110KV(60KV)
OIL-IMMERSED TYPE TRANSFORMER

CEEG®

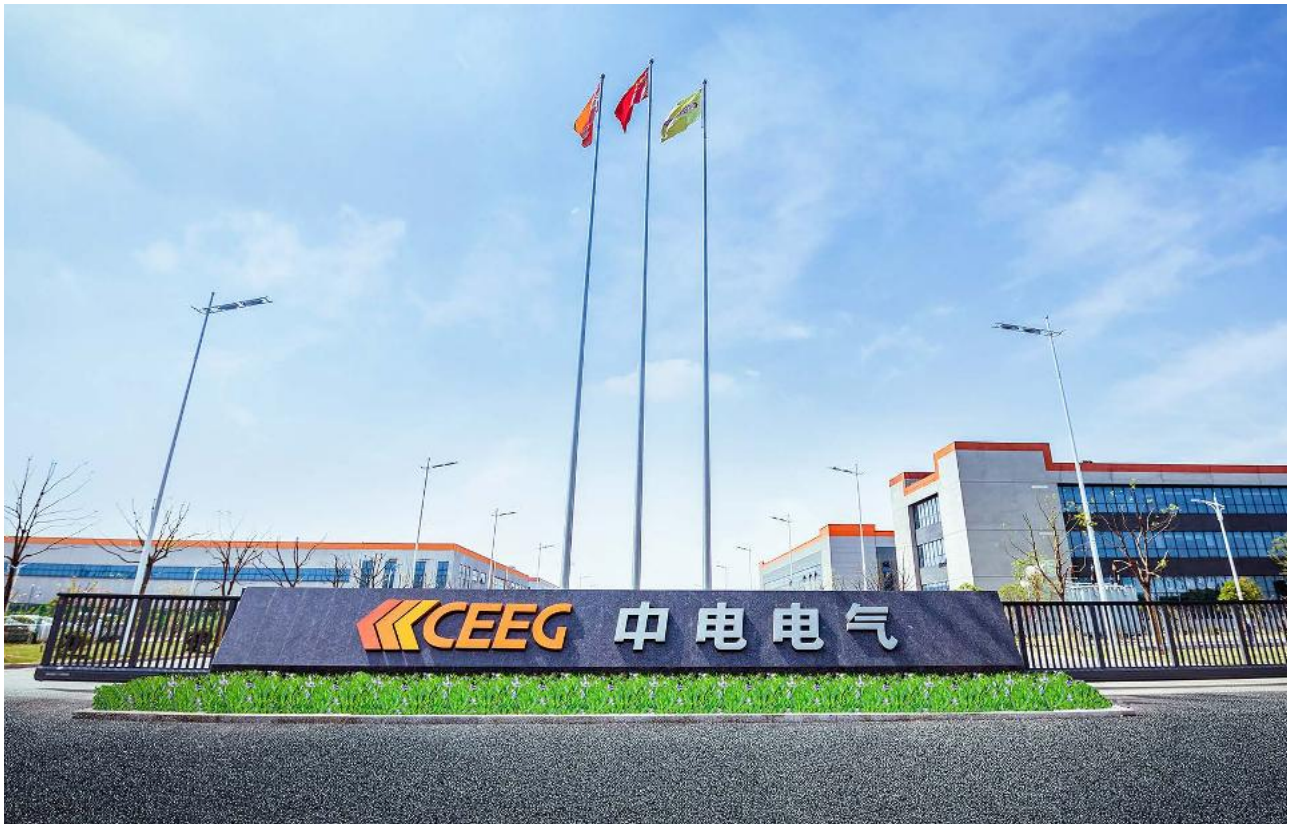
CEEG Transformer Co., Ltd

About CEEG

CEEG, founded in 1990, is a Chinese advanced electrical manufacturer. The company, guided by "vision, innovation, and responsibility," now owns three key industries, including power transmission and distribution equipment manufacturing, the new energy industry, and intelligent distribution systems.

As a modern enterprise, CEEG integrates research, design, manufacturing, and selling all together and is dedicated to providing the highest-quality product, the most excellent service, and the most various solutions to customers. During development, the company has established long-term strategic partnerships with global leading enterprises, such as DuPont, ABB, Siemens, etc.

On the belief of "safety, energy saving, and environmental protection," our products find extensive applications in coal mining, steelmaking, petrochemicals, metallurgy, and other industries and have gained multiple compliments from customers. Nowadays, the products have been exported to over 80 countries and regions, covering Asia, Africa, Europe, and South America.



Why CEEG

Strategy

For over 30 years, CEEG has remained steadfast in its commitment to delivering top-quality power to the world. Building upon a foundation of exceptional products and enduring partnerships, the company is now advancing its strategy through a supportive mode of "global manufacturing + comprehensive solutions and services."

Purpose

CEEG is passionate about keeping pace with the world throughout its development. Driven by technological advancements, enhanced competitiveness, energy transition, and environmental protection, CEEG aims for brand internationalization and service globalization.

Advanced Technology

CEEG' s enduring success over the past 30 years in energy industries can be attributed to its commitment to continuously enhance innovation and technological capabilities. Until today, we are still absorbing new concepts and technologies all over the world.

Safety

CEEG ensures the highest quality and safety throughout the entire lifecycle of each product, from design and manufacturing to operation. Our services integrate intelligent technologies and comprehensive solutions, resulting in a secure and stable operation system.

Sustainability

In response to the global trend toward decarbonization, CEEG is dedicated to advancing the energy transition and sustainability. Our efforts include developing energy-efficient products and the technology of new energy.


Top-Quality
7-Step Temperature Control Technology
Comprehensive Solutions
Cost Effective
Low Loss
Low Noise
Maximum Safety
Advanced Technology
No Leakage
Creative
Hybrid Insulation System
High Reliability
Eco-Friendly
Sustainability
Maximum Safety
Anti-Short Circuit
Performance Comparison
Mature Structure Technology

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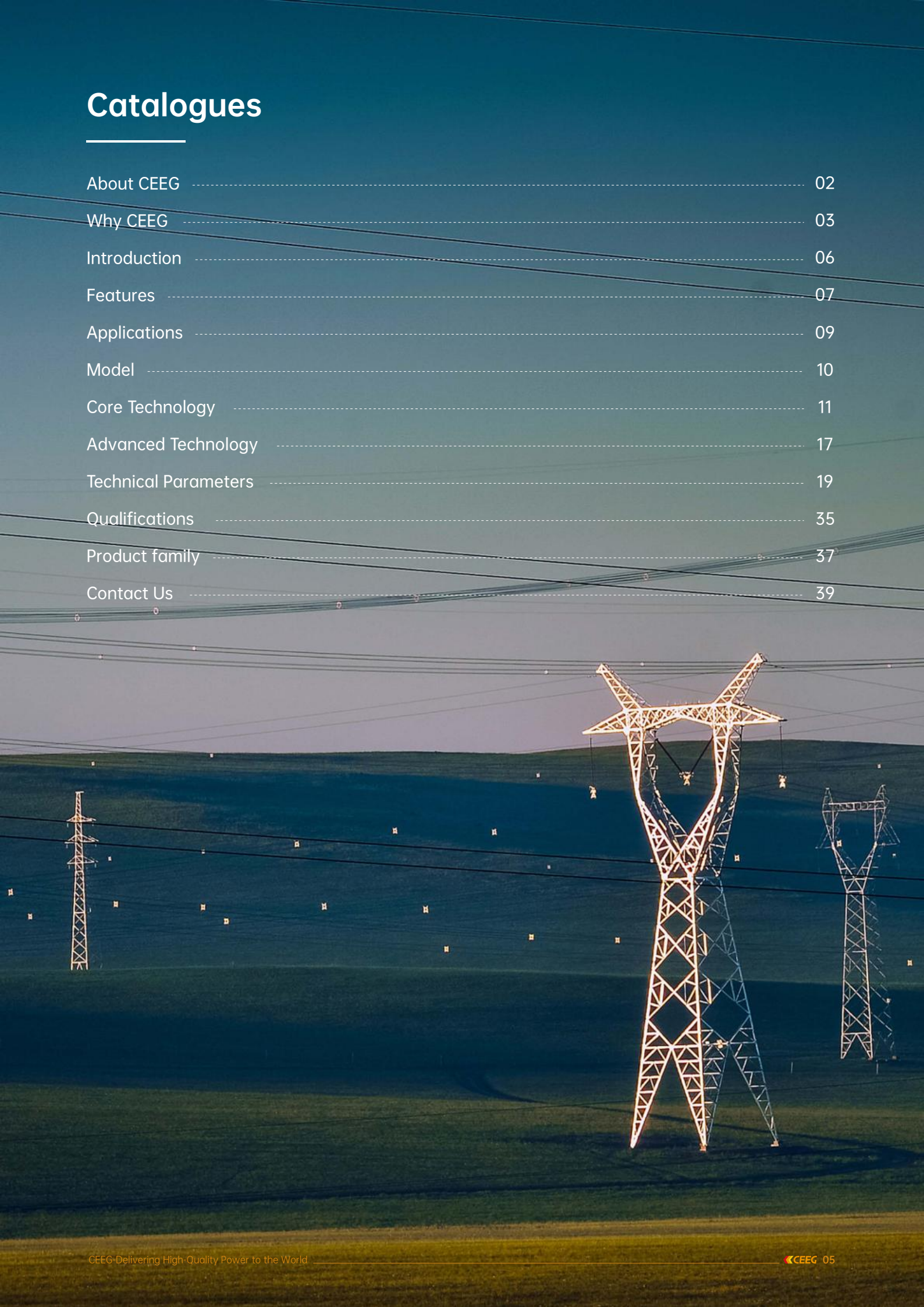


Introduction

The 110kV (60kV) oil-immersed power transformer is a new type of transformer that was developed and designed by CEEG and adopts a hybrid insulation structure. The hot spot temperature part of the transformer uses DuPont Nomex® insulation material (heat resistance standards: Class 3) and mineral oil, which ensures the transformer has safety, reliability, and high overload capacity. Besides, it also meets the requirements of long-life service and high-power density. The capacity for no-load loss, load loss, and self-cooling noise is better than the national standard.This type of transformer is the best choice for customers with special requirements or upgrade requirements (capacity increases can be upgraded on the old transformer).

Features

Low Loss

The no-load loss is **10% lower** than the national standards GB6451-2015, the load loss is **5% lower** than the national standards GB6451-2015

Low Noise

The self-cooling noise **level is lower** than 60dB. If the customer has some special demand for transformers, the product can be upgraded and designed as an **ultra-low noise** transformer

Low Partial Discharge

Compared to other product lines, the 110 kV transformer product line adopts **dust-free operation and modern enterprise management**. The metal parts and insulating parts are all welded by round machining, and the **partial discharge capacity is less than 100 pc**

No Leakage

All the sealing components adopt **acrylate materials** and are manufactured using the **one-shot molding method**.The product has passed the fluorescence test and pressure test to make sure that the sealing components are fully sealed

Anti-Short Circuit

The advanced technology ensures that **no one product will be broken due to a sudden short circuit**

Perfect Appearance

The appearance has been **polished and removed the rust**

Applications

This type of transformer is applicable during peak demand hours, and can be widely used in the main power grid with high load rate at high temperature, and places with impact load and continuous overloading requirements. Such as iron and steel industry, metallurgical industry, rail transportation, power plant, hydropower plant, etc.

Model

110kV(60kV) Oil-Immersed Type Transformer

S F S Z 11 - □ / □

- Voltage level of HV winding, kV
- Rated Capacity, kVA
- Loss level code (11,13,18,20,22)
- On-load tap change
- Three winding
- Air cooled
- Three phase

Core Technology

Technology Highlights

- High temperature resistant hybrid insulation system
- Compact design
- 7-step temperature control technology
- Over 30-year lifespan
- The iron core adopts a fully inclined 45 degree 7-step joint structure

Hybrid Insulation System

• Maximum safety

CEEG has collaborated with DuPont for over 25 years, and the high-temperature-resistant insulating paper from **Dupont Nomex® technology** demonstrates its stability and safety. The 110kV (60kV) oil-immersed transformer adopts a hybrid insulation system; in addition to **high-temperature-resistant insulating paper**, there are insulating materials that are always used in some parts that have low temperatures.These technologies and designs ensure the highest safety while operating.

• High temperature resistance

It is very safe while operating a high-temperature-resistant transformer at more than 40 ° C ambient temperature, and it can also be safely operated at over 20% rated capacity. Compare to the traditional transformer, this type of transformer has **a lower load factor (K24)** when operating continuously for 24 hours under varying ambient temperature.

Ambient Temperature (℃)	-10	0	10	20	30	40
S13(K24)	1.25	1.17	1.09	1.00	0.91	0.81
SRN(K24)	1.37	1.3	1.25	1.18	1.10	1.00

• Energy saving

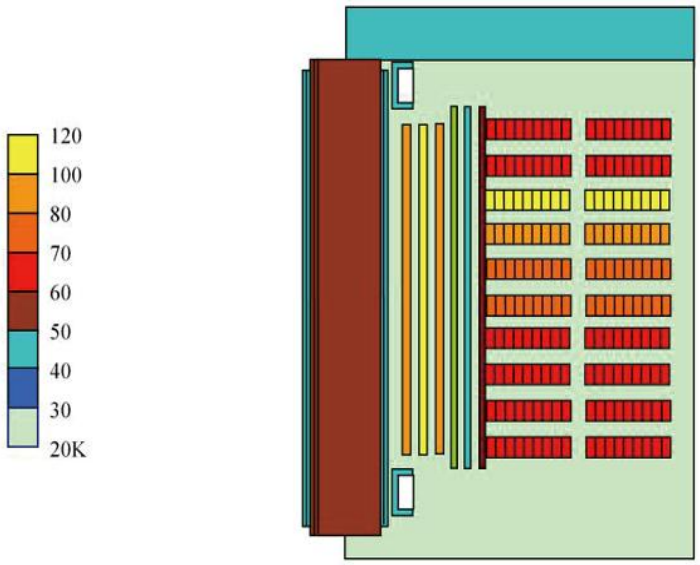
The combination of Dupont Nomex® technology and insulating oil can **save approximately 20% more energy** compared to traditional transformers.

• Eco-friendly

This type of transformer has a **lifespan exceeding 30 years**, and the service life of the sealing components is the same as that of the transformer. Additionally, all materials are

7-Step Temperature Control Technology

The structure of this type of transformer adopts the technology of traditional transformers, which retains many advantages, such as **reliability and cost-effectiveness**. The most obvious difference between these two types is that the design of the 110kV (60kV) oil-immersed transformer takes the temperature field into account. CEEG creates "**7-Step Temperature Control**" technology to ensure operation stability. This technology divides the design into five levels, from the hottest winding hot spot to the external parts, and the short circuit and overload conditions are also deemed key factors. It finally integrates a 7-step temperature control system. **The highest temperature** of this **transformer oil** is **95 °C**, which ensures that the transformer has **maximum safety, thermal insulation, and a long lifespan.**



The schematic diagram of 7-step temperature control system

1.Insulation Temperature Control Technology

Different insulation materials should be selected based on the temperature of various parts of the winding and the structure. This allows for precise control **the hot spot temperature of the winding**.

2.Liquid Flow Circuit Temperature Control Technology

This technology integrates the **temperature field and velocity field**, allowing precise **monitoring and control** of the temperature in **each component**. It controls the oil temperature of the upper layer and the boundary layer near the winding hot spot.

3.Overload Temperature Control Technology

This is the **temperature control** of **various parts** of the transformer during overload conditions.

4.Iron Core Temperature Control Technology

This controls the temperature of the **insulation components** that connect with the iron core.

5.Sealing Temperature Control Technology

It monitors the condition of **fully sealed oil tanks** under the influence of temperature variations, such as **thermal expansion, deformation, and strength.**

6.Component Temperature Control Technology

Components are made of **insulation materials** according to the temperature of their location, such as sealing gaskets.

7.Short-Circuit Temperature Control Technology

It adopts the **DuPont Nomex® insulation technology** to ensure high **insulation heat resistance** and **strong overload capacity**. Even under multiple short-circuit conditions, it does not cause mechanical damage or electrical faults due to temperature rise, nor does it compromise the lifespan of the insulation material.

Method of Anti-Short Circuit

CEEG employs design calculations and manufacturing processes to enhance its transformers' ability to withstand short circuit mechanical forces.

1.Design calculation

• Calculating the ampere-turn balance for transformer coil, which can control the maximum unbalanced ampere-turn and reduce the short circuit mechanical force.

• When the deformation of copper wire is less than 0.2% after the transformer short circuit, as a type of ductile material, the copper coil winding can be restored to its original shape. Considering the maximum short circuit mechanical force that transformers can withstand, it can choose the soft copper wire (Σ 0.2 = 90MPa) or the semi-rigid copper wire (Σ 0.2 = 120 ~ 260MPa), so the average critical stress of copper wire Σ 0.2 remains within the safety range.

• To meet safety requirements for the maximum short circuit mechanical force, the strength and stiffness of the clamp, pull plate, press plate, and pressing device will be calculated.

• The winding spacers will be densified and made of thick cardboard with higher elastic modulus as far as possible.

2.Manufacturing process

• The coil should be wound tightly, and the transformer should be compressed tightly.

• The designed ampere-turn balance should be calculated with the ampere-turn balance after manufacturing, and the maximum unbalance ampere-turns should be strictly controlled.

• Prestress shall be added during the manufacturing process to prevent looseness during the operation and to increase the short-circuit mechanical force.

• After drying treatment, it is important to strictly control the height tolerance of in-phase winding to ensure equal pressure on each winding.

Method of Low Partial Discharge

CEEG use the concept of "field strength" instead of "voltage" to determine the insulation parameters and insulation structure, and it selects more appropriate insulation materials and adopts advanced production technology to ensure the low partial discharge.

1.Design calculation

• Accurately calculate the field strength distribution and adjust it reasonably to make it evenly distributed, reduce electric field distortion, and ensure that the maximum field strength of the most concentrated component is lower than the initial discharge field strength.

• Design high-voltage outlet components reasonably, arrange low-parallel discharge lead-in elements appropriately, and adjust grounding distance parameters.

2.Manufacturing process

• A clean production environment: the main components such as core, coil, transformer and assembly are completed in the fully sealed workshop.

• The body and lead are made in a fully sealed workshop.

• The outer surfaces of all iron clamps have rounded corners.

• The inner cavity of the transformer oil tank features rounded corners.

• To prevent the metal particles generated by the friction between the wheel and the track from getting into the coil, a box is installed at a proper position under the wheel of the crane to absorb the metal particles, and the coil is wrapped in a clean cloth.

Equipment and patents

• Equipment

Patents

1. Hoisting structure of 110kV transformer: ZL2008 2 0238182.6;

2. lead-out line structure of 110kV transformer of plug-in terminal: Z L2008 2 0159647.9;

3. On load voltage regulation structure of 110 kV transformer: ZL2010 2 9044115.5;

4. Current transformer structure for transformer winding temperature measurement: ZL2010 2 9044111.7;

5. Magnetic shielding structure of large capacity transformer: ZL2010 2 0635851.0.

Advanced Technology

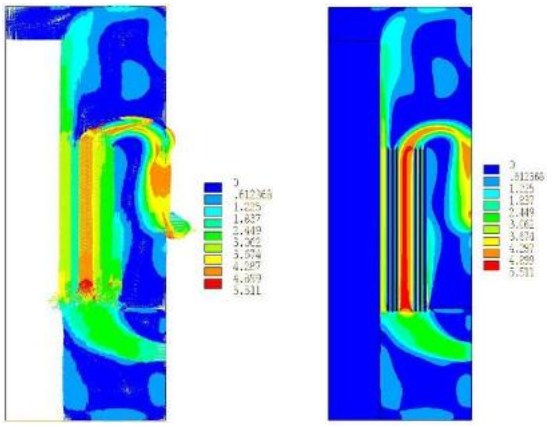
R & D Team

The CEEG research and development team focuses on advanced technologies for products and solutions. Over the past 35 years, CEEG has established a strong technology team that includes thousands of employees and many excellent experts. In addition, CEEG has partnered with many national research centers and top universities to develop more creative technologies.

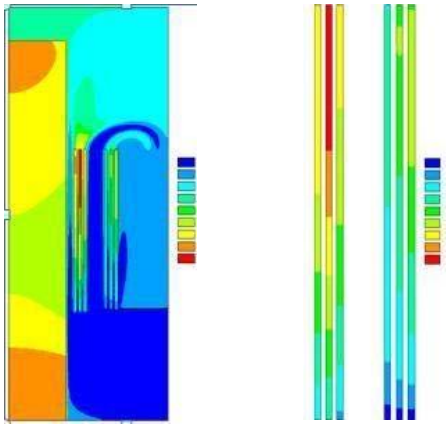
Strategic Partners

R & D Cloud Platform

The CEEG research cloud platform integrates many functions, such as electromagnetic design and optimization, parametric drawing, performance analysis, structural optimization, and automatic drawing of transformer production fields. This platform supports transformer resource sharing, data search, modification, and version control.



Flow field distribution



Temperature field distribution

Intelligent Operation Platform

By collecting key data such as transformer temperature, current, voltage, vibration, and power grid harmonics, this platform supports online power quality analysis and fault alarm. Customers can also download this APP to their phones for convenience.

Technical Parameters

S18-6300 -180000/110kV oil-immersed three-phase double winding non-excitation voltage regulating power transformer (Class III energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110 115 121	±2×2.5%	6.3 6.6 10.5	YNd11	5.90	33	0.62	10.5
8000					7.10	40	0.62	
10000					8.40	48	0.58	
12500					9.90	56	0.58	
16000					12.00	69	0.54	
20000					14.10	84	0.54	
25000					16.60	99	0.50	
31500					19.70	117	0.48	
40000					23.50	141	0.45	
50000					28.20	166	0.42	
63000					33.30	198	0.38	
75000			13.8 15.75 18 21		37.80	224	0.33	12~14
90000					43.50	258	0.30	
120000					54.20	320	0.27	
150000					64.10	379	0.24	
180000					72.00	434	0.20	

S20-6300-180000 / 110kV oil immersed three-phase double winding non-excitation voltage regulating power transformer (Class II energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110 115 121	±2×2.5%	6.3 6.6 10.5	YNd11	5.90	33	0.62	10.5
8000					7.10	40	0.62	
10000					8.40	48	0.58	
12500					9.90	56	0.58	
16000					12.00	69	0.54	
20000					14.10	84	0.54	
25000					16.60	99	0.50	
31500					19.70	117	0.48	
40000					23.50	141	0.45	
50000					28.20	166	0.42	
63000					33.30	198	0.38	
75000			13.8 15.75 18 21		37.80	224	0.33	12~14
90000					43.50	258	0.30	
120000					54.20	320	0.27	
150000					64.10	379	0.24	
180000					72.00	434	0.20	

S22-6300 -180000/110kV oil-immersed three-phase double winding non-excitation voltage regulating power transformer (class I energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110 115 121	±2×2.5%	6.3 6.6 10.5	YNd11	4.10	32	0.62	10.5
8000					4.90	38	0.62	
10000					5.80	45	0.58	
12500					6.80	53	0.58	
16000					8.30	65.7	0.54	
20000					9.70	79	0.54	
25000					11.40	94	0.50	
31500					13.50	111	0.48	
40000					16.20	133	0.45	
50000					19.40	158	0.42	
63000					22.90	187	0.38	
75000			13.8 15.75 18 21		26.00	212	0.33	12~14
90000					29.90	245	0.30	
120000					37.30	303	0.27	
150000					44.10	359	0.24	
180000					49.50	411	0.20	

S18-6300-63000/110kV/35kV oil-immersed three-phase double winding non-excitation voltage regulating power transformer (Class III energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110 115 121	±2×2.5%	35 36 37 38.5	YNd11	6.40	35	0.62	10.5
8000					7.70	42	0.62	
10000					9.00	49	0.58	
12500					10.50	59	0.58	
16000					12.50	72	0.54	
20000					14.80	89	0.54	
25000					17.50	105	0.50	
31500					20.70	126	0.48	
40000					24.60	147	0.45	
50000					29.50	183	0.42	
63000					34.90	220	0.38	

S20-6300-63000/110kV/35kV oil-immersed three-phase double winding non-excitation voltage regulating power transformer (Class II energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110 115 121	±2×2.5%	35 36 37 38.5	YNd11	5.20	33	0.62	10.5
8000					6.20	40	0.62	
10000					7.30	47	0.58	
12500					8.50	56	0.58	
16000					10.10	68	0.54	
20000					12.00	85	0.54	
25000					14.20	99	0.50	
31500					16.80	120	0.48	
40000					20.00	140	0.45	
50000					24.00	174	0.42	
63000					28.30	209	0.38	

S22-6300-63000/110kV/35kV oil-immersed three-phase double winding non-excitation voltage regulating power transformer (Class I energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110 115 121	±2×2.5%	35 36 37 38.5	YNd11	4.40	33	0.62	10.5
8000					5.30	40	0.62	
10000					6.20	47	0.58	
12500					7.20	56	0.58	
16000					8.60	68	0.54	
20000					10.20	85	0.54	
25000					12.10	99	0.50	
31500					14.30	120	0.48	
40000					16.90	140	0.45	
50000					20.30	174	0.42	
63000					24.00	209	0.38	

SS18-6300-63000/110kV oil-immersed three-phase three winding non-excitation voltage regulating power transformer (Class III energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range				Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %	
	HV kV	Tapping Range	MV kV	LV kV					Step-up	Step-down
6300	110 115 121	±2×2.5%	36 37 38.5	6.3 6.6 10.5 21	YNd11	7.10	42	0.66	HV-MV 17.5~18.5 HV-LV 10.5 MV-LV 6.5	HV-MV 10.5 HV-LV 17.5~18.5 MV-LV 6.5
8000						8.50	50	0.62		
10000						10.10	59	0.59		
12500						11.80	70	0.56		
16000						14.30	86	0.53		
20000						16.90	101	0.54		
25000						19.70	120	0.48		
31500						23.50	142	0.48	HV-MV 17.5~18.5 HV-LV 10.5 MV-LV 6.5	HV-MV 10.5 HV-LV 17.5~18.5 MV-LV 6.5
40000						27.80	170	0.44		
50000						33.30	202	0.42		
63000						39.40	243	0.40		

SS20-6300-63000/110kV oil-immersed three-phase three winding non-excitation voltage regulating power transformer (Class II energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range				Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %	
	HV kV	Tapping Range	MV kV	LV kV					Step-up	Step-down
6300	110 115 121	±2×2.5%	36 37 38.5	6.3 6.6 10.5 21	YNd11	5.80	40	0.66	HV-MV 17.5~18.5 HV-LV 10.5 MV-LV 6.5	HV-MV 10.5 HV-LV 17.5~18.5 MV-LV 6.5
8000						6.90	48	0.62		
10000						8.20	56	0.59		
12500						9.60	67	0.56		
16000						11.60	81	0.53		
20000						13.70	95	0.54		
25000						16.00	113	0.48		
31500						19.10	134	0.48	HV-MV 17.5~18.5 HV-LV 10.5 MV-LV 6.5	HV-MV 10.5 HV-LV 17.5~18.5 MV-LV 6.5
40000						22.60	161	0.44		
50000						27.00	192	0.42		
63000						32.00	230	0.40		

SS22-6300-63000/110kV oil-immersed three-phase three winding non-excitation voltage regulating power transformer (Class I energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range				Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %	
	HV kV	Tapping Range	MV kV	LV kV					Step-up	Step-down
6300	110 115 121	±2×2.5%	36 37 38.5	6.3 6.6 10.5 21	YNd11	4.90	40	0.66	HV-MV 17.5~18.5 HV-LV 10.5 MV-LV 6.5	HV-MV 10.5 HV-LV 17.5~18.5 MV-LV 6.5
8000						5.80	48	0.62		
10000						6.90	56	0.59		
12500						8.10	67	0.56		
16000						9.80	81	0.53		
20000						11.60	95	0.54		
25000						13.50	113	0.48		
31500						16.20	134	0.48	HV-MV 17.5~18.5 HV-LV 10.5 MV-LV 6.5	HV-MV 10.5 HV-LV 17.5~18.5 MV-LV 6.5
40000						19.10	161	0.44		
50000						22.90	192	0.42		
63000						27.10	230	0.40		

SZ18-6300-63000-110kV oil-immersed three-phase double winding on load voltage regulating power transformer (Class III energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110	±8×1.25%	6.3 6.6 10.5 21	YNd11	6.40	33	0.64	10.5
8000					7.70	40	0.64	
10000					9.00	48	0.59	
12500					10.70	56	0.59	
16000					12.90	69	0.55	
20000					15.40	84	0.55	
25000					18.20	99	0.51	
31500					21.60	117	0.51	
40000					25.80	148	0.46	
50000					30.60	184	0.46	
63000					36.30	220	0.42	

SZ20-6300 - 63000 / 110kV oil-immersed three-phase double winding on load voltage regulating power transformer (Class II efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110	±8×1.25%	6.3 6.6 10.5 21	YNd11	5.20	32	0.64	10.5
8000					6.20	38	0.64	
10000					7.30	45	0.59	
12500					8.70	53	0.59	
16000					10.50	66	0.55	
20000					12.50	79	0.55	
25000					14.80	94	0.51	
31500					17.60	111	0.51	
40000					21.00	140	0.46	
50000					24.80	175	0.46	
63000					29.50	209	0.42	

SZ22-6300 - 63000 / 110kV oil immersed three-phase double winding on load voltage regulating power transformer (Class I energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110	±8×1.25%	6.3 6.6 10.5 21	YNd11	4.40	32	0.64	10.5
8000					5.30	38	0.64	
10000					6.20	45	0.59	
12500					7.40	53	0.59	
16000					8.90	66	0.55	
20000					10.60	79	0.55	
25000					12.50	94	0.51	
31500					14.90	111	0.51	
40000					17.80	140	0.46	
50000					21.00	175	0.46	
63000					25.00	209	0.42	

SSZ18-6300 - 63000 / 110kV oil-immersed three-phase three winding on load voltage regulating power transformer (Class III energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range				Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %	
	HV kV	Tapping Range	MV kV	LV kV					Step-up	Step-down
6300	110 115 121	±8×2.5%	36 37 38.5	6.3 6.6 10.5 21	YNd11	7.70	42	0.76	HV-MV 10.5 HV-LV 18~19 MV-LV 6.5	
8000						9.20	50	0.76		
10000						10.90	59	0.71		
12500						12.90	70	0.71		
16000						15.40	86	0.67		
20000						18.20	101	0.67		
25000						21.60	120	0.62		
31500						25.70	142	0.62		
40000						30.80	170	0.58		
50000						36.40	202	0.58		
63000						43.30	243	0.53		

SSZ20-6300 - 63000 / 110kV oil immersed three-phase three winding on load voltage regulating power transformer (Class II efficiency)

Rated Capacity kVA	Voltage combination and tapping range				Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %	
	HV kV	Tapping Range	MV kV	LV kV					Step-up	Step-down
6300	110 115 121	±8×1.25%	36 37 38.5	6.3 6.6 10.5 21	YNd11	6.20	40	0.76	HV-MV 10.5 HV-LV 18~19 MV-LV 6.5	
8000						7.50	48	0.76		
10000						8.80	56	0.71		
12500						10.50	67	0.71		
16000						12.50	81	0.67		
20000						14.80	95	0.67		
25000						17.60	113	0.62		
31500						20.90	134	0.62		
40000						25.00	161	0.58		
50000						29.60	192	0.58		
63000						35.20	230	0.53		

SSZ22-6300 - 63000 / 110kV oil-immersed three-phase three winding on load voltage regulating power transformer (Class I energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range				Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %	
	HV kV	Tapping Range	MV kV	LV kV					Step-up	Step-down
6300	110 115 121	±8×2.5%	36 37 38.5	6.3 6.6 10.5 21	YNd11	5.30	40	0.76	HV-MV 10.5 HV-LV 18~19 MV-LV 6.5	
8000						6.30	48	0.76		
10000						7.50	56	0.71		
12500						8.90	67	0.71		
16000						10.60	81	0.67		
20000						12.50	95	0.67		
25000						14.90	113	0.62		
31500						17.70	134	0.62		
40000						21.20	161	0.58		
50000						25.00	192	0.58		
63000						29.80	230	0.53		

SS11-6300 - 90000 / 110kV oil-immersed three winding non-excitation voltage regulating power transformer

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %	
	HV kV	MV kV	LV kV					Step-up	Step-down
6300	110±2× 2.5% 121±2× 2.5%	35 38.5	6.3 6.6 10.5 11	YNyn0d11	9.0	45	0.75	HV-MV 17~18 HV-LV 10.5 MV-LV 6.5	HV-MV 10.5 HV-LV 17~18 MV-LV 6.5
8000					10.8	53	0.71		
10000					12.7	62	0.68		
12500					15	73	0.64		
16000					18	90	0.6		
20000					21.3	106	0.56		
25000					25.2	125	0.53		
31500					30	148	0.49		
40000					35.8	178	0.41		
50000					42.3	212	0.38		
63000					50.2	255	0.38		
90000					65.6	333	0.3		

Note:

1. The capacity distribution of high, medium and low voltage windings is (100 / 100 / 100)%;

2. The connection group label can be YNd11y10 as required;

3. According to the needs of users, the voltage value or tap different from that in the table can be selected for medium voltage;

4. The maximum current tap is - 5% tap position

SSZ11-6300 - 90000 / 110kV oil-immersed three winding on load voltage regulating power transformer

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	MV kV	LV kV					
6300	110±8×1.25%	35 38.5	6.3 6.6 10.5 11	YNyn0d11	9.7	45	0.89	HV-MV 10.5 HV-LV 17~18 MV-LV 6.5
8000					11.7	53	0.89	
10000					13.8	62	0.84	
12500					15.9	73	0.84	
16000					19.7	90	0.79	
20000					23.3	106	0.79	
25000					27.5	125	0.74	
31500					32.7	148	0.74	
40000					39.2	178	0.68	
50000					46.4	212	0.68	
63000					55.2	255	0.63	
90000					72.1	333	0.48	

Note:

1. On load voltage regulating transformer, temporarily provide step-down structure products;

2. The capacity distribution of high, medium and low voltage windings is (100 / 100 / 100)%;

3. The connection group label can be YNd11y10 as required;

4. The maximum current tapping is - 10% tapping position;

5. According to the needs of users, the voltage value or tap different from that in the table can be selected for medium voltage.

SS11-6300 - 90000 / 110kV oil-immersed three winding non-excitation voltage regulating power transformer

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	LV kV					
6300	110 121	35 38.5	6.3 6.6 10.5 11	YNd11	7.5	34	0.68	10.5
8000					9	42	0.64	
10000					10.5	50	0.6	
12500					12.3	59	0.56	
16000					15	73	0.53	
20000					17.7	88	0.49	
25000					21	104	0.45	
31500					24.9	125	0.41	
40000					29.8	147	0.38	
50000					35.2	183	0.34	
63000					41.8	221	0.3	
90000					54.6	289	0.3	

Note:1. The maximum current tap is - 5%

S11-6300 - 90000/110kV oil-immersed double winding low voltage 35kV non-excitation voltage regulating power transformer

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	LV kV					
6300	110 121	±2×2.5%	35 38.5	YNd11	8.1	37	0.79	10.5
8000					9.7	45	0.79	
10000					11.4	52	0.74	
12500					13.3	62	0.74	
16000					15.9	77	0.68	
20000					18.9	93	0.68	
25000					22.2	109	0.63	
31500					26.2	132	0.63	
40000					31.2	155	0.58	
50000					36.6	192	0.58	
63000					43.3	232	0.53	
90000					56.6	303	0.41	

Note:

1. The maximum current tap is - 5% tap position.

SZ11-6300 - 90000/110kV oil-immersed double winding on load voltage regulating power transformer

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	LV kV					
6300	110	±8×21.25%	6.3 6.6 10.5 11	YNd11	8.1	34	0.74	10.5
8000					9.7	42	0.74	
10000					11.7	50	0.68	
12500					13.6	59	0.68	
16000					16.5	73	0.63	
20000					19.5	88	0.63	
25000					22.7	104	0.58	
31500					27.4	125	0.58	
40000					32.9	147	0.53	
50000					38.9	183	0.53	
63000					46.3	221	0.47	
90000					60.5	289	0.36	

Note:

1. On load voltage regulating transformer, temporarily provide step-down structure products;

2. Negotiate with the manufacturer according to the user department; Products that can provide other voltage combinations;

3. The maximum current tap is - 10% tap position.

SS13-6300 - 90000/110kV oil-immersed three winding non excitation voltage regulating power transformer

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %	
	HV kV	MV kV	LV kV					Step-up	Step-down
6300	110±2×2.5% 121±2×2.5%	35 38.5	6.3 6.6 10.5 11	YNyn0d11	7.2	45	0.75	HV-MV 17~18 HV-LV 10.5 MV-LV 6.5	HV-MV 10.5 HV-LV 17~18 MV-LV 6.5
8000					8.6	53	0.71		
10000					10.2	62	0.68		
12500					12	73	0.64		
16000					14.4	90	0.6		
20000					17	106	0.56		
25000					20.2	125	0.53		
31500					24	148	0.49		
40000					28.6	178	0.41		
50000					33.8	212	0.38		
63000					40.2	255	0.38		
90000					52.5	333	0.3		

Note:

1. The capacity distribution of high, medium and low voltage windings is (100 / 100 / 100)%;
2. The connection group label can be YNd11y10 as required;
3. According to the needs of users, the voltage value or tap different from that in the table can be selected for medium voltage;
4. The maximum current tap is - 5% tap position.

SSZ13-6300 - 90000/110kV oil-immersed three winding on load voltage regulating power transformer

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	MV kV	LV kV					
6300	110±8×1.25%	35 38.5	6.3 6.6 10.5 11	YNyn0d11	7.8	45	0.89	HV-MV 10.5 HV-LV 17~18 MV-LV 6.5
8000					9.4	53	0.89	
10000					11	62	0.84	
12500					12.7	73	0.84	
16000					15.8	90	0.79	
20000					18.6	106	0.79	
25000					22	125	0.74	
31500					26.2	148	0.74	
40000					31.4	178	0.68	
50000					37.1	212	0.68	
63000					44.2	255	0.63	
90000					57.7	333	0.48	

Note:

1. On load voltage regulating transformer, temporarily provide step-down structure products;
2. The capacity distribution of high, medium and low voltage windings is (100 / 100 / 100)%;
3. The connection group label can be YNd11y10 as required;
4. The maximum current tapping is - 10% tapping position;
5. According to the needs of users, the voltage value or tap different from that in the table can be selected for medium voltage.

S13-6300 - 90000 / 110kV oil-immersed double winding non excitation voltage regulating power transformer

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	LV kV					
6300	110 121	±2×2.5%	35 38.5	YNd11	5.92	34	0.68	10.5
8000					7.2	42	0.64	
10000					8.4	50	0.6	
12500					9.8	59	0.56	
16000					12	73	0.53	
20000					14.2	88	0.49	
25000					16.8	104	0.45	
31500					19.9	125	0.41	
40000					23.8	147	0.38	
50000					28.2	183	0.34	
63000					33.4	221	0.3	
90000					43.7	289	0.3	

Note:

1. The maximum current tapping is - 5%.

S13-6300 - 90000 / 110kV/35kV oil-immersed double winding non excitation voltage regulating power transformer

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	LV kV					
6300	110	±8×21.25%	6.3 6.6 10.5 11	YNd11	6.5	37	0.79	10.5
8000					7.8	45	0.79	
10000					9.1	52	0.74	
12500					10.6	62	0.74	
16000					12.7	77	0.68	
20000					15.1	93	0.68	
25000					17.8	109	0.63	
31500					21	132	0.63	
40000					25	155	0.58	
50000					29.3	192	0.58	
63000					34.6	232	0.53	
90000					45.3	303	0.41	

Note:

1. The maximum current tapping position is - 5%.

SZ13-6300 - 90000 / 110kV oil-immersed double winding on load voltage regulating power transformer

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	LV kV					
6300	110	±8×1.25%	6.3 6.6 10.5 11	YNd11	6.5	34	0.74	10.5
8000					7.8	42	0.74	
10000					9.4	50	0.68	
12500					10.9	59	0.68	
16000					13.2	73	0.63	
20000					15.6	88	0.63	
25000					18.2	104	0.58	
31500					21.9	125	0.58	
40000					26.3	148	0.53	
50000					31.1	183	0.53	
63000					37	221	0.47	
90000					48.4	289	0.36	

Note:

1. On load voltage regulating transformer, temporarily provide step-down structure products;

2. Negotiate with the manufacturer according to the user department; Products that can provide other voltage combinations;

3. The maximum current tap is - 10% tap position.

S18-3150 - 63000 / 66kV oil-immersed three-phase double winding non excitation voltage regulating power transformer (Class III energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	LV kV					
3150	63 66 69	±5% ±2×2.5%	6.3 6.6 10.5	YNd11	3.20	21.9	0.84	8.0
4000					3.80	25.9	0.80	
5000					4.60	29.2	0.68	
6300					5.80	32.5	0.60	9.0
8000					7.10	38.5	0.60	
10000					8.40	45.4	0.56	
12500					9.90	54	0.56	
16000					12.00	66.3	0.52	
20000					14.10	80.4	0.52	
25000					16.60	95	0.48	
31500					19.70	114	0.44	
40000					23.50	134	0.44	
50000					28.20	158.7	0.40	
63000					33.30	188.1	0.36	

S20-3150 - 63000 / 66kV oil-immersed three-phase double winding non-excitation voltage regulating power transformer (Class II energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	LV kV					
3150	63 66 69	±5% ±2×2.5%	6.3 6.6 10.5	YNd11	2.60	20.7	0.84	8.0
4000					3.10	24.6	0.80	
5000					3.70	27.6	0.68	
6300					4.70	30.8	0.60	9.0
8000					5.80	36.5	0.60	
10000					6.80	43	0.56	
12500					8.10	51.1	0.56	
16000					9.80	62.8	0.52	
20000					11.40	76.1	0.52	
25000					13.50	90	0.48	
31500					16.00	108	0.44	
40000					19.10	126.9	0.44	
50000					22.90	150.3	0.40	
63000					27.00	178.2	0.36	

S22-3150 - 63000 / 66kV oil-immersed three-phase double winding non-excitation voltage regulating power transformer (Class I energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	LV kV					
3150	63 66 69	±5% ±2×2.5%	6.3 6.6 10.5	YNd11	2.20	20.7	0.84	8.0
4000					2.60	24.6	0.80	
5000					3.10	27.6	0.68	
6300					4.00	30.8	0.60	9.0
8000					4.90	36.5	0.60	
10000					5.80	43	0.56	
12500					6.80	51.1	0.56	
16000					8.30	62.8	0.52	
20000					9.70	76.1	0.52	
25000					11.40	90	0.48	
31500					13.50	108	0.44	
40000					16.20	126.9	0.44	
50000					19.40	150.3	0.40	
63000					22.90	178.2	0.36	

SZ18-6300 - 63000 / 66kV oil-immersed three-phase double winding on load voltage regulating power transformer (Class III energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110 115 121	±8×1.25%	6.3 6.6 10.5	YNd11	6.40	32.5	0.60	9.0
8000					7.70	38.5	0.60	
10000					9.00	45.4	0.56	
12500					10.70	54	0.56	
16000					12.90	66.3	0.52	
20000					15.40	80.4	0.52	
25000					18.20	95	0.48	
31500					21.50	114	0.44	
40000					25.80	134	0.44	
50000					30.40	158.7	0.40	
63000					35.90	188.1	0.36	

SZ20-6300 - 63000 / 66kV oil immersed three-phase double winding on load voltage regulating power transformer (Class II energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110 115 121	±8×1.25%	6.3 6.6 10.5	YNd11	5.20	30.8	0.60	9.0
8000					6.20	36.5	0.60	
10000					7.30	43	0.56	
12500					8.70	51.1	0.56	
16000					10.50	62.8	0.52	
20000					12.50	76.1	0.52	
25000					14.80	90	0.48	
31500					17.50	108	0.44	
40000					20.90	126.9	0.44	
50000					24.70	150.3	0.40	
63000					29.20	178.2	0.36	

SZ22-6300 - 63000 / 66kV oil immersed three-phase double winding on load voltage regulating power transformer (Class I energy efficiency)

Rated Capacity kVA	Voltage combination and tapping range			Vector Group	P0 kW	PK kW (75°C)	I0 %	UK %
	HV kV	HV Tapping	HV kV					
6300	110 115 121	±8×1.25%	6.3 6.6 10.5	YNd11	4.40	30.8	0.60	9.0
8000					5.30	36.5	0.60	
10000					6.20	43	0.56	
12500					7.40	51.1	0.56	
16000					8.90	62.8	0.52	
20000					10.60	76.1	0.52	
25000					12.50	90	0.48	
31500					14.80	108	0.44	
40000					17.70	126.9	0.44	
50000					20.90	150.3	0.40	
63000					24.70	178.2	0.36	

Qualifications

QUALITY MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 00123Q310887R1M-1/1100

We hereby certify that

China Electric Equipment (Jiangsu) Transformer Manufacture Co., Ltd.

by reason of its

Quality Management System

has been awarded this certificate for compliance with the standard

ISO 9001:2015

The Quality Management System Applies in the following area:

Certified since: December 29, 2020 Valid from: December 28, 2023 Valid until: December 28, 2026

CHINA QUALITY CERTIFICATION CENTRE

Section 9, No.188, Nanshuan(the South Fourth Ring Road) Xilu(West Road), Beijing 100070, China

http://www.cqc.com.cn

A 0079891

ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 00123E352243R1M-1/1100

We hereby certify that

China Electric Equipment (Jiangsu) Transformer Manufacture Co., Ltd.

by reason of its

Environmental Management System

has been awarded this certificate for compliance with the standard

ISO 14001:2015

The Environmental Management System Applies in the following area:

Certified since: December 28, 2020 Valid from: December 28, 2023 Valid until: December 27, 2026

CHINA QUALITY CERTIFICATION CENTRE

Section 9, No.188, Nanshuan(the South Fourth Ring Road) Xilu(West Road), Beijing 100070, China

http://www.cqc.com.cn

A 0079903

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 00123S34193R1M-1/1100

We hereby certify that

China Electric Equipment (Jiangsu) Transformer Manufacture Co., Ltd.

by reason of its

Occupational Health and Safety Management

has been awarded this certificate for compliance with the standard

ISO 45001:2018

The Occupational Health and Safety Management: Applies in the following area:

Certified since: December 28, 2020 Valid from: December 28, 2023 Valid until: December 27, 2026

CHINA QUALITY CERTIFICATION CENTRE

Section 9, No.188, Nanshuan(the South Fourth Ring Road) Xilu(West Road), Beijing 100070, China

http://www.cqc.com.cn

A 0079374

Certificate
of
Appointment

No. UA 50634363-0001

The Applicant

**China Electric Equipment (Jiangsu)
Transformer Manufacture Co.,Ltd.
No. 188 Ganglong Road, Yangzhong,
Zhenjiang,
212215 Jiangsu
P.R. China**

has been authorized to carry out testing by the order
and under supervision of TÜV Rheinland
according to

IEC 60076-1:2011/EN 60076-1:2011, IEC 60076-2:2011/EN 60076-2:2011
IEC 60076-3:2013/AMD1:2018/EN 60076-3:2013/A1:2018
IEC 60076-4:2002/EN 60076-4:2002, IEC 60076-7:2018/IEC 60076-12:2008
IEC 60076-10:2016/EN 60076-10:2016, IEC 60076-11:2018/EN IEC60076-11:2018
IEC 60156:2018/IEC 60247:2004/IEC 60475:2022

An audit of the laboratory was conducted according to the applicable clauses of
ISO/IEC 17025 by a TÜV Rheinland auditor.
Audit Report No. CN24FGJ1 - 001

This certificate is valid from 06 June 2025 until 05 June 2026.

Date of issue: 25 June 2024

Certification Body

Yongming Yang

TÜV Rheinland (China) Ltd.
3F and 12F, Building 4, No. 15, Ronghua South Road,
Beijing Economic Technological Development Area,
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China National Accreditation Service for Conformity Assessment

LABORATORY ACCREDITATION CERTIFICATE

(Registration No. CNAS L18260)

**Testing Center of China Electric Equipment (Jiangsu)
Transformer Manufacture Co., Ltd.**

(Legal Entity: China Electric Equipment (Jiangsu) Transformer Manufacture Co., Ltd.)

Building 8, No.188, Ganglong Road, Economic Development Zone,
Yangzhong, Zhenjiang, Jiangsu, China

is accredited in accordance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence to undertake the service described in the schedule attached to this certificate.

The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule forms an integral part of this certificate.

Effective Date：2023-05-16

Expiry Date：2029-05-15

Signed on behalf of China National Accreditation Service for Conformity Assessment 张朝华

China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is a signatory of the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC MRA) and the Asia Pacific Accreditation Cooperation Mutual Recognition Arrangement (APAC MRA).
The validity of the certificate can be checked on CNAS website at http://www.cnas.org.cn/english/findanaccreditedbody/index.shtml.

UDEM

CERTIFICATE

ATTESTATION CERTIFICATE OF ELECTROMAGNETIC COMPATIBILITY AND LOW VOLTAGE DIRECTIVES

Technical file of the company mentioned below has been observed and audit has been completed succesfully.
2014/30/EU Electromagnetic Compatibility Directive and 2014/35/EU Low Voltage Directives have been taken as references for these processes

Company Name	: China Electric Equipment (Jiangsu) Transformer Manufacture Co., Ltd.
Company Address	: No. 188 Ganglong Road, Yangzhong, Zhenjiang, Jiangsu, China
Related Directives and Annex	: 2014/35/EU Low Voltage Directive 2014/30/EU Electromagnetic Compatibility Directive
Related Standards	: EN 60076-1:2011, IEC 60076-1:2011
Product Name	: Oil Immersed Transformer
Report No and Date	: TCF-ZD220413LE
Product Brand/Model/Type	: S,S-M,3L,SL-M,S(F)Z,S(F)Z-M,S(F)SZ,S(FP)SZ-M,OS(PF)SZ, OS(PF)SZ-M,QYS,ZTSF,ZHSF,YS,ZPSF(Capacity 240000kva and below, voltage grade 220kV and below)
Certificate Number	: M.2022.206.C72761
Initial Assessment Date	: 13.04.2022
Registration Date	: 14.04.2022
Reissue Date/No	: -
Expiry Date	: 13.04.2027

UDEM International Certification Auditing Training Centre Industry and Trade Inc. Co.

The validity of the certificate can be checked through www.udem.com.tr. The CE mark shown on the right can only be used under the responsibility of the manufacturer with the completion of EC Declaration of Conformity for all the relevant Directives. This certificate remains the property of UDEM International Certification Auditing Training Centre Industry and Trade Inc. Co. to whom it must be returned upon request. The above named firm must keep a copy of this certificate for 10 years from the registration of certificate. This certificate only covers the product(s) stated above and UDEM must be notified in case of any changes on the product(s).

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MA 170008222878 AL ilac-MRA CNAS TESTING CNAS L9020

实验室名称：国家电器产品质量监督检验中心
Lab Name: China National Center for Quality Supervision and Test of Electrical Apparatus Procucts

№ 20M0561-S

型式试验报告
Type Test Report

委托单位：China Electric Equipment (Jiangsu) Transformer Manufacturing Co., Ltd
Client:

产品名称：Power transformer
Name of Product:

产品型号：SZ11-63000/110
Product Type:

检验类别：Commission test
Test Category:

本实验室对出具的检验(试验)结果负责，未经实验室书面同意，不得部分地复制本报告。

The laboratory is responsible for the inspection (Test) results. The report shall not be reproduced except in full, written approval of the laboratory.

Product family

Amorphous Metal Transformer

VPI Transformer

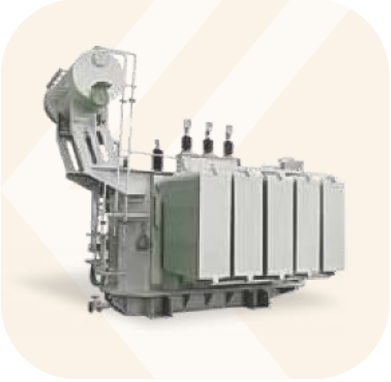
Cast Resin Transformer

220kV Power Transformer

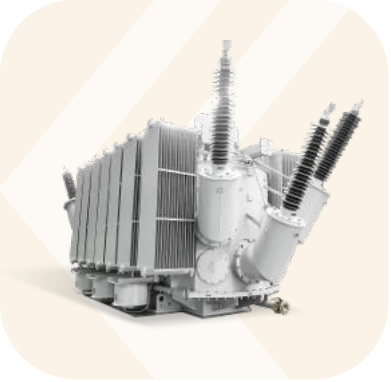
220kV Traction Transformer

110kV Traction Transformer

110kV Power Transformer

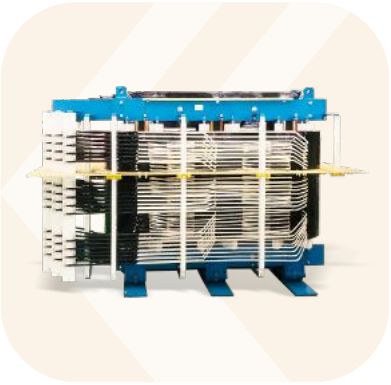


35kV Power Transformer



110kV Mobile Transformer

Mining Explosion-proof Substation



Ocean Platform Transformer

Integrated PV Step-up Transformer

Marine Offshore Duty Transformers

AFWF Transformer

Substation

Integrated Boost Converter

Marine Transformer

Substation

CEEG Transformer Co., Ltd

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GO ALONG WITH GIANTS
KEEP PACE WITH THE WORLD
企业荣誉