	1500	1100	2200	550	80	图1
SCB-250/10		1500	1100	2200	550	80	
SCB-315/10		1700	1300	2200	550	80	
SCB-400/10		1700	1300	2200	550	80	
SCB-500/10		1700	1350	2200	660	80	
SCB-630/10	6	1700	1350	2200	660	80	图2
SCB-630/10		1700	1350	2200	660	80	
SCB-800/10		1900	1350	2200	820	80	图3
SCB-1000/10		1900	1350	2200	820	80	
SCB-1250/10		2100	1350	2200	820	120	
SCB-1600/10		2100	1300	2200	820	120	图4
SCB-2000/10		2300	1500	2300	820	120	
SCB-2500/10	2300	1600	2300	1070	120		

- 对于额定容量小于200kVA的变压器，按常规出线，其侧出线由用户用软电缆自行联接。
- 容量2000, 2500kVA, a,b,c三相采用双排出线，两出线排间距为12(2000kVA)或14(2500kVA)。
- 因变压器侧出零线在上方，对零线从底部引出的开关柜，建议变压器零线仍由上面进入开关柜。
- 温控器装在外壳低压右侧。
- For transformers with rated power less than 200kVA, outlet is as per regular leading, side-leading is connected by user's soft cable.
- For transformers with rated power 2000kVA or 2500kVA, a, b, c three phase leading is led in two rows, and the distance between the two rows is 12(2000kVA) or 14(2500kVA).
- For the switch cabinet from the bottom of which neutral leading is led, we suggest that the neutral leading should be led into the cabinet from the top of the transformer, because the side neutral leading is on the top of the transformer.
- Temperature controller is set at the right side of L.V. side.

SC(B)系列标准横排侧出线外形图
Outer dimensions of SC(B) series Transformer with standard horizontal side leading



侧出线低压接线端子图
Side Leading L.V. Connection Terminals Diagram



SC(B)10系列F级绝缘干式配电变压器技术数据(频率均为: 50HZ)

额定电压: 高压6, 6.3, 10, 10.5, 11kV 低压 0.4kV

分接范围: ±5%; ±2×2.5%

联接组别: Yyn0; Dyn11

绝缘水平: 10/0.4kV LI75AC35/AC3 6/0.4kV LI60AC25/AC3

Technical parameters for SC(B)10 series F grade insulation dry-type distribution transformer (Frequency: 50Hz)

Rated voltage: HV-6, 6.3, 10, 10.5, 11 kV; LV-0.4kV

Tapping Range: ±5%; ±2×2.5%

Vector Group: Dyn11; Yyn0

Insulation Level: 10/0.4kV: LI75AC35/AC3 6/0.4kV: LI60AC25/AC3

5. SC(B)10型10kV级干式配电变压器技术数据和外形尺寸

Technical parameter and dimensions of S(B)10 10kV dry-type distribution transformer

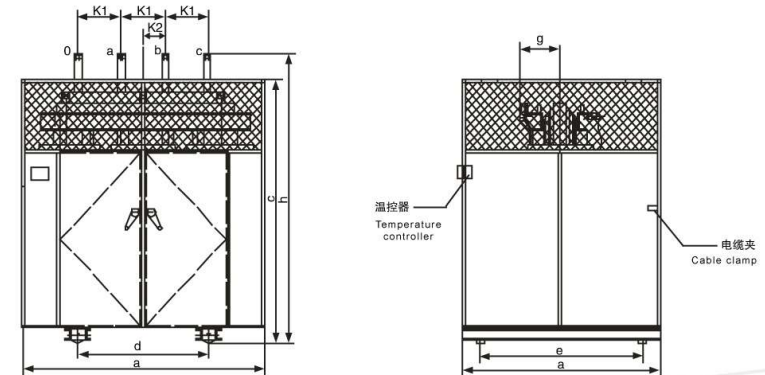
型号 Model	UK(%)	Po(W)	Pk(75°C) (W)	Io(%)	Lo dB(A)	Gt(kg)	外形尺寸 (mm) Outer dimension										低压 端子 L.V. terminal	参考 外形图 Reference Diagram
							a	b	c	d	e	f	g	h	k1	k2		
SC10-30/10	195	623	1.4	43	320	880	600	840	550	400	753	199	225	150	75	图一	外形图一	
SC10-50/10	270	880	1.4	43	400	900	600	925	550	400	853	205	234	150	75			
SC10-80/10	370	1215	1.2	44	520	960	600	1020	550	400	945	214	240	150	75			
SC10-100/10	400	1390	1.2	44	570	970	600	1030	550	400	958	214	243	150	75			
SC10-125/10	450	1630	1.0	45	720	1020	600	1070	550	400	998	215	249	150	75			
SC10-160/10	530	1870	1.0	45	800	1040	650	1110	550	400	978	225	270	150	75			
SC10-200/10	600	2230	0.8	46	870	1080	720	1115	550	550	1038	223	259	150	75			
SCB10-250/10	680	2420	0.7	46	1125	1140	720	1165	550	550	1008	240	268	150	75			
SCB10-315/10	820	3050	0.7	46	1245	1200	720	1150	550	550	1008	281	275	405	150	图二		
SCB10-400/10	920	3500	0.7	47	1460	1240	720	1205	550	550	1105	292	283	420	150			
SCB10-500/10	1100	4290	0.5	47	1700	1270	850	1290	660	660	1195	297	288	435	150	图三		
SCB10-630/10	1260	5160	0.5	48	2100	1320	850	1390	660	660	1295	310	300	450	150			
SCB10-630/10	1210	5235	0.5	48	2030	1360	850	1315	660	660	1200	295	297	460	150	图四	外形图二	
SCB10-800/10	1460	6110	0.4	49	2445	1440	900	1415	820	660	1290	320	309	490	150			
SCB10-1000/10	1700	7140	0.4	49	2765	1525	900	1410	820	660	1285	330	312	515	150	图五		
SCB10-1250/10	1960	8510	0.4	51	3360	1635	920	1520	820	660	1355	342	336	555	200			
SCB10-1600/10	2350	10290	0.4	51	4125	1755	950	1595	820	660	1445	375	335	595	200	图六		
SCB10-2000/10	2900	12890	0.3	52	4690	1795	960	1715	820	660	1530	381	350	605	200			
SCB10-2500/10	3420	15060	0.3	52	5585	1865	1000	1875	1070	820	1670	401	342	630	250	图七		

6. SC(B)10干式配电变压器带IP20保护外壳外形尺寸
Outer dimension of SC(B)10 series dry-type distribution transformer with IP20 enclosure

型号 Model	UK(%)	a	b	c	d	e	h	g	k1	k2	Gt(kg)
SC10-30/10	4	1450	1000	1260	550	820	1410	199	150	75	640
SC10-50/10		1450	1000	1260	550	820	1410	223	150		700
SC10-80/10		1450	1000	1260	550	820	1410	210	150		800
SC10-100/10		1450	1000	1260	550	820	1410	214	150		850
SC10-125/10		1450	1000	1260	550	820	1410	215	150		1020
SC10-160/10		1450	1000	1260	550	820	1410	225	150		1070
SC10-200/10		1500	1100	1310	550	820	1460	223	150	1150	
SCB10-250/10		1500	1100	1310	550	820	1465	240	150	1325	
SCB10-315/10		1700	1300	1310	550	1070	1475	281	130	1480	
SCB10-400/10		1700	1300	1420	550	1070	1585	292	130	1710	
SCB10-500/10		1700	1350	1480	660	1180	1650	297	130	1950	
SCB10-630/10		1700	1350	1580	660	1180	1750	310	130	2350	
SCB10-630/10	6	1700	1350	1580	660	1180	1750	295	130	0	2280
SCB10-800/10		1900	1350	1630	820	1180	1800	320	150		2745
SCB10-1000/10		1900	1350	1630	820	1180	1800	330	150		3065
SCB10-1250/10		2100	1350	1730	820	1180	1910	342	150		3760
SCB10-1600/10		2100	1350	1780	820	1180	1950	375	150		4525
SCB10-2000/10		2300	1500	1940	820	1180	2090	381	200		5180
SCB10-2500/10	2300	1600	2180	1070	1280	2380	401	225	6185		

• 低压接线端子与不带外壳产品端子相同
• L.V. connection terminals are the same with those of non-enclosure products

SC(B)10干式配电变压器带IP20保护外壳外形图
Outline of SC(B)10 Dry-type Distribution Transformer with IP20 Protection enclosure



7. SC(B)Z10有载调压干式配电变压器带IP20保护外壳外形尺寸

Outer dimension of SC(B)Z10 dry-type distribution transformer with OLTC with IP20 enclosure

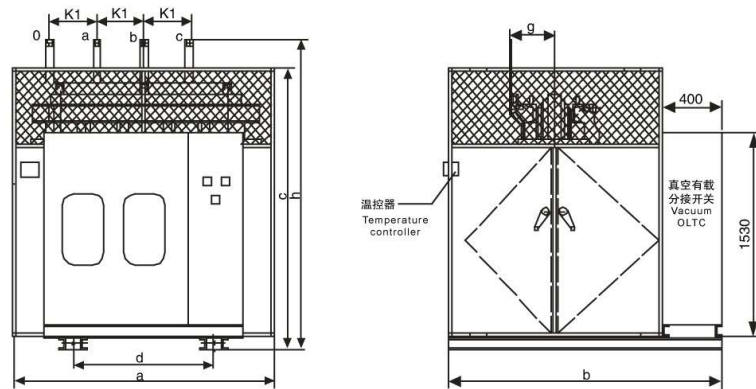
型号 Model	UK(%)	a	b	c	d	h	g	k1	Gt(kg)
SCBZ10-250/10	4	1500	1500	1310	550	1465	240	150	1645
SCBZ10-315/10		1700	1700	1310	550	1475	281	130	1800
SCBZ10-400/10		1700	1700	1420	550	1585	292	130	2030
SCBZ10-500/10		1700	1750	1480	660	1650	297	130	2270
SCBZ10-630/10	6	1700	1750	1580	660	1750	310	130	2670
SCBZ10-630/10		1700	1750	1580	660	1750	295	130	2600
SCBZ10-800/10		1900	1750	1630	820	1800	320	150	3065
SCBZ10-1000/10		1900	1750	1630	820	1800	330	150	3385
SCBZ10-1250/10		2100	1750	1730	820	1910	342	150	4080
SCBZ10-1600/10		2100	1750	1780	820	1950	375	150	4845
SCBZ10-2000/10		2300	1900	1940	820	2090	381	200	5500
SCBZ10-2500/10		2300	2000	2180	1070	2380	401	225	6505

- 有载变压器低压端子与无载调压配电变压器相同。
- 有载变压器不带外壳产品尺寸与带外壳尺寸原则上一样，其高度可适当降低。
- 带外壳有载变压器除有载开关侧外，其余三面开双门。
- 有载变压器并联运行时，必须配置同步控制器，且并联运行台数不能超过3台。

- L.V. terminals of on-load tapping transformer are same with off-load tapping distribution transformer.
- The dimensions of on-load tapping transformer without enclosure are same with that of transformers with enclosure in principle, and the height can be decreased properly.
- For on-load tapping transformers with enclosure, except for OLTC side, the other three sides are open in two directions.
- The synchronous control instrument must be set when on-load tapping transformers are in parallel operation, and the quality of transformers in shunt is not more than three.

SC(B)Z10有载调压干式配电变压器带IP20保护外壳外形图

Outline of SC(B)Z10 Dry-type Distribution Transformers with OLTC with IP20 Protection enclosure



SC(B)系列20kV级树脂绝缘干式配电变压器技术参数 (频率均为: 50HZ)

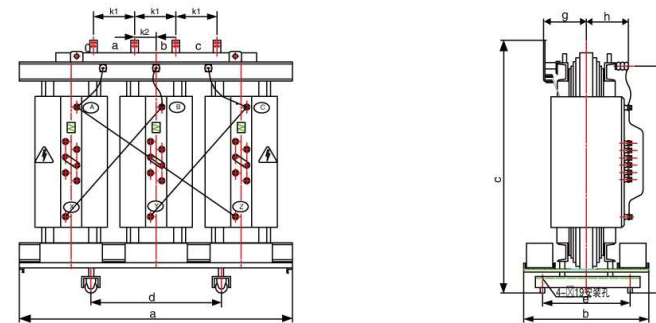
额定电压: 高压20 (24, 22, 20, 10) kV; 低压0.4kV
分接范围: $\pm 5\%$; $\pm 2 \times 2.5\%$
联结组号: Yyn0, Dyn11
绝缘水平: 10kV时 LI75AC35/AC3kV; 20kV时 LI125AC50/AC3kV

Technical parameters for SC(B) Series 20kV cast resin dry-type distribution transformer (Frequency: 50HZ)

Rated voltage: HV-20 (24, 22, 20, 10) kV; LV-0.4kV
Tapping Range: $\pm 5\%$; $\pm 2 \times 2.5\%$
Vector Group: Dyn11; Yyn0
Insulation Level: 10kV: LI75AC35/AC3kV; 20kV: LI125AC50/AC3kV

20kV单电压50-250kVA外形图

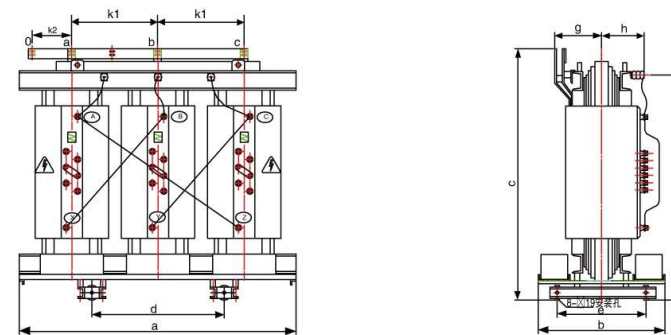
Outline Diagram for 50-250kVA, 20kV series Transformer with single voltage ratio



外形图三 Outline diagram 3

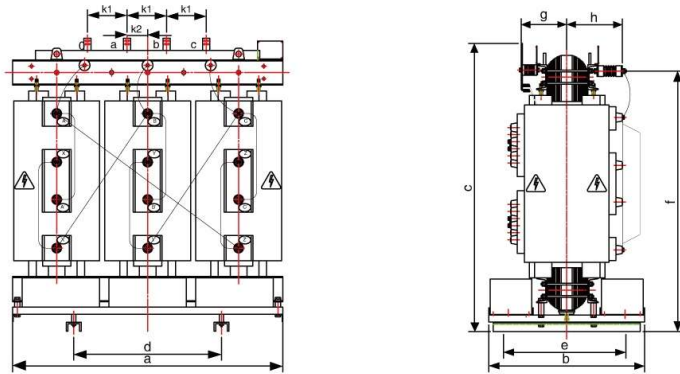
20kV单电压315-2500kVA外形图

Outline Diagram for 315-2500kVA, 20kV series Transformer with single voltage ratio



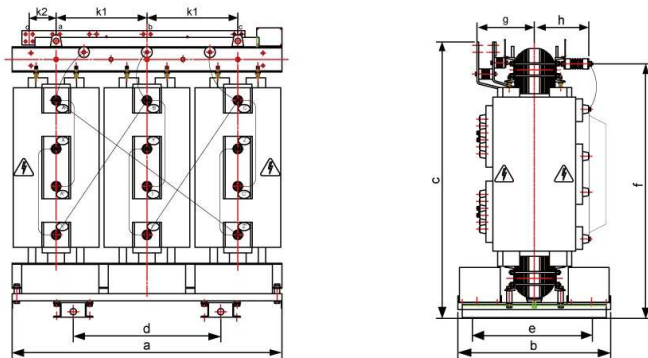
外形图四 Outline diagram 4

20 (10) kV双电压50~250kVA外形图
Outline Diagram for 50~250kVA, 20(10)kV series Transformer with dual-voltage ratio



外形图五 Outline diagram 5

20 (10) kV双电压315~2500kVA外形图
Outline Diagram for 315~2500kVA, 20(10)kV series Transformer with dual-voltage ratio



外形图六 Outline diagram 6

SC(B)9型20kV级干式配电变压器技术参数和外形尺寸)
Technical parameters & Outer Dimensions for SC(B)9 Series 20kV dry-type distribution transformer

型号 Model	UK (%)	Po (W)	Pk (75°C)	Io (%)	Lo dB (A)	Gt (kg)	外形尺寸 (mm) Dimension												参考外形图 Reference Outline diagram	L×B×H(防护外壳) (mm) Protective Enclosure LxBxH
							a	b	c	d	e	f	g	h	k1	k2	低压端子 LV Terminal			
SC9-5020 (10) -0.4	360	1135	2.0	.46	480	1180	600	940	550	400	910	230	340	150	75	图一 Fig. 1	外形图三 Outline diagram 3	1700×1350×1400		
SC9-10020 (10) -0.4	570	1835	1.6	.46	660	1250	600	1225	550	400	1095	245	345	150	75		外形图五 Outline diagram 5	1700×1350×1650		
SC9-16020 (10) -0.4	710	2270	1.2	.46	950	1280	600	1230	550	400	1100	255	350	150	75		外形图五 Outline diagram 5	1700×1350×1650		
SC9-20020 (10) -0.4	780	2710	1.2	.48	1200	1360	720	1250	550	550	1120	270	365	150	75		外形图五 Outline diagram 5	1900×1350×1680		
SC9-25020 (10) -0.4	895	3145	1.2	.48	1430	1390	720	1330	550	550	1180	275	380	150	75		外形图五 Outline diagram 5	1900×1350×1730		
SCB9-31520 (10) -0.4	1025	3755	1.0	.48	1500	1410	720	1370	550	550	1240	280	370	450	130	图二 Fig. 2	外形图四 Outline diagram 4	2100×1400×1770		
SCB9-40020 (10) -0.4	1215	4455	1.0	.50	1680	1450	720	1400	550	550	1280	290	380	470	130		外形图四 Outline diagram 4	2100×1400×1800		
SCB9-50020 (10) -0.4	1425	5300	1.0	.50	1900	1480	830	1450	660	660	1340	300	390	485	130	图三 Fig. 3	外形图四 Outline diagram 4	2100×1400×1840		
SCB9-63020 (10) -0.4	1615	6290	0.8	.50	2200	1500	830	1485	820	660	1384	309	400	505	130		外形图四 Outline diagram 4	2100×1500×1880		
SCB9-80020 (10) -0.4	1850	7600	0.8	.51	3100	1630	830	1655	820	660	1530	330	420	550	150	图四 Fig. 4	外形图六 Outline diagram 6	2300×1500×2040		
SCB9-100020 (10) -0.4	2185	8995	0.6	.51	3500	1700	830	1680	820	660	1555	341	440	575	150		外形图六 Outline diagram 6	2300×1500×2060		
SCB9-125020 (10) -0.4	2520	10610	0.6	.51	3600	1720	900	1750	820	660	1660	342	450	585	150	图五 Fig. 5	外形图六 Outline diagram 6	2400×1500×2130		
SCB9-160020 (10) -0.4	2945	12750	0.6	.52	4600	1880	920	1940	820	660	1770	375	450	635	150		外形图六 Outline diagram 6	2500×1600×2330		
SCB9-200020 (10) -0.4	3420	15060	0.4	.52	5250	2100	950	1980	1070	820	1815	380	470	680	200	图六 Fig. 6	外形图六 Outline diagram 6	2700×1600×2370		
SCB9-250020 (10) -0.4	4085	17810	0.4	.52	6410	2230	990	2070	1070	820	1890	400	490	730	200		图七 Fig. 7	外形图六 Outline diagram 6	2800×1700×2460	

注：1、双电压技术参数和外形尺寸同上表
2、表中数据仅供参考，公司保留更改数据

Notes: 1. Dual-voltage technical parameters and dimensions refers to above table.
2. Above parameters are subject to change without prior notice.

SC(B)9-35kV级干式配电变压器技术参数和外形尺寸
Technical parameters & Outer dimensions for SC(B)9 Series 35kV dry-type distribution transformer

额定电压: 35(33)kV
低压电压: 0.4(0.415,0.433)kV
分接范围: ±5%; ±2×2.5%
绝缘水平: LI170AC70/AC3kV

Rated Voltage:35(33)kV
L.V.: 0.4(0.415,0.433)kV
Tapping Range: ±5%; ±2×2.5%
Insulation Level: LI170AC70/AC3kV

型号 Model	UK(%)	Po(W)	Pk(75°C) (W)	Ic(%)	Lp dB(A)	Gt(kg)	联结组标号 Vector Group	本体尺寸 (mm)		轨距 (mm) Rail Distance
								长X宽X高 Transformer LXWXH	防护外壳尺寸 (mm) 长X宽X高 Protective Enclosure LXWXH	
SC9-3035	6	360	1050	2.4	49	500	Yyn0	1320X750X1300	2100X1500X2000	660X550
SC9-5035		500	1310	2.2	49	620		1330X750X1475	2100X1500X2000	
SC9-8035		520	1750	1.8	49	800		1360X815X1468	2100X1500X2000	
SC9-10035		600	1920	1.6	50	1100		1420X700X1585	2200X1600X2000	
SC9-12535		760	2440	1.6	50	1220		1420X900X1500	2200X1600X2000	
SC9-16035		860	2590	1.6	50	1350		1450X920X1550	2200X1600X2000	
SC9-20035		Yyn0 或/ Dyn11	960	3050	1.2	50	1500	1490X920X1690	2200X1600X2150	660X550
SC9-25035			1080	3500	1.2	51	1700	1490X920X1760	2200X1600X2150	
SC9-31535			1250	4150	1.0	51	1900	1550X850X1650	2350X1650X2150	
SC9-40035			1530	4980	1.0	51	2150	1740X885X1695	2350X1650X2300	
SC9-50035			1780	6100	0.8	52	2580	1810X920X1695	2400X1650X2300	
SC9-63035			2050	7070	0.8	52	2800	1870X925X2005	2400X1650X2400	
SC9-80035			2400	8380	0.6	52	3450	1880X1030X1925	2600X1700X2500	
SC9-100035	8	2700	9600	0.6	52	4000	1970X1060X1965	2700X1700X2500	820X660	
SC9-125035		3150	11700	0.4	53	4350	1980X1050X1980	2700X1700X2500		
SC9-160035		3580	14220	0.4	53	5235	2050X1050X2080	2800X1700X2580		
SC9-200035		4200	16740	0.4	54	6330	2200X1050X2150	2900X1700X2630		
SC9-250035	13	4900	20040	0.4	55	7550	2300X1100X2130	3000X1800X2580	1070X820	
SC9-315035		5850	24000	0.35	56	7800	2500X1270X2325	3200X2100X2850		
SC9-400035		6800	28500	0.35	57	9600	2660X1270X2368	3350X2100X3000		

SC10-35kV级无载调压干式电力变压器技术参数和外形尺寸
Technical parameters & Outer dimensions for SC10 Series 35kV dry-type distribution transformer with OCTC

型号 Model	高压电压 (kV) H.V.	低压电压 (kV) L.V.	高压分接 (%) Trapping Range	UK(%)	Po(W)	Pk(75°C) (W)	Ic(%)	Lp dB(A)	Gt(kg)	联结组标号 Vector Group	本体尺寸 (mm)		轨距 (mm) Rail Distance
											长X宽X高 Transformer LXWXH	防护外壳尺寸 (mm) 长X宽X高 Protective Enclosure LXWXH	
SC10-80035	35 或/ 38.5	31.5 或/ 6 6.3 10 10.5 11	±5 或/ ±2×2.5%	6	2140	8210	0.6	50	3250	Yyn0 或/ Yd11 或/ Dyn11	1880X1000X1925	820X660	
SC10-100035					2540	9540	0.6	50	3900		1970X1000X2100		
SC10-125035					2980	11280	0.6	52	4800		2050X1000X2180		
SC10-160035				3510	13620	0.5	52	5500	2150X1000X2250		1070X820		
SC10-200035				4020	15900	0.5	53	6230	2200X1200X2300				
SC10-250035				4620	19080	0.5	54	7200	2350X1200X2350				
SC10-315035				5730	21400	0.4	57	9850	2500X1200X2430				
SC10-400035				6670	25720	0.4	57	10500	2600X1600X2535		1475X1475		
SC10-500035				7950	30530	0.4	58	12800	2880X1675X2580				
SC10-630035				9410	35670	0.3	58	15960	2950X1675X2650				
SC10-800035	10780	40230	0.3	60	18210	3000X1850X2850	2X1020X1475						
SC10-1000035	12310	48530	0.3	60	23800	3100X1850X3070							
SC10-1250035	14980	56410	0.2	60	29600	3000X1850X3305							
SC10-1600035	18380	66360	0.2	62	36500	3800X1900X3380							
SC10-2000035	21800	74660	0.2	62	40200	3850X1900X3415							

SCZ10-35kV级有载调压干式电力变压器技术参数和外形尺寸
Technical parameters & Outer dimensions for SCZ10 Series 35kV dry-type distribution transformer with OLTC

型号 Model	高压电压 (kV) H.V.	低压电压 (kV) L.V.	高压分接 (%) Trapping Range	UK(%)	Po(W)	Pk(75°C) (W)	Ic(%)	Lp dB(A)	Gt(kg)	联结组标号 Vector Group	本体尺寸 (mm)		轨距 (mm) Rail Distance
											长X宽X高 Transformer LXWXH	防护外壳尺寸 (mm) 长X宽X高 Protective Enclosure LXWXH	
SCZ10-400035	35 或/ 38.5	31.5 或/ 6 6.3 10 10.5 11	±4×2.5%	8	7010	26630	0.4	56	11800	Yyn0 或/ Yd11	3480X2570X2535	1475X1475	
SCZ10-500035					8300	31520	0.4	58	14000		3480X2570X2500		
SCZ10-630035					9830	36500	0.3	58	17050		3480X2600X2650		
SCZ10-800035				11280	41480	0.3	60	19310	3480X2600X2850		2X1020X1475		
SCZ10-1000035				12910	49940	0.3	60	25000	3480X2600X3070				
SCZ10-1250035				15650	58070	0.2	62	30600	3480X2650X3335				
SCZ10-1600035				19240	68360	0.2	62	37600	3800X2950X3380				
SCZ10-2000035				22660	78900	0.2	62	41300	3850X2950X3415				