QRE 钱江电气
QIANTANG RIVER ELECTRIC

35kV~500kV
电力变压器

35kV~500kV Power Transformer

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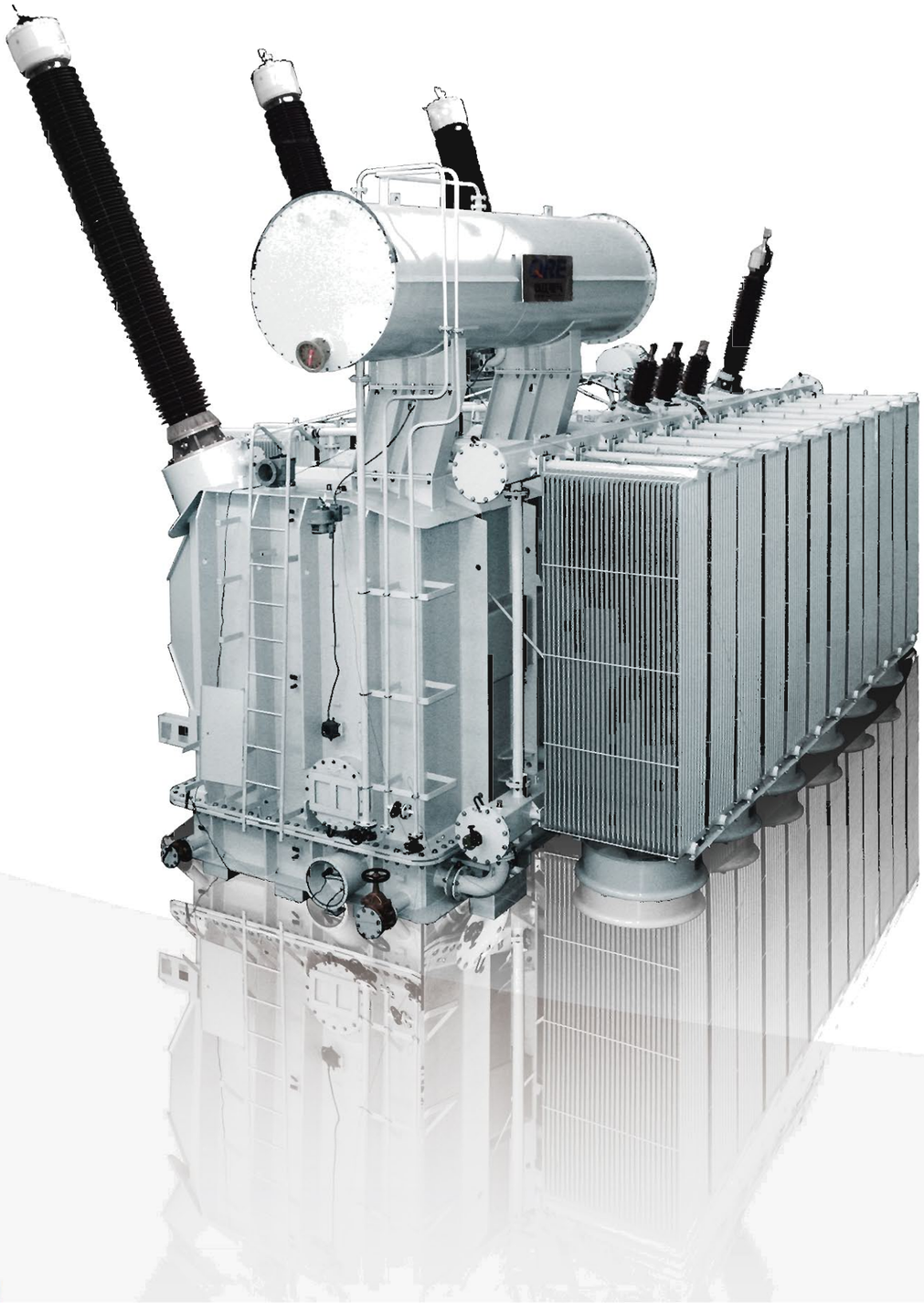
钱 潮

35kV~500kV电力变压器
35kV~500kV Power Transformer



产品概述

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

Product Overview

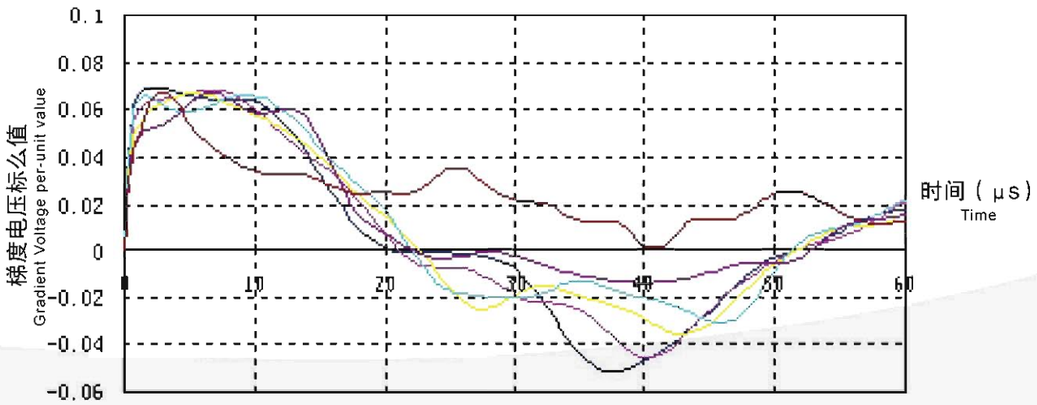
35kV-500kV series oil-immersed power transformers apply optimized advanced technologies in order to offer low noise, low loss, low partial discharge, high resistance to short-circuit capacity. Advanced design software are applied for electro-magnetic calculation and design of transformer while 3-D, 2-D CAD software for structural design; to ensure sufficient safety margin during short-circuit period on the base of in-depth theoretical and experimental studies on power transformer's magnetic, thermal, mechanical strength and short-circuit strength; to ensure reliable electrical transformer insulation on the base of calculation of main, vertical insulation, and of accurate calculation of the electric field distribution in inner coil's impact voltage gradient and coil end; to ensure low partial discharge on the base of choosing optimal structure by application of electric filed analysis on easily concentrated part of electric field.

产品特点

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

Product Characteristic

1.Potential distribution is effectively improved by application of software to calculate the impact potential distribution and gradient potential distribution, calculate the potential distribution between the various parts of the coil, between the coil and the coil, coil and earthing.



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

2.低损耗

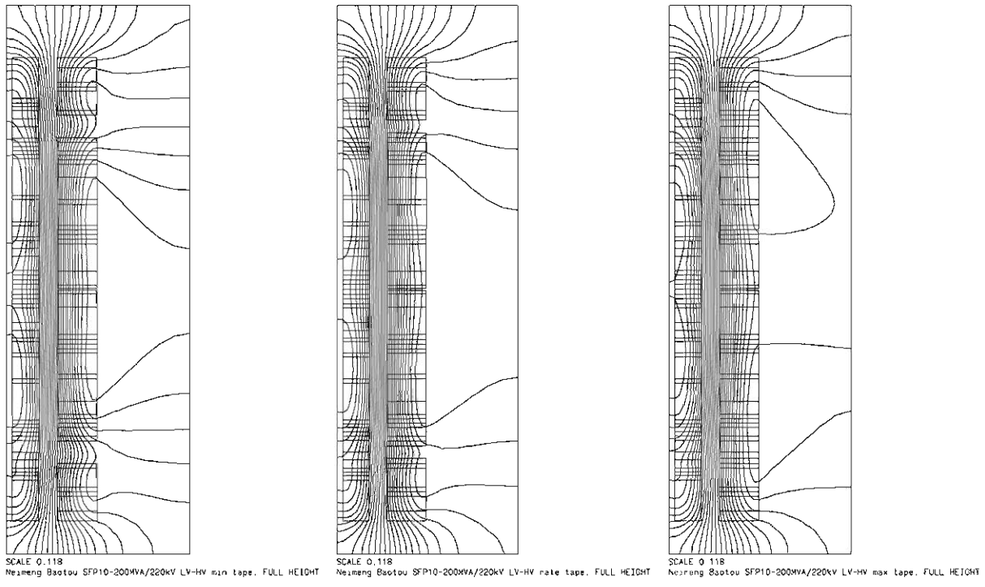
采用电磁优化设计软件，优化铁心和绕组设计；

采用漏磁计算，采取有效措施降低杂散损耗，同时也有效防止局部过热，降低绕组热点温升。

2.Low loss

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

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

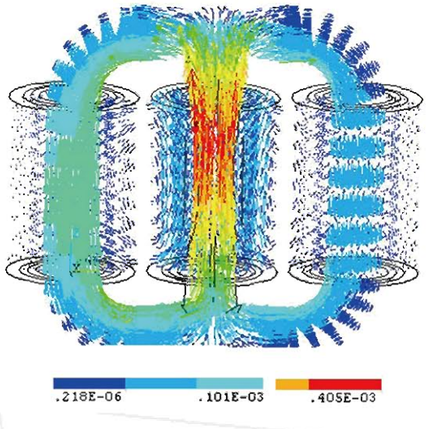


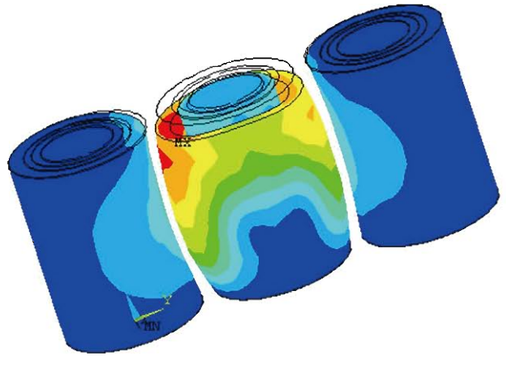
3.高抗短路能力

采用动态分析方法进行短路机械力解析计算。

3.High resistance to short-circuit capacity

Accurately control the short-circuit forces of coil by analytical calculation of short-circuit mechanical force and using the dynamic analysis calculation method.





4.低局放，提高使用寿命。

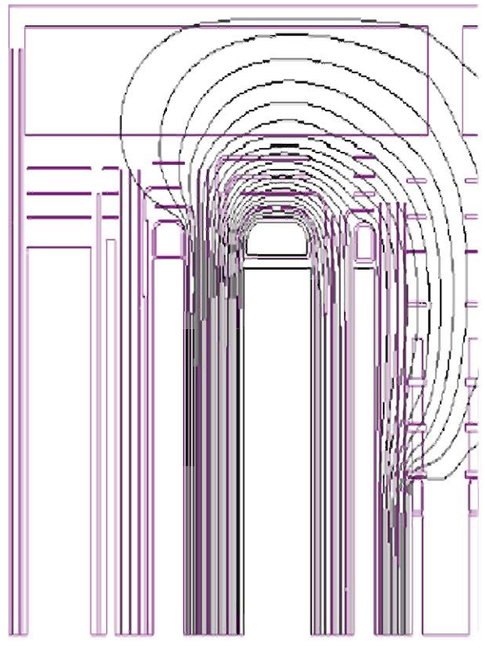
(1)对电场进行解析计算，改善电场集中区域。

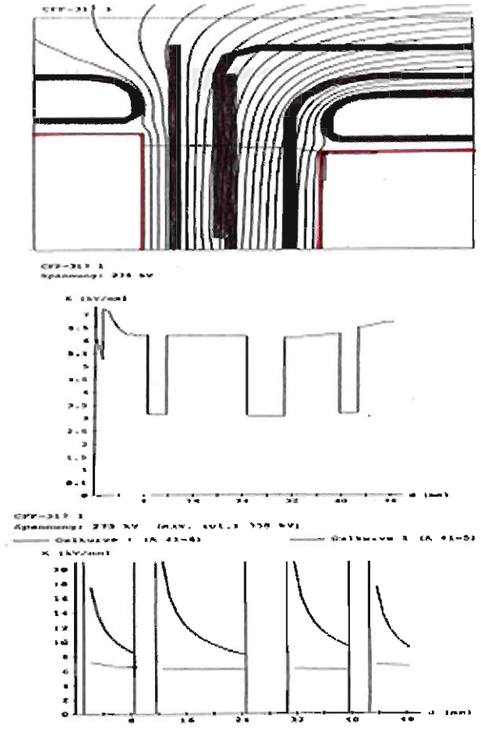
(2)真空注油，有效防止在绝缘件及变压器内部形成气泡。

4.Low partial discharge, improve service life.

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

(2)Vacuum filling oil, effectively prevention of formation of air bubbles inside the transformer and insulation parts to reduce partial discharge.





5.低噪声

选用优质铁心材料；选择合适的磁通密度与铁心自振频率；采用高抗短路强度器身结构；改进油箱与器身连接方式。

5.Low noise

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

6.低温升

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

6.Low Temperature Rise

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

质量保证

2002年5月，SZ9-40MVA/110kV顺利通过国家变压器质量监督检验中心突发短路试验；

2007年11月，SSZ11-50MVA/110kV顺利通过国家变压器质量监督检验中心和荷兰KEMA监视的突发短路试验；

2003年8月，SFZ9-31.5MVA/220kV顺利通过国家变压器质量监督检验中心突发短路试验；

2005年1月，SFSZ9-90MVA/220kV顺利通过国家变压器质量监督检验中心监视试验；

2007年5月，SFP10-200MVA/220kV顺利通过国家变压器质量监督检验中心监视试验；

2008年6月，SFPSZ11-180MVA/220kV顺利通过国家变压器质量监督检验中心和荷兰KEMA监视的突发短路试验。

Quality warranty

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

In November 2007, SSZ11-50MVA/110kV transformer successfully passed dynamic short-circuit test carried out at National Transformer Quality Supervision and Inspection Center and witnessed by KEMA, Netherlands.

In August 2003, SFZ9-31.5MVA/220kV transformer successfully passed dynamic short-circuit test carried out at National Transformer Quality Supervision and Inspection Center.

In January 2005, SFSZ9-90MVA/220kV transformer successfully passed witnessed tests carried out at National Transformer Quality Supervision and Inspection Center.

In May 2007, SFP10-200MVA/220kV transformer successfully passed witnessed tests carried out at National Transformer Quality Supervision and Inspection Center.

In June 2008, SFPSZ11-180MVA/220kV transformer successfully passed dynamic short-circuit test carried out at National Transformer Quality Supervision and Inspection Center and witnessed by KEMA, Netherlands.


CTQC

No. L0681

试验合格证书

No. CTQC-S-07-644

国家变压器质量监督检验中心


CTQC

试验合格证书

No. CTQC-S-08-401

国家变压器质量监督检验中心


CTQC

China National Transformer Quality Supervision Testing Center

Test Report

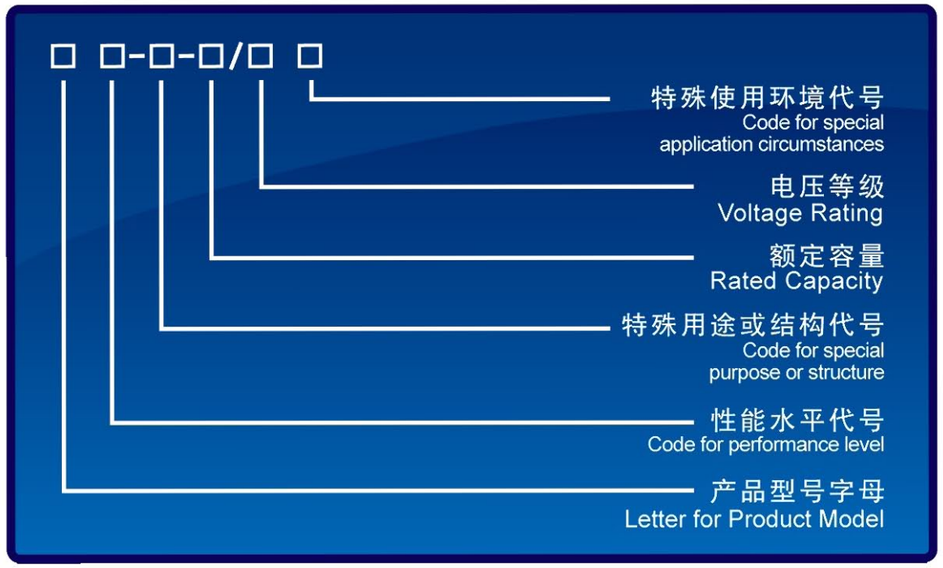

KEMA

INSPECTION REPORT


KEMA

INSPECTION REPORT

型号说明 Model Coding



技术参数 Technical Parameters

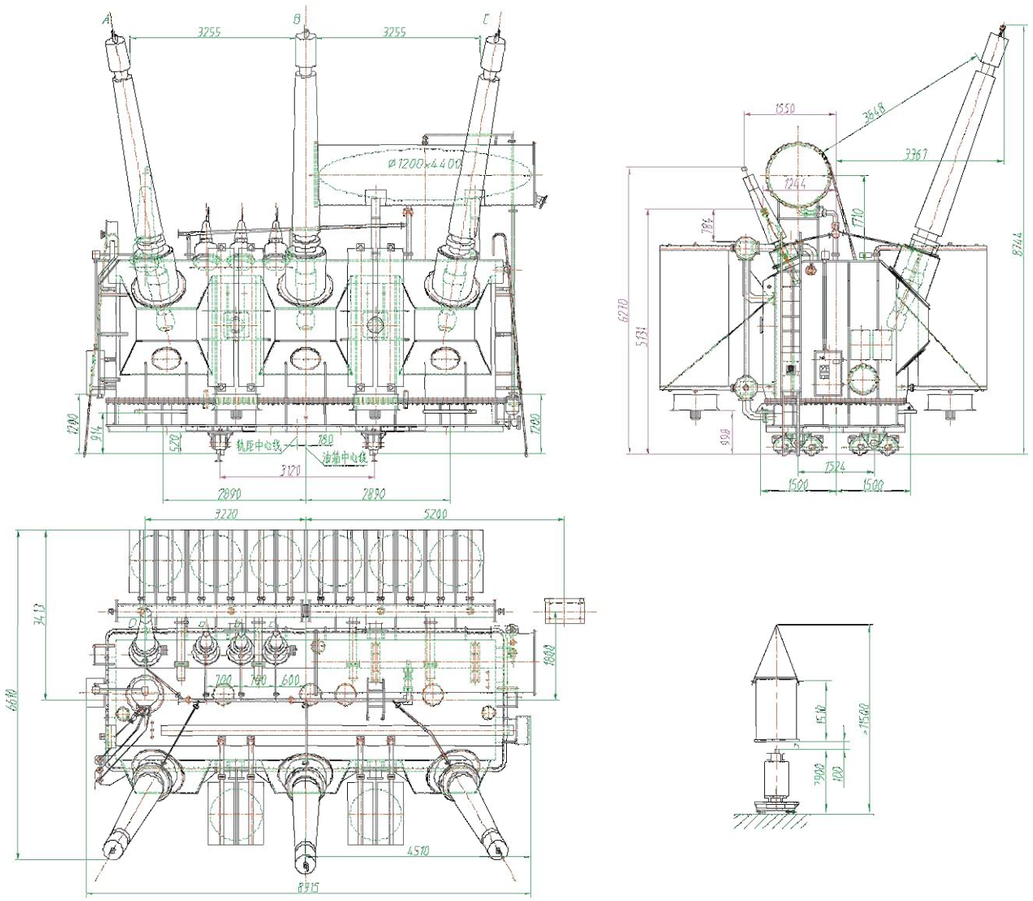
500kV单相自耦三绕组无励磁调压电力变压器技术参数
500kV Single-phase 3-winding Auto Power Transformer with OCTC*

容量(高/中/低)(MVA) Capacity (H/M/L)	额定电压（kV） Rated voltage			联结组标号 Vector group	空载损耗(kW) No-load loss	负载损耗(kW) Load loss	空载电流(%) No-load current	阻抗电压UK(1-2)/UK(1-3)/UK(2-3)(%) Impedance voltage
	高压 HV	中压 MV	低压 LV					
250/250/80	525/√3	230/√3±2×2.5%	36 66	Ia0i0	70	350	0.2	12/44/30
								14/50/35
334/334/100					75	450		16/54/36
								16/54/36
								18/58/38
								20/62/40
400/400/120			66		100	540		18/58/38
								20/60/38

*OCTC:off-circuit tap changer

330kV电力变压器技术参数
330kV Power Transformer

型号 Model	额定电压（kV） Rated voltage		联结组标号 Vector group	空载损耗(kW) No-load loss	负载损耗(kW) Load loss	阻抗电压(%) Impedance voltage	重量(MT) Weight	外形尺寸(mm) Dimensions
	高压 HV	低压 LV						长×宽×高 L×W×H
SFZ-125000/330	330±10×1%	33	YNd5	88	365	11.75	175	8915×6610×8744
SFP-150000/330	363±2×2.5%	13.8		113	424	15.1	150	13500×6090×8350
DFP-240000/330	363/√3±2×2.5%	20		135	450	14	174	6070×6770×9560
SSP-360000/330	363±2×2.5%	15.75	YNd11	275	1000	16	278	11215×4000×6260
SFP-370000/330	363±2×2.5%	20		210	835	14	268	15800×5766×9240
SFP-400000/330	363±2×2.5%	24		215	915	14	272	16020×4850×9345



SFZ-125000/330变压器外形图
Outer Diagram of SFZ-125000/330 Transformer

220kV三相双绕组无励磁调压电力变压器技术参数
220kV 3-phase 2-winding Power Transformer with OCTC

额定容量(kVA) Rated capacity	额定电压（kV） Rated voltage		联结组标号 Vector group	空载损耗(kW) No-load loss	负载损耗(kW) Load loss	空载电流(%) No-load current	短路阻抗(%) Short-circuit impedance
	高压 HV	低压 LV					
31500	220±2×2.5% 242±2×2.5%	6.3	YNd11	26	128	0.3	12~14
40000		6.6		31	149		
50000		10.5		36	178		
63000		11		41	208	0.2	
75000		10.5		47	237		
90000		11		50	272		
120000		13.8		61	327		
150000		11		83	380		
160000		13.8		85	400	0.15	
180000		15.75		90	436		
240000		18		105	520		
300000		20		140	620		
360000		15.75		160	700		
370000		18		168	720		
400000		20		180	770		
420000				185	800		

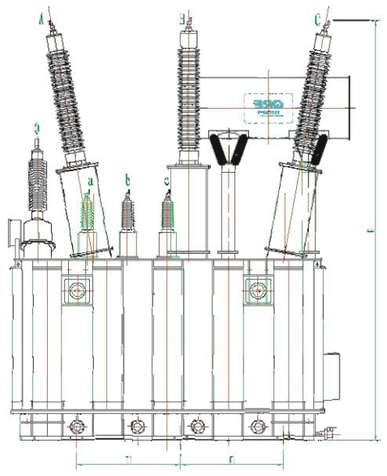
220kV低压为66kV级三相双绕组无励磁调压电力变压器技术参数
220kV (LV: 66kV) 3-phase 2-winding Power Transformer with OCTC

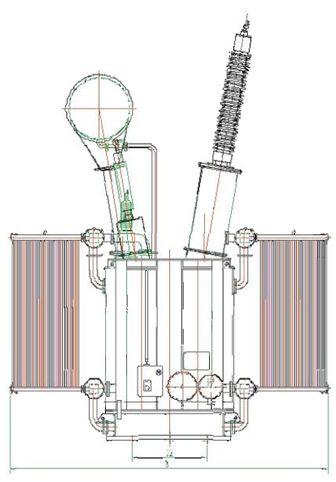
额定容量(kVA) Rated capacity	额定电压（kV） Rated voltage		联结组标号 Vector group	空载损耗(kW) No-load loss	负载损耗(kW) Load loss	空载电流(%) No-load current	短路阻抗(%) Short-circuit impedance
	高压 HV	低压 LV					
31500	220±2×2.5% 242±2×2.5%	63 66 69	YNd11	29	143	0.3	12~14
40000				34	167		
50000				40	200		
63000				47	234	0.2	
90000				55	305		
120000				70	365		
150000				85	428		
180000				90	485	0.15	
240000				110	600		

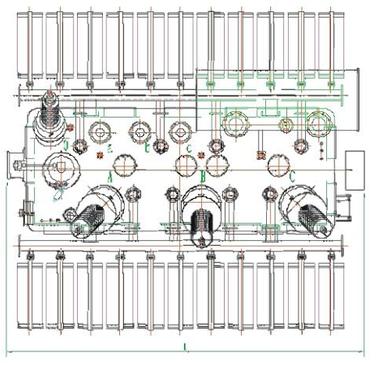
220kV 三相双绕组有载调压电力变压器技术参数
220kV 3-phase 2-winding Power Transformer with OLTC**

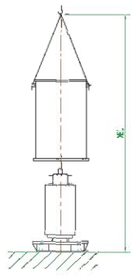
额定容量(kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	低压 LV	联结组标号 Vector group	空载损耗(kW) No-load loss	负载损耗(kW) Load loss	空载电流(%) No-load current	短路阻抗(%) Short-circuit impedance
31500	220±8×1.25%	6.3 6.6 10.5 11 35 37 38.5	YNd11	25	128	0.3	12~14
40000				32	148		
50000				35	179		
63000				45	208	0.2	
90000		10.5 11 35 37 38.5		55	272		
120000				69	327		
150000				80	383		
180000				90	442	0.15	
120000		66 69		70	327	0.2	
150000				85	388		
180000				95	450	0.15	

**OLTC:On load tap changer









220kV系列三相双绕组变压器外形结构参考图
Outer Diagram of 220kV series 3-phese 2-winding Transformer

220kV 三相三绕组无励磁调压自耦电力变压器技术参数
220kV 3-phase 3-winding Auto Power Transformer with OCTC

额定容量(kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	中压 MV	低压 LV	联结组标号 Vector group	升压组合 Step-up combination 空载损耗(kW) No-load loss	升压组合 Step-up combination 负载损耗(kW) Load oss	降压组合 Step-up combination 空载损耗(kW) No-load loss	降压组合 Step-up combination 负载损耗(kW) Load oss	空载电流(%) No-load current	短路阻抗(%) Short-circuit impedance 升压 Step up	短路阻抗(%) Short-circuit impedance 降压 Step down
31500	220±2×2.5% 242±2×2.5%	115 121	6.6 10.5 11 35 37 38.5	YNa0d11	19	111	17	94	0.3	高-中 HV-MV 12~14	高-中 HV-MV 8~10
40000					22	136	20	114			
50000					26	161	23	136			
63000					30	190	27	162	0.2	高-低 HV-LV 8~12	高-低 HV-LV 28~34
90000					38	255	34	221			
120000			10.5 11 13.8 15.75 18 35 37 38.5		47	321	42	272			
150000					55	383	49	323		中-低 MV-LV 14~18	中-低 MV-LV 18~24
180000					62	438	56	366	0.15		
240000					74	563	67	476			

升压结构的容量分配为（100/50/100）%; Capacity distribution for step-up transformer (100/50/100)%,
降压结构的容量分配为（100/100/50）%; Capacity distribution for step-down transformer (100/100/50)%.

220kV三相三绕组无励磁调压电力变压器技术参数
220kV 3-phase 3-winding Power Transformer with OCTC

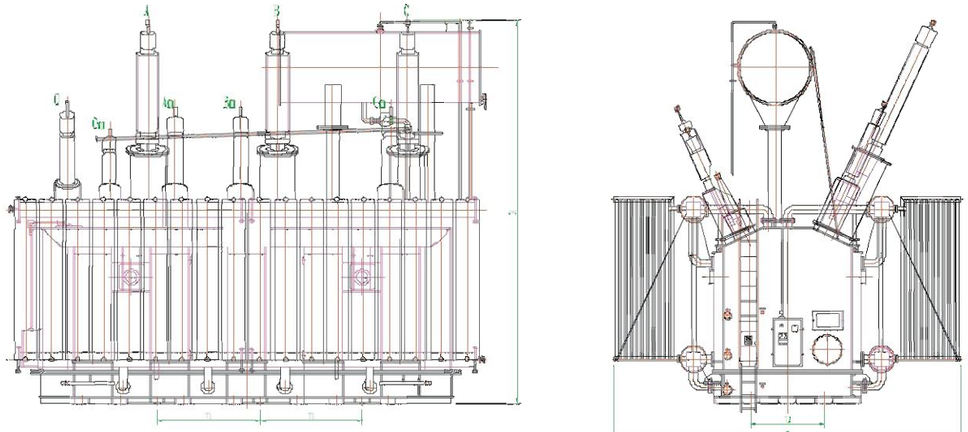
额定容量(kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	中压 MV	低压 LV	联结组标号 Vector group	空载损耗 (kW) No-load loss	负载损耗 (kW) Load loss	空载电流 (%) No-load current	短路阻抗(%) Short-circuit impedance 升压 Step up	短路阻抗(%) Short-circuit impedance 降压 Step down
31500	220±2×2.5% 242±2×2.5%	69 115 121	6.3 6.6 10.5 11 35 37 38.5	YNyn0d11	30	153	0.3	高-中 HV-MV 22~24	高-中 HV-MV 12~14
40000					36	178			
50000					42	212			
63000					46	238	0.2	高-低 HV-LV 12~14	高-低 HV-LV 22~24
90000			10.5 11 13.8 35 37 38.5		55	322			
120000					69	408			
150000					80	465		中-低 MV-LV 7~9	中-低 MV-LV 7~9
180000			11 13.8 15.75 35 37 38.5		90	500	0.15		
240000					120	630			
300000					140	750			

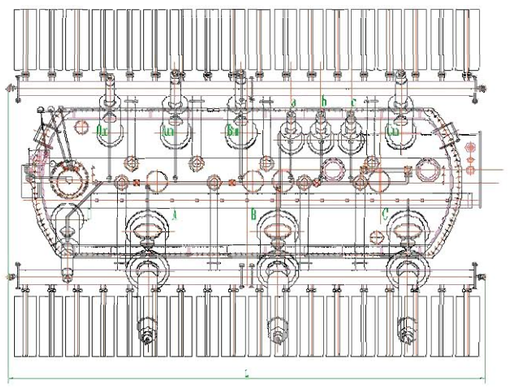
220kV 三相三绕组有载调压电力变压器技术参数
220kV 3-phase 3-winding Power Transformer with OLTC

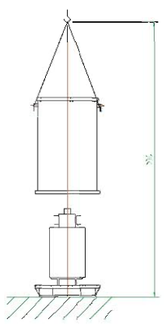
额定容量(kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	中压 MV	低压 LV	联结组标号 Vector group	空载损耗(kW) No-load loss	负载损耗(kW) Load loss	空载电流(%) No-load current	容量分配(%) Capacity allocation	短路阻抗(%) Short-circuit impedance
31500	220±8×1.25%	69 115 121	6.3 6.6 10.5 11 35 37 38.5	YNyn0d11	32	153	0.3	100/100/100 100/50/100 100/100/50	高-中 HV-MV 12~14
40000					38	178			
50000					45	210			
63000					50	241	0.2		高-低 HV-LV 22~24
90000					59	318			
120000			10.5 11 35 37 38.5		70	410			
150000					80	465			中-低 MV-LV 7~9
180000					90	550	0.15		
240000					115	690			

220kV 三相三绕组有载调压自耦电力变压器技术参数
220kV 3-phase 3-winding Auto Power Transformer with OLTC

额定容量(kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	中压 MV	低压 LV	联结组标号 Vector group	空载损耗(kW) No-load loss	负载损耗(kW) Load loss	空载电流(%) No-load current	容量分配(%) Capacity allocation	短路阻抗(%) Short-circuit impedance
31500	220±8×1.25%	115 121	6.3	YNa0d11	20	102	0.3	100/100/50	高-中 HV-MV 8~10
40000			6.6 10.5 11		23	125			
50000					27	148			
63000			35		32	178	0.2		高-低 HV-LV 28~34
90000			37 38.5		39	230			
120000			10.5 11		45	280			
150000			35		52	322			中-低 MV-LV 18~24
180000			37		56	345	0.15		
240000			38.5		62	450			







220kV系列三相三绕组变压器外形结构参考图
Outer Diagram of 220kV series 3-phese 3-winding Transformer

SF11系列110kV三相双绕组无励磁调压电力变压器技术参数
110kV (SF11 Series) 3-phase 2-winding Power Transformer with OCTC

型号 Model	额定容量(kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	低压 LV	联结组标号 Vector group	空载损耗(kW) No-load loss	负载损耗(kW) Load loss	空载电流(%) No-load current	短路阻抗(%) Short-circuit impedance	重量(MT) Weight 油重 Oil weight	总重 Total weight	运输重 Transport weight	外形尺寸(mm) Dimensions H	L	B	HL	T
SF11-6300/110	6300	110±2×2.5% 121±2×2.5%	6.3 6.6 10.5 11	YNd11	6.5	34	0.3	10.5	6.6	22.5	19.8	4300	5200	3700	5600	1475
SF11-8000/110	8000				7.5	42			7.1	25.2	22.1	4420	5420	3950	5720	
SF11-10000/110	10000				9	50			7.6	27.4	24	4560	5730	4280	5800	
SF11-12500/110	12500				10.5	59			8.3	31	28.1	4670	5790	4310	6000	
SF11-16000/110	16000				13	73			9.5	35.6	30.5	4810	6120	4340	6300	2040
SF11-20000/110	20000				16	88	0.25		10.6	39.7	35.5	4820	6200	4380	6400	
SF11-25000/110	25000				18	104			11	44.8	37.6	4990	6330	4420	6800	
SF11-31500/110	31500				20	123		10.5(12)	12.6	50	43.2	5080	6380	4510	7000	
SF11-40000/110	40000				24	148		10.5(14)	14.5	59.6	49	5280	6500	4840	7300	
SF11-50000/110	50000				28	180	0.2	10.5 (14、17)	16.2	67.5	57	5320	6660	5080	7500	
SF11-63000/110	63000				35	220			16.8	76	65	5610	6760	5100	8000	
SF11-75000/110	75000		13.8 15.75 18 20		40	260			18.8	86	72	5750	6820	5110	8100	
SF11-90000/110	90000				45	285	0.15	10.5(17)	20.2	92	77.5	5860	6900	5120	8300	
SF11-120000/110	120000				65	365			23.8	115	99.8	6070	7230	5220	8600	
SF11-150000/110	150000				75	420										
SF11-180000/110	180000				85	490										

说明：钱江电气可为用户特殊设计技术参数不同于上表的产品。上表重量及外形尺寸基于标准阻抗。
Notes: Specification different from above listed product is available. Above mentioned weight and dimension are based on standard impedance.

S11系列110kV三相双绕组无励磁调压电力变压器技术参数
110kV (S11 series)3-phase 2-winding Power Transformer with OCTC

型号 Model	额定容量(kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	低压 LV	联结组标号 Vector group	空载损耗(kW) No load loss	负载损耗(kW) Load loss	空载电流(%) No load current	短路阻抗(%) Short-circuit impedance	重量(MT) Weight 油重 Oil weight	总重 Total weight	运输重 Transport weight	外形尺寸(mm) Dimensions H	L	B	HL	T
S11-6300/110	6300	110±2×2.5% 121±2×2.5%	6.3 6.6 10.5 11 20	YNd11	6.5	34	0.3	10.5	7.5	23	18.5	4300	5320	4690	5300	1475
S11-8000/110	8000				7.5	42			8.1	25.8	21.4	4450	5550	4740	5500	
S11-10000/110	10000				9	50			9.3	30.3	24	4560	5730	4840	5800	
S11-12500/110	12500				10.5	59			10	34.3	28.1	4670	5790	4830	6000	
S11-16000/110	16000				13	73			11	38.4	30.5	4810	6120	4860	6300	2040
S11-20000/110	20000				16	88	0.25		12.3	43.6	35.5	4820	6200	5100	6400	
S11-25000/110	25000				18	104			12.6	48.4	37.6	4990	6330	5320	6800	
S11-31500/110	31500				20	123		10.5(12)	14.4	55	43.2	5080	6380	5360	7000	
S11-40000/110	40000				24	148		10.5(14)	16.2	64	49	5280	6500	5410	7300	
S11-50000/110	50000				28	180	0.2	10.5 (14、17)	18	73.2	57	5320	6660	5500	7500	
S11-63000/110	63000				35	220			19.8	85	64.8	5610	6760	5520	8000	
S11-75000/110	75000		13.8 15.75 18 20		40	260			22.5	95	70.2	5760	6860	5550	8200	
S11-90000/110	90000				45	285	0.15	10.5(17)	24.8	105.5	77.5	5860	6900	5570	8300	
S11-120000/110	120000				65	365										
S11-150000/110	150000				75	420										
S11-180000/110	180000				85	490										

说明：钱江电气可为用户特殊设计技术参数不同于上表的产品。上表重量及外形尺寸基于标准阻抗。
Notes: Specification different from above listed product is available. Above mentioned weight and dimension are based on standard impedance.

SFZ11系列110kV三相双绕组有载调压电力变压器技术参数
110kV (SFZ11 series) 3-phase 2-winding Power Transformer with OLTC

型号 Model	额定容量 (kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	低压 LV	联结组标号 Vector group	空载损耗 (kW) No load loss	负载损耗 (kW) Load loss	空载电流 (%) No load current	短路阻抗 (%) Short-circuit impedance	重量(MT) Weight 油重 Oil weight	总重 Total weight	运输重 Transport weight	外形尺寸(mm) Dimensions H	L	B	HL	T
SFZ11-6300/110	6300	110±8×1.25%	6.3 6.6 10.5 11 20	YNd11	7	34	0.3	10.5	6.6	22.5	19.8	4300	5200	3700	5600	1475
SFZ11-8000/110	8000				9	42			7.1	25.2	22.1	4420	5420	3950	5720	
SFZ11-10000/110	10000				10	50			7.6	28	24.6	4560	5930	4280	5800	
SFZ11-12500/110	12500				12	59			8.3	31.8	28.9	4670	5990	4310	6000	
SFZ11-16000/110	16000				14	73			9.7	36.4	31.3	4810	6320	4340	6300	2040
SFZ11-20000/110	20000				18	88	0.25		10.8	40.6	36.4	4820	6400	4380	6400	
SFZ11-25000/110	25000				20	104			11.3	45.8	38.6	4990	6530	4420	6800	
SFZ11-31500/110	31500				23	125		10.5(12)	12.8	51	44.2	5080	6580	4510	7000	
SFZ11-40000/110	40000				25	146		10.5(14)	14.8	60.7	50.2	5280	6700	4810	7300	
SFZ11-50000/110	50000				30	180	0.2	10.5 (14、17)	16.2	69	58.5	5320	6860	5080	7500	
SFZ11-63000/110	63000				38	220			17.5	77.6	66.5	5610	6960	5100	8000	

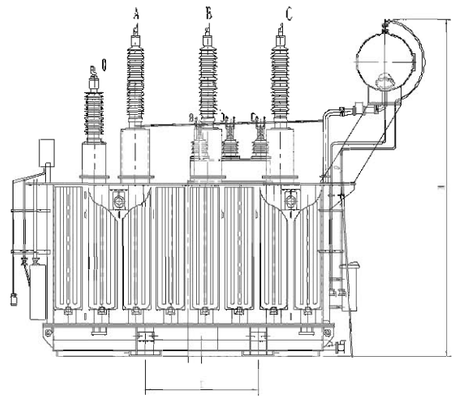
说明：钱江电气可为用户特殊设计技术参数不同于上表的产品。上表重量及外形尺寸基于标准阻抗。
Notes: Specification different from above listed product is available. Above mentioned weight and dimension are based on standard impedance.

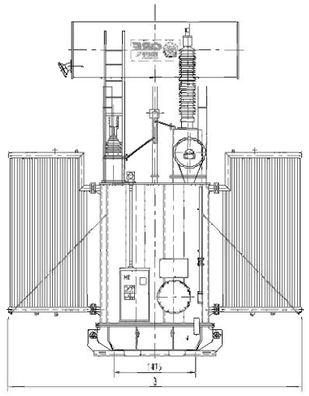
SZ11系列110kV三相双绕组有载调压电力变压器技术参数
110kV (SZ11 series) 3-phase 2-winding Power Transformer with OLTC

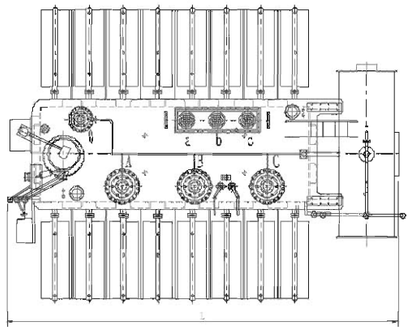
型号 Model	额定容量 (kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	低压 LV	联结组标号 Vector group	空载损耗 (kW) No load loss	负载损耗 (kW) Load loss	空载电流 (%) No load current	短路阻抗 (%) Short-circuit impedance	重量(MT) Weight 油重 Oil weight	总重 Total weight	运输重 Transport weight	外形尺寸(mm) Dimensions H	L	B	HL	T
SZ11-6300/110	6300	110±8×1.25%	6.3 6.6 10.5 11 20	YNd11	7	34	0.3	10.5	7.5	23.4	18.8	4300	5520	4690	5300	1475
SZ11-8000/110	8000				9	42			8.1	26.3	21.8	4450	5750	4740	5500	
SZ11-10000/110	10000				10	50			9.3	30.9	24.5	4560	5930	4830	5800	
SZ11-12500/110	12500				12	59			10.2	35	28.8	4670	5990	4840	6000	
SZ11-16000/110	16000				14	73			11.2	39.2	31.3	4810	6320	4860	6300	2040
SZ11-20000/110	20000				18	88	0.25		12.6	44.5	36.4	4820	6400	5100	6400	
SZ11-25000/110	25000				20	104			12.9	49.4	38.6	4990	6530	5320	6800	
SZ11-31500/110	31500				23	125		10.5(12)	14.7	56	44.2	5080	6580	5360	7000	
SZ11-40000/110	40000				25	146		10.5(14)	16.7	65	50.2	5280	6700	5410	7300	
SZ11-50000/110	50000				30	180	0.2	10.5 (14、17)	18.5	74.6	58.5	5320	6860	5500	7500	
SZ11-63000/110	63000				38	220			20.3	86.6	66.5	5610	6960	5520	8000	

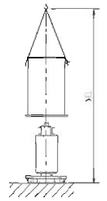
说明：钱江电气可为用户特殊设计技术参数不同于上表的产品。上表重量及外形尺寸基于标准阻抗。
Notes: Specification different from above listed product is available. Above mentioned weight and dimension are based on standard impedance.

110kV系列三相双绕组变压器外形结构参考图
Outer Diagram of 110kV series 3-phese 2-winding Transformer









SFSZ11系列110kV三相三绕组有载调压电力变压器技术参数
110kV (SFSZ11 series) 3-phase 3-winding Power Transformer with OLTC

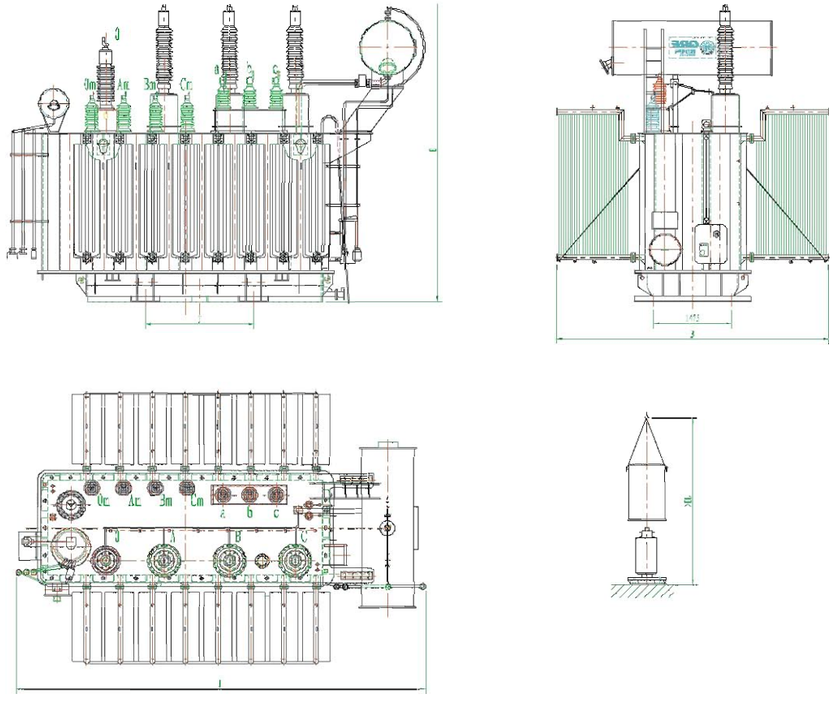
型号 Model	额定容量 (kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	中压 MV	低压 LV	联结组标号 Vector group	空载损耗 (kW) No load loss	负载损耗 (kW) Load loss	空载电流 (%) No load current	短路阻抗 (%) Short-circuit impedance	重量(MT) Weight 油重 Oil weight	总重 Total weight	运输重 Transport weight	外形尺寸(mm) Dimensions H	L	B	HL	T
SFSZ11-6300/110	6300	110±8×1.25%	35 37 38.5	6.3 6.6 10.5 11 20	YNyn0d11	9	44	0.35	高—中 HV-MV 10.5 高—低 HV-LV 17.5~18.5 中—低 MV-LV 6.5	8.9	30.3	25.8	4370	6550	4180	5800	2040
SFSZ11-8000/110	8000					10	53			9.6	32.2	27.9	4430	6580	4250	5900	
SFSZ11-10000/110	10000					12	62			10.1	34	29.6	4530	6780	4310	6000	
SFSZ11-12500/110	12500					13	74			11.5	39.4	34.2	4670	6890	4440	6400	
SFSZ11-16000/110	16000					16	90			12.7	44.7	39.8	4750	6990	4720	6800	
SFSZ11-20000/110	20000					21	105			12.9	47.3	41.6	4810	7450	4760	7000	
SFSZ11-25000/110	25000					23	123	0.3		13.5	53.6	46.5	4960	7170	4760	7200	
SFSZ11-31500/110	31500					27	148			14.7	61.3	53.2	5040	7330	4890	7400	
SFSZ11-40000/110	40000					32	176			17.8	74.8	64.8	5380	7430	5130	7800	
SFSZ11-50000/110	50000					36	220	0.25		21.2	88.6	77	5440	7750	5350	8000	
SFSZ11-63000/110	63000					43	250			22.3	98.8	86	5720	7810	5620	8100	

说明：钱江电气可为用户特殊设计技术参数不同于上表的产品。上表重量及外形尺寸基于标准阻抗。
Notes: Specification different from above listed product is available. Above mentioned weight and dimension are based on standard impedance.

SSZ11系列110kV三相三绕组有载调压电力变压器技术参数
110kV (SSZ11 series) 3-phase 3-winding Power Transformer with OLTC

型号 Model	额定容量 (kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	中压 MV	低压 LV	联结组标号 Vector group	空载损耗 (kW) No load loss	负载损耗 (kW) Load loss	空载电流 (%) No load current	短路阻抗 (%) Short-circuit impedance	重量(MT) Weight 油重 Oil weight	总重 Total weight	运输重 Transport weight	外形尺寸(mm) Dimensions H	L	B	HL	T
SSZ11-6300/110	6300	110±8×1.25%	35 37 38.5	6.3 6.6 10.5 11 20	YNyn0d11	9	44	0.35	高—中 HV-MV 10.5 高—低 HV-LV 17.5~18.5 中—低 MV-LV 6.5	8.9	30.7	23.1	4370	6750	4710	5800	2040
SSZ11-8000/110	8000					10	53			10.3	34.5	26.6	4420	6780	4760	5900	
SSZ11-10000/110	10000					12	62			11.4	37.4	29.6	4530	6780	4850	6000	
SSZ11-12500/110	12500					13	74			12.8	44	34.2	4670	6890	4880	6400	
SSZ11-16000/110	16000					16	90			13.9	50.6	39.8	4750	6990	4970	6800	
SSZ11-20000/110	20000					21	105	0.3		14.5	53.3	41.6	4800	7150	5130	7000	
SSZ11-25000/110	25000					23	123			15.9	59.8	46.5	4960	7170	5300	7200	
SSZ11-31500/110	31500					27	148			17.7	69	53.2	5040	7320	5390	7400	
SSZ11-40000/110	40000					32	176			21.1	83	64.8	5380	7430	5580	7800	
SSZ11-50000/110	50000					36	220	0.25		24.2	97.6	77	5440	7750	5620	8000	
SSZ11-63000/110	63000					43	250			25.5	108.6	86	5720	7810	5740	8100	

说明：钱江电气可为用户特殊设计技术参数不同于上表的产品。上表重量及外形尺寸基于标准阻抗。
Notes: Specification different from above listed product is available. Above mentioned weight and dimension are based on standard impedance.



110kV系列三相三绕组变压器外形结构参考图
Outer Diagram of 110kV series 3-phese 3-winding Transformer

S11系列35kV无励磁调压电力变压器技术
35kV (S11 series) Power Transformer with OCTC

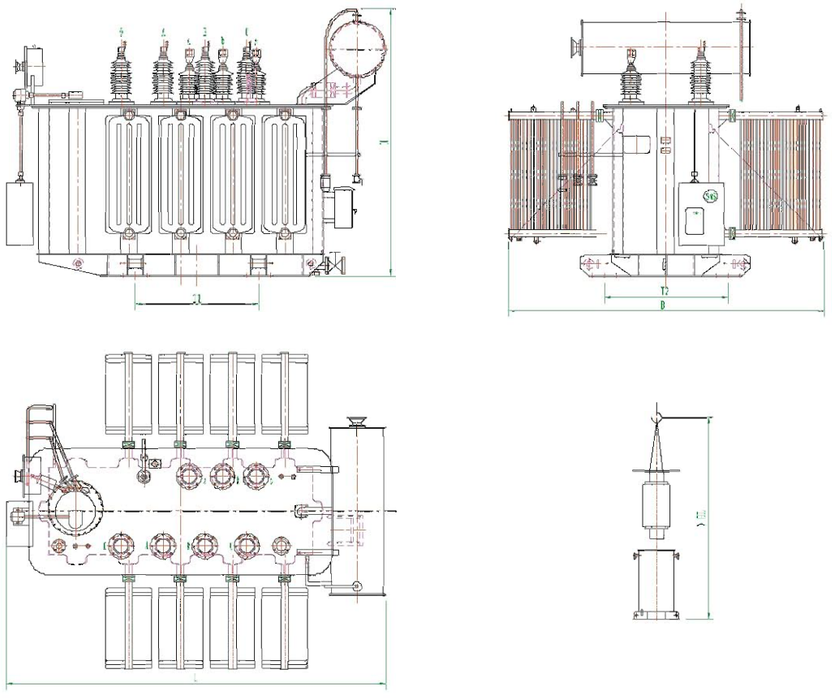
型号 Model	额定容量 (kVA) Rated capacity	额定电压（kV） Rated voltage 高压 HV	高压分接范围 tapping range of H.V	低压 LV	联结组标号 Vector group	空载损耗 (kW) No-load loss	负载损耗 (kW) Load loss	空载电流 (%) No-load current	阻抗电压 (%) Short-circuit impedance	重量(MT) Weight 油重 Oil weight	总重 Total weight	外形尺寸(mm) Dimensions H	L	W	HL	T1×T2
S11-630/35	630	35 38.5	±5%	0.4	Yyn0	0.83	7.82	1.2	6.5	880	3540	1915	2350	1360	4100	820×820
S11-800/35	800					0.97	9.35	1.0		1000	4000	2150	2420	1380	4150	820×820
S11-1000/35	1000					1.15	11.48	0.9		1120	4540	2210	2500	1480	4200	820×850
S11-1250/35	1250					1.37	13.86	0.8		1190	4900	2465	2600	1550	4500	
S11-1600/35	1600					1.66	16.58	0.7		1420	6000	2600	2700	1620	4700	
S11-2000/35	2000					2.03	17.9	0.7		1500	6660	2780	2790	1850	5000	
S11-2500/35	2500					2.45	19.5	0.6		1670	7570	2830	2860	2000	5100	1070 × 1070
S11-3150/35	3150				Yd11	3.01	23.0	0.6		2100	10300	2890	3130	2340	5300	
S11-4000/35	4000					3.61	24.6	0.6	7.0	2100	10500	2950	3210	2780	5400	
S11-5000/35	5000			3.15 6.3 6.6 10.5 11		4.27	31.2	0.5		2350	11900	3000	3230	3050	5600	
S11-6300/35	6300		±2×2.5%			5.11	34.9	0.5		2390	12625	3190	3250	3200	5900	
S11-8000/35	8000					7.00	38.3	0.5	7.5	2980	15650	3250	3600	3280	6100	
S11-10000/35	10000					8.26	45.1	0.4		4030	19530	3270	3610	3460	6200	
S11-12500/35	12500				YNd11	9.80	53.6	0.4		4280	21000	3290	3640	3580	6300	
S11-16000/35	16000					11.9	65.5	0.4		5520	26300	3350	4100	3960	6500	1475 × 1475
S11-20000/35	20000					14.07	79.1	0.4	8.0	5920	31520	3460	4150	3980	6700	
S11-25000/35	25000					16.73	93.5	0.3		6300	33510	4000	4370	3640	6900	
S11-31500/35	31500					19.95	105.6	0.3		6700	40125	3890	4510	4420	7300	

说明：钱江电气可为用户特殊设计技术参数不同于上表的产品。
Notes: Specification different from above listed product is available.

SZ11系列35kV有载调压电力变压器技术数据
35kV (SZ11 series) Power Transformer with OLTC

型号 Model	额定容量 (kVA) Rated capacity	额定电压（kV） Rated voltage			联结组标号 Vector group	空载损耗 (kW) No-load loss	负载损耗 (kW) Load loss	空载电流 (%) No-load current	阻抗电压 (%) Short-circuit impedance	重量(MT) Weight		外形尺寸(mm) Dimensions				
		高压 HV	高压分接范围 Tapping range of H.V	低压 LV						油重 Oil weight	总重 Total weight	H	L	W	HL	T1×T2
SZ11-2000/35	2000	35	±3×2.5% ±4×2.5%	6.3 10.5	Yd11	2.25	17.7	0.7	6.5	1920	6770	2675	3030	1500	4500	1070 × 1070
SZ11-2500/35	2500					2.68	20.5	0.7		2150	8140	2710	3160	2000	4700	
SZ11-3150/35	3150	35 38.5				3.19	22.1	0.7	7.0	2445	9020	2770	3340	2760	4900	
SZ11-4000/35	4000					3.85	29.0	0.7		2560	10600	2850	3680	2900	5100	
SZ11-5000/35	5000					4.46	32.7	0.7		2980	12280	2900	3800	3200	5300	
SZ11-6300/35	6300					5.46	36.6	0.6	7.5	3670	13580	2970	3910	3400	5500	
SZ11-8000/35	8000			6 6.3 10.5 11	YNd11	7.70	40.4	0.5		4250	17850	3120	4170	3250	5800	1475 × 1475
SZ11-10000/35	10000					9.10	47.8	0.4		4860	20940	3250	4250	3460	6100	
SZ11-12500/35	12500					10.71	56.5	0.4	8.0	5020	22300	3400	4550	3690	6400	
SZ11-16000/35	16000					13.09	69.1	0.4		6310	27240	3640	4600	3890	6800	
SZ11-20000/35	20000					15.48	83.1	0.4		7070	32530	3770	4700	4090	7100	
SZ11-25000/35	25000					18.40	98.2	0.3		8270	39240	3930	5130	4200	7300	
SZ11-31500/35	31500					21.95	112.2	0.3		9500	43320	4210	5530	4450	7500	
SZ11-40000/35	40000					26	146	0.3	10.5	11600	51700	4520	5600	4670	8800	2040 × 1475
SFZ11-54000/35	54000					32	180	0.3		14300	66000	4625	6065	5110	9500	

说明：钱江电气可为用户特殊设计技术参数不同于上表的产品。
Notes: Specification different from above listed product is available.



35kV系列三相双绕组变压器外形结构参考图
Outer Diagram of 35kV series 3-phese 2-winding Transformer

典型产品

35~500kV系列变压器广泛用于国家主干电网、城网、农网、发电厂、工矿企业、石化行业等。

110kV电力变压器

SZ11-50MVA/110kV

SZ-45MVA/132kV

220kV电力变压器

SFP10-200MVA/220kV

Typical Product

35 ~ 500kV series transformers are widely used in the national main grid, city grid, rural grid, power plant, industrial and mining enterprise, and petrochemical industry.

110kV Power Transformer

SSZ10-50MVA/110kV

SFZ-90MVA/138kV

220KV Power Transformer

SFSZ-125MVA/220kV

SFPSZ11-180MVA/220kV

SFZ-125MVA/220kV

已投运的220kV电力变压器　220KV Power Transformer in Operation

SFSZ9-90MVA/220kV

SFZ-125MVA/220kV

SFP10-200MVA/220kV

SFPSZ11-180MVA/220kV

附：三相油浸式电力变压器性能水平代号
Annex:Performance level code for 3-phase oil immersed power transformer.

性能水平代号 Performance Level Code	标称系统电压(kV) Nominal System Voltage	空载电流(%) No-load Loss	负载损耗 Load Loss
9	35, 110, 220	符合GB/T6451-2008 Conform to GB/T6451-2008 (China standard)	符合GB/T6451-2008 Conform to GB/T6451-2008 (China standard)
10		比GB/T6451-2008下降10% 10% lower than that required GB/T6451-2008 (China standard)	比GB/T6451-2008下降5% 5% lower than that required in standard GB/T6451-2008
11		比GB/T6451-2008下降20% 20% lower than that required GB/T6451-2008 (China standard)	比GB/T6451-2008下降5% 5% lower than that required in standard GB/T6451-2008

服务承诺

1.及时向顾客提供按合同规定的全部技术资料和图纸。有义务在必要时邀请顾客参与供方的技术设计审查。

2.按顾客要求的时间到现场进行技术服务，指导顾客按供方的技术资料和图纸要求进行安装、调试与整套试运及试生产。

3.对于顾客选购的与合同设备有关的配套设备，我方主动提供满足设备接口要求的技术条件和资料。

4.严格执行供需双方就有关问题召开会议的纪要或签订的协议。

5.按合同规定为顾客举办有关设备安装、调试、使用、维护技术的业务培训班。

6.加强售前、售中、售后服务，把“24小时服务”、“超前服务”、“全过程服务”、“终身服务”贯彻在产品制造、安装、调试、修理的全过程。

7.随时满足顾客对备品备件的要求。

Service Guarantee

1.To provide all technical information and drawings as per contract promptly. QRE is oblidged to invite client, if neccessory, to attend technical design review.

2.To carry out spot technical service as per client’s schedule, offer guideness for installation and commissioning according to technical information and drawings.

3.For relevant auxiliary equipment procured by customers, QRE will provide related technical information to meet requirement of equipment interface.

4.To execute stipulations in MOU or agreement signed by seller and buyer strictly.

5.To train staff from client for equipment installation, commissioning, application, maintenance as stipulated in the contract.

6.To reinforce pre-sales, mid-sales, after-sales service, to carry out “24-hour service”, “service in advance”, “overall process service”, “lifelong service” in our manufacturing, installation, commissioning and maintance.

7.To meet spare parts’ requirement by customers at any time.

尊敬的用户朋友,如果您有服务需求,可以发送Email给我们,或者直接电话与我们联系:
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