

Power Transformer

More reliable power supply
More secure power protection

JUBANG GROUP CO., LTD.

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The company reserves the right of final interpretation.



Committed to becoming a
leader in power system solutions

ONE-STOP PRODUCTS
EPC FOR POWER PROJECTS
SMART O&M



Mission
More Reliable Power Supply · Safer Power Protection



Vision
Set the industry benchmark for power distribution equipment and jointly build a smart energy ecosystem



Core Values
Integrity · Diligence · Responsibility · Respect · Trust



Company Profile

Jubang Group Co., Ltd. is a provider of one-stop products + power EPC services + smart O&M power system solutions. Founded in 1993, the company has a registered capital of RMB 137.17 million. Its manufacturing base covers an area of 5.58 hectares, with 135,000 m² of standard workshops. The product portfolio includes intelligent complete switchgear, primary and secondary integrated equipment, distribution transformers, box-type substations, and power components.

In recent years, the company has continuously enhanced its capabilities in technology, branding, marketing, intelligent manufacturing, and services, and has become a qualified supplier to State Grid Corporation of China, China Southern Power Grid, PetroChina Company Limited, Inner Mongolia Power (Group) Co., Ltd., China Three Gorges Corporation, China Gezhouba Group, China Gold Group, Inner Mongolia Yitai Group, and other large enterprises.

The company has established industry–university–research cooperation with Zhejiang University, North China Electric Power University, Northeast Electric Power University, China Electric Power Research Institute, Shanghai Electrical Apparatus Research Institute, Hebei University of Technology, Hangzhou Dianzi University, and other institutions. It has obtained a total of 160 valid patents, including 35 invention patents, 45 software copyrights, and 11 provincial- and ministerial-level science and technology progress awards, and has participated in the formulation of 25 national and industry standards.

Jubang Group has been recognized as a National High-Tech Enterprise, a CNAS-accredited National Laboratory, a National Intellectual Property Advantage Enterprise, a “Little Giant” enterprise specializing in innovation by the Ministry of Industry and Information Technology, a National Postdoctoral Research Workstation, a National Green Factory, a Zhejiang Provincial Contract-Honoring and Creditworthy Enterprise, a Zhejiang Provincial Service-Oriented Manufacturing Demonstration Enterprise, a Zhejiang Provincial “Hidden Champion” Enterprise, a Zhejiang Provincial Industrial Internet Platform, a Zhejiang Provincial Green Low-Carbon Factory, a Zhejiang Provincial Specialized and New Enterprise, and a Zhejiang Provincial Third-Level Cloud Enterprise. The company holds Grade II qualification for power engineering construction general contracting, and holds, undertakes, and trials Grade III power business licenses.

1993
Founded

6⁺
R&D platforms

11⁺
National-level honors

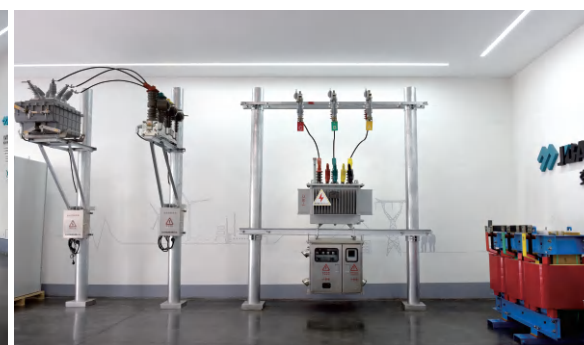
5⁺
Cooperation with Fortune
Global 500 enterprises

4
National wholly
owned subsidiaries

35⁺
Over 35 offices
nationwide

Craftsmanship Creates Excellence Meticulous Quality · Customer First

Jubang Group Co., Ltd. always places customer satisfaction as the top priority. With a CNAS-accredited national laboratory, the company implements strict quality control standards, conducting full-process control from raw material procurement to finished product delivery. Guided by customer needs, Jubang integrates design, manufacturing, and testing, delivering reliable quality to support long-term customer value.



Precision Quality Control

Strict implementation of ISO 9001 Quality Management System, ISO 14001 Environmental Management System, and ISO 45001 Occupational Health and Safety Management System. Advanced quality management tools such as FMEA, PPAP, 8D, Control Plans, and Six Sigma are applied to continuously improve product quality.



Intelligent R&D Empowerment

Technological innovation is the core competitiveness of Jubang. Our R&D team is composed of highly educated and high-caliber professionals, dedicated to delivering competitive products and services and creating greater value for customers. With senior experts as technical advisors, the company has established a distinctive three-tier R&D talent structure. Through industry-university-research cooperation with domestic universities and research institutes, Jubang accelerates the transformation of R&D achievements and promotes high-quality development.

End-to-End Intelligent Manufacturing

With digital factories and intelligent manufacturing at the core, Jubang has established an efficient PLM collaborative integration platform, along with ERP and MES systems, enabling full life-cycle management of products. Seamless coordination is achieved across design, manufacturing, quality, and logistics, providing precise and efficient management at every stage of the product life cycle.

In addition, the company has introduced advanced production lines and processing equipment, including circuit breaker and RMU automated assembly and testing lines, CNC sheet metal flexible production lines, CNC turret punches, CNC laser cutting machines, CNC press brakes, CNC machining centers, and CNC spring machines. Jubang is also equipped with a CNAS-accredited national laboratory, featuring capabilities for mechanical performance, temperature rise, lightning impulse, partial discharge testing, as well as product testing and integrated management of test data.

Corporate Honors

160⁺

Valid Patents

120⁺

Provincial-Level
Products

45⁺

Software
Copyrights

25⁺

Participation
in National



High-Tech Enterprise



National Patent Product



World-Class Quality
Made in Zhejiang



Zhejiang Famous
Brand Product



National Spark
Plan Project



Science and Technology
Progress Award



Specialized, Refined,
Characteristic



Carbon Footprint

National-Level Honors

- MIIT Specialized, Refined, Distinctive, and Innovative “Little Giant” Enterprise for High-Quality Development Support
- National Green Factory
- MIIT Specialized, Refined, Distinctive, and Innovative “Little Giant” Enterprise for High-Quality Development Support
- National Postdoctoral Research Workstation
- National High-Tech Enterprise
- National Intellectual Property Demonstration Enterprise
- National Intellectual Property Advantage Enterprise
- National Contract-Abiding and Creditworthy Enterprise
- National Model Employer of Harmonious Labor Relations
- CNAS Nationally Accredited Laboratory
- National Green Product

Provincial-Level Honors

- Zhejiang Provincial Hidden Champion Enterprise
- Zhejiang Jubang Electric Appliance Research Institute
- Zhejiang Provincial Enterprise Technology Center
- Zhejiang Provincial Industrial Design Center
- Zhejiang Provincial High-Tech Enterprise R&D Center
- Zhejiang Manufacturing Single Champion Cultivation Enterprise
- Zhejiang Specialized, Refined, Distinctive, and Innovative SME
- Zhejiang Green Low-Carbon Factory
- Zhejiang Provincial Intellectual Property Demonstration Enterprise
- Zhejiang Service-Oriented Manufacturing Demonstration Enterprise
- Zhejiang Third-Batch Cloud-Based Enterprise
- Zhejiang Provincial Industrial Internet Platform
- Zhejiang Provincial Software Copyright Product
- Zhejiang Provincial Credit Management Demonstration Enterprise
- Zhejiang Provincial Supply Chain Innovation and Application Demonstration Enterprise
- Zhejiang Second-Batch Digital Economy “Morning Star” Pilot Enterprise
- Zhejiang Provincial Second-Batch Intelligent Manufacturing Demonstration Enterprise
- Zhejiang Demonstration Enterprise for New Areas of Industrial Integration
- Zhejiang Manufacturing Certification Enterprise
- Zhejiang Provincial Enterprise with Outstanding Achievements in Clean Production (Phased)
- Zhejiang Provincial Technology-Based SME
- Zhejiang Provincial Trademark Brand Demonstration Enterprise
- Zhejiang Provincial Innovation Demonstration Enterprise

Municipal-Level Honors

- Yueqing Manufacturing Industry Top 32 Enterprises
- Wenzhou Model Enterprise Group
- Wenzhou Civilized Unit
- Wenzhou Credit Management Demonstration Enterprise
- Wenzhou High and Low Voltage Electrical Technician Training Center
- Yueqing Mayor’s Quality Award
- Yueqing “Zero-Carbon Factory” Innovation Demonstration Enterprise
- Yueqing High-Skilled Talent Public Training Base Enterprise

Science & Innovation Platforms

- National Postdoctoral Research Workstation
- Zhejiang Jubang Electric Appliance Research Institute
- Zhejiang Provincial Enterprise Technology Center
- Zhejiang Provincial Industrial Design Center
- Zhejiang Provincial High-Tech Enterprise R&D Center
- North China Electric Power University
- Northeast Electric Power University
- Nanjing University of Aeronautics and Astronautics
- Zhejiang University
- Hebei University of Science and Technology
- Hangzhou Dianzi University
- Shanghai University of Engineering Science
- Wenzhou Polytechnic
- China Electric Power Research Institute
- Shanghai Electrical Apparatus Research Institute

Scientific Research Achievements

- First Prize of China Commercial Federation Science and Technology Progress Award
- Second and Third Prizes of Zhejiang Provincial Science and Technology Progress Award
- Second Prize of Zhejiang Provincial Fire Protection Science and Technology Innovation Award
- Second Prize of China Federation of Industry and Commerce Science and Technology Progress Award
- National Specialized, Refined, and Innovative SME Technology Innovation Project
- National Spark Program Project
- National Torch Program Project
- China Industry-Academia-Research Cooperation Innovation Achievement Award
- Power Industry Major Technical Equipment and Project Catalog
- Excellence Award for Participation in Standardization of the National Low-Voltage Electrical Standardization Technical Committee
- Second and Third Prizes of Zhejiang Machinery Industry Science and Technology Award
- Second and Third Prizes of Zhejiang Power Transmission and Transformation Equipment Industry Association Outstanding Product Award
- Zhejiang Provincial Excellent Industrial Product
- Zhejiang Manufacturing Premium Product
- Zhejiang Energy-Saving New Product Catalog
- Second Prize of Wenzhou Science and Technology Progress Award
- Outstanding Standardized Technology Achievement Award of Wenzhou Quality and Technology Promotion Association
- Wenzhou First-Set (Suite) Equipment in Key Areas of Equipment Manufacturing

Social Responsibility

- Standing Director of China Electricity Enterprise Federation
- Vice Chairman of China Electrical Equipment Industry Association (High Voltage Switchgear Branch)
- Director of National Low-Voltage Electrical Standardization Technical Committee (SAC/TC189)
- Director of National Low-Voltage Complete Switchgear and Control Equipment Standardization Technical Committee (SAC/TC266)

Strategic Partners

Centered on enhancing customer experience through meeting personalized needs, we deliver 360° all-round product and service standards, providing comprehensive pre-sales and after-sales support. Anytime, anywhere, whenever you have a requirement, we are committed to fully meeting your needs.



Intelligent Power Distribution System



中国铁建



中航工业



青藏铁路



平高集团
PINGGAO GROUP



火箭军



中国中铁
CREC



中国港湾
CHINA HARBOUR



南京航空航天大学
Nanjing University of Aeronautics and Astronautics



Power Grid System



国家电网
STATE GRID



中国南方电网
CHINA SOUTHERN POWER GRID



柳电国际
CHENDIAN INTERNATIONAL



内蒙古电力(集团)有限责任公司
INNER MONGOLIA POWER (GROUP) CO.,LTD



山西地方电力有限公司
SHANXI LOCAL ELECTRIC POWER CO.,LTD



Oil & Gas Industry



中国石油



华峰



兰太实业
LANTAI INDUSTRY



赛科 SECCO



CNSG
中盐集团



1 Hour
Rapid Response



24 Hours
Customer Demand Response



12 Hours
Engineers On-Site



360°
One-Stop Solution



Steel, Metallurgy & Mining Industry



福建三钢



湖北新冶钢



中钢集团



伊泰



中国黄金
China Gold



青拓集团
TSINGTUO GROUP



晋能控股煤业集团
JINENG HOLDING COAL INDUSTRY GROUP



中国煤炭科工集团



淮北矿业



Huaiyan 淮南矿业



New Energy Power Industry



国家电投
SPIC



CHINA TOWER
中国铁塔



中国大唐集团公司
China Datang Corporation



中国三峡
China Three Gorges Corporation



甘肃省景泰川电力提灌管理局

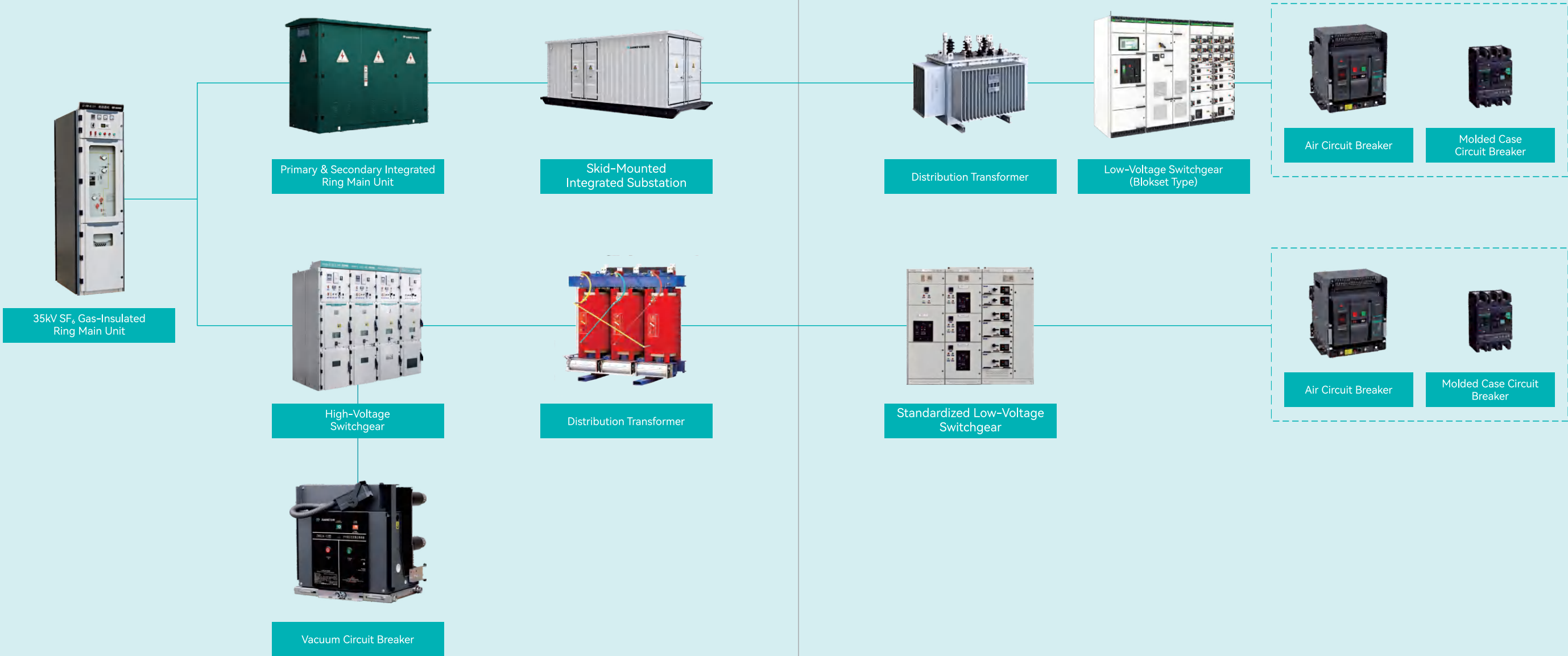
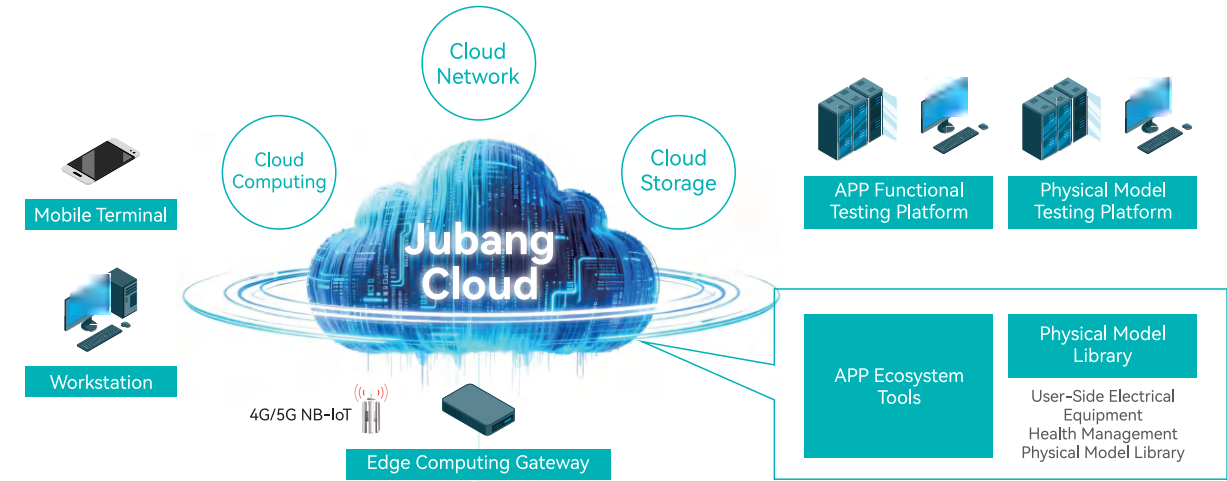


中国葛洲坝集团
CHINA GEZHOUBA GROUP

Intelligent Electrical System

Jubang Group specializes in the manufacturing of power distribution equipment up to 35 kV and below, with a complete industrial chain covering intelligent complete switchgear, primary–secondary integrated products, distribution transformers, box-type substations, and electrical components.

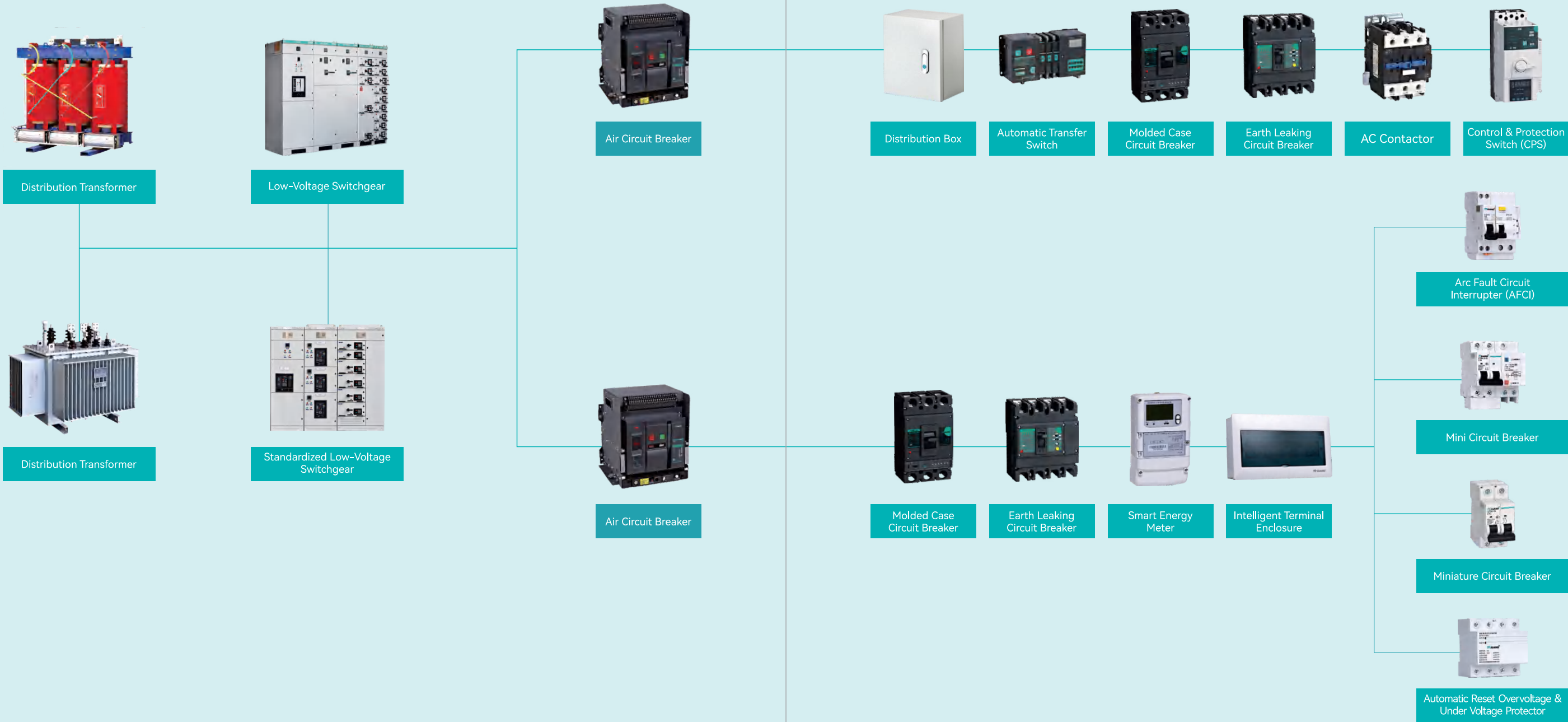
The cloud platform, a flagship product of the company’s digital transformation, has been recognized as a provincial-level industrial internet platform. It integrates six core management modules—real-time monitoring, operation & maintenance management, energy management, health management, asset management, and electronic archives—and is deeply integrated with equipment to deliver comprehensive intelligent electrical system solutions.



Industrial & Civil Construction Industry Solutions

With the rapid development of the social economy, in addition to ensuring reliable power supply, energy conservation and environmental protection are increasingly emphasized. Jubang leverages its advanced intelligent cloud platform, integrating self-developed air-insulated switchgear, prefabricated low-voltage distribution equipment, intelligent circuit breakers, dual-power automatic transfer switches, and other product series.

Through real-time monitoring of power equipment operating status, maintenance costs are effectively reduced, delivering digital and intelligent solutions for industrial and civil construction sectors. Typical applications include high-rise residential communities, training bases for aviation and navigation, Geely Innovation Headquarters Building, Pinghai Ocean Science and Technology Cultural Center, and Zhongshan Power Supply Projects, among others.

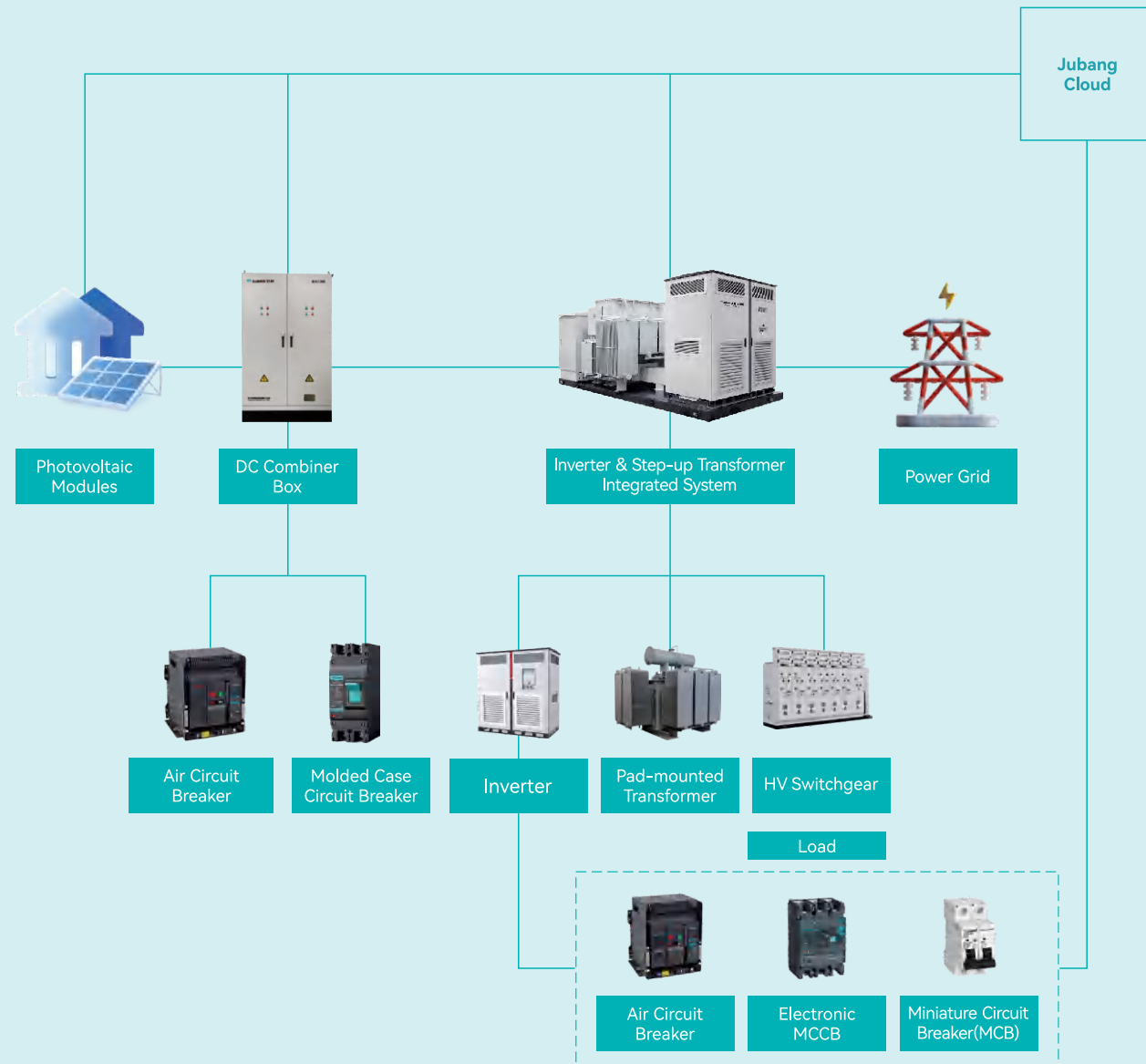


Energy Industry Solutions

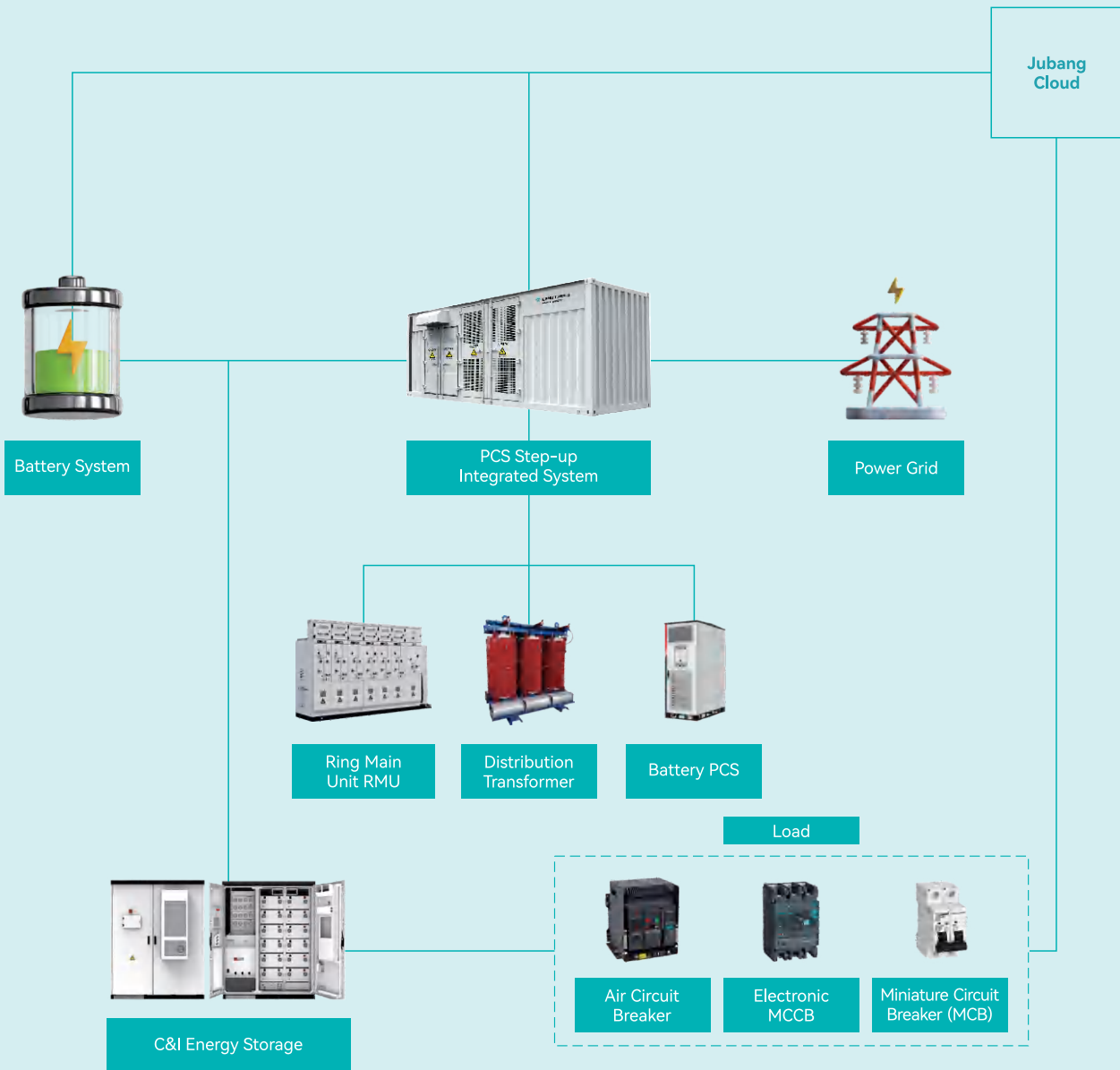
In response to national “dual-carbon” policies, Jubang integrates intelligent process monitoring and control technologies with independently developed oil-immersed transformers, dry-type transformers, DC circuit breakers, AC circuit breakers, and dual-power automatic transfer switches.

While ensuring efficient energy utilization, these solutions improve power supply reliability, reduce maintenance costs, and enhance user safety, delivering intelligent solutions for the new energy sector.

Photovoltaic Power Generation System Solutions



Energy Storage System Solution



6-10kV

Oil-Immersed Power Transformer



High Sealing
Performance



Energy Saving &
Reduced Loss



Low
Noise



Compact
Structure



6-10kV Oil-Immersed Power Transformer



1 Overview

1.1 Product Features

The three-phase oil-immersed power transformers produced by our company adopt a new insulation structure, which improves short-circuit resistance. The iron core is made of high-quality cold-rolled silicon steel sheets. The high-voltage winding is made of high-quality oxygen-free copper conductors and adopts a multilayer cylindrical structure. All fasteners are specially treated to prevent loosening. The product features high efficiency and low loss, which can significantly reduce power consumption and operating costs. It offers remarkable economic and social benefits and is a high-tech product widely promoted by the state.

Based on traditional technology and mature manufacturing processes, our company has carried out multiple improvements, including:

- ① Spiral windings with oil ducts for better internal heat dissipation.
- ② Improved effective support at the winding ends for stronger short-circuit resistance.
- ③ A new lifting structure and body positioning design for improved reliability during long-distance transportation and operation.
- ④ Various unique and reliable structural designs to better meet customer needs.
- ⑤ Advanced winding technology for higher technical performance.
- ⑥ A fully sealed tank structure that isolates the transformer from air, preventing oil oxidation and insulation moisture, thereby enhancing operational reliability and enabling maintenance-free normal operation.

All Raw Materials Are Strictly Tested, All material suppliers have passed strict audits under the ISO 9000 quality management system.

- ① Oxygen-free copper conductors with lower resistivity are used, and after a series of surface treatments, they are smoother and burr-free, resulting in lower load loss and more reliable electrical performance.
- ② High-quality silicon steel sheets with lower unit loss are used to reduce no-load loss.
- ③ High-quality laminated insulation components are used to ensure that insulation does not crack or shift under short-circuit conditions.
- ④ Transformer oil is deeply filtered, ensuring lower moisture, gas, and impurity levels for more reliable operation.
- ⑤ High-quality rubber sealing materials are used to effectively prevent aging and oil leakage.

1.2 Normal Service Conditions

Altitude:

Not exceeding 1000 m

Ambient Temperature:

Maximum temperature: 45°C

Minimum temperature: -25°C

Maximum daily average temperature: 25 K

Maximum annual average temperature: 30°C

Annual average temperature: 20°C

Power Supply Conditions:

The waveform of the supply voltage shall be approximately sinusoidal.

For three-phase transformers, the three-phase supply voltage should be approximately symmetrical.

Installation Environment:

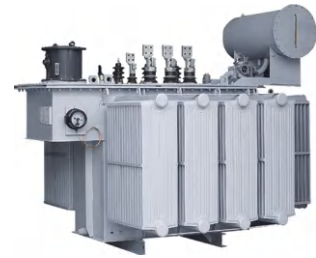
The installation site should be free from obvious contamination.

Seismic Resistance:

Ground acceleration caused by earthquakes:

Horizontal direction: $\leq 3 \text{ m/s}^2$

Vertical direction: $\leq 1.5 \text{ m/s}^2$



1.3 Special Service Conditions

If any special operating conditions beyond the normal service conditions are required, please specify them during inquiry and ordering.

1.4 Applicable Standards

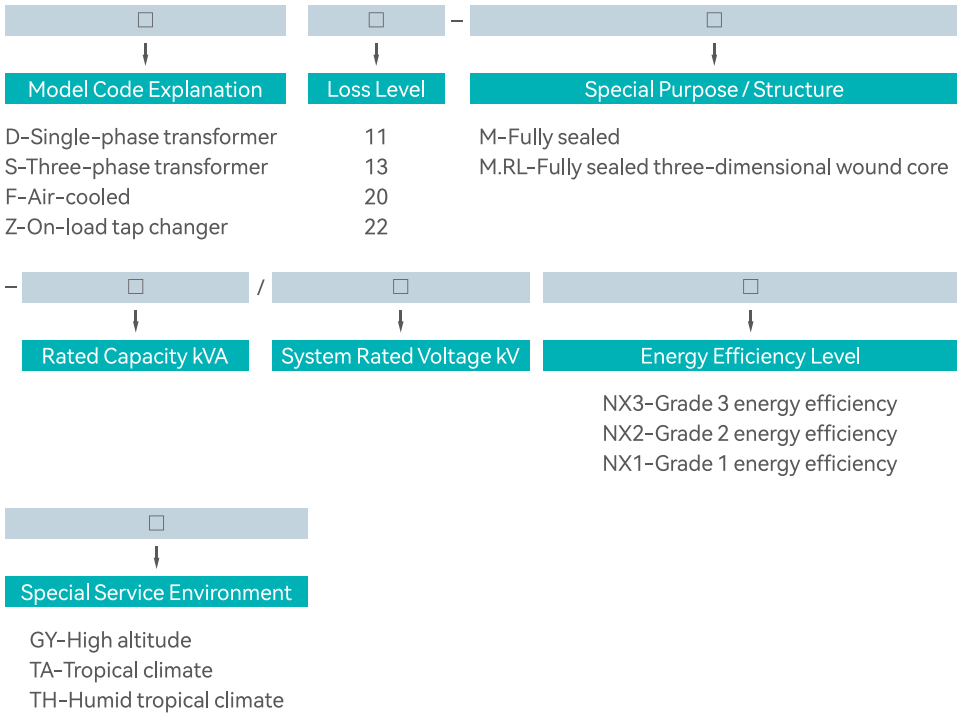
GB/T1094.1 GB/T1094.2 GB/T1094.3 GB/T1094.5 GB/T25289 GB/T25438
GB/T6451 GB/T7595 GB20052 JB/T3837 JB/T10088
The transformers manufactured by our company comply with the latest editions of the above standards.

1.5 Ordering Information

When placing an order, please provide the following information:

- ① Transformer model
- ② Rated capacity
- ③ Rated voltage of high-voltage and low-voltage sides
- ④ High-voltage tapping range
- ⑤ Phase number
- ⑥ Frequency
- ⑦ Vector group designation

2 Model Designation



3 Main Technical Parameters

Technical Parameters of 6 kV / 10 kV Class S11 Series Oil-Immersed Three-Phase On-Load Tap-Changing Distribution Transformers

Rated Capacity (kVA)	Voltage Combination (kV)			Vector Group	Loss (kW)		No-load Current (%)	Short-circuit Impedance (%)	Weight (kg)			Overall Dimensions (mm) L × W × H	Track Gauge (Longitudinal / Transverse)
	HV	HV Tapping Range (%)	LV		No-load	Load			Active Part Weight	Oil Weight	Total Weight		
30	6	±2×2.5	0.4	Dyn11	0.100	0.630/0.600	1.5	4.0	135	55	325	680×480×846	550/400
50					0.130	0.910/0.870	1.3		210	75	435	765×690×876	550/400
63					0.150	1.090/1.040	1.2		245	85	490	795×645×915	550/400
80					0.180	1.310/1.250	1.2		290	90	550	825×660×925	550/550
100					0.200	1.580/1.500	1.1		315	95	590	810×770×890	550/550
125					0.240	1.890/1.800	1.1		365	100	660	825×800×960	550/550
160					0.280	2.310/2.200	1.0		440	115	720	1115×735×985	550/550
200					0.340	2.730/2.600	1.0		490	160	790	1186×815×1050	550/550
250				Yzn11	0.400	3.200/3.050	0.9	4.5	600	150	960	1290×860×1050	660/660
315					0.480	3.830/3.650	0.9		710	180	1120	1350×920×1090	660/660
400					0.570	4.520/4.300	0.8		920	210	1440	1485×1030×1120	660/660
500					0.680	5.410/5.150	0.8		1050	320	1800	1470×1030×1160	660/660
630					0.810	6.200	0.6		1130	260	1770	1550×1045×1225	660/660
800					0.980	7.500	0.6		1340	290	2060	1730×1220×1285	820/820
1000					1.150	10.300	0.6		1440	420	2505	1670×1160×1375	820/820
1250					1.360	12.000	0.5		1750	480	2970	1750×1240×1425	820/820
1600					1.640	14.500	0.5		2240	600	3950	1860×1260×1485	820/820
2000				Yyn0	1.940	18.300	0.4	5.0	2575	635	4305	1990×1315×1620	820/820
2500					2.290	21.200	0.4		3270	815	5440	2065×1360×1750	1070/1070

- Note:
- ① For three-phase transformers with a rated capacity of 500 kVA and below, the load loss above the diagonal line in the table applies to Dyn11 or Yzn11 vector groups, while the load loss below the diagonal line applies to the Yyn0 vector group.
 - ② The overall dimensions provided are for reference during selection only. The final dimensions shall be subject to the actual product outline drawing.

Technical Parameters of 6 kV / 10 kV Class S11 Series Oil-Immersed Three-Phase Double-Winding Non-Excitation Tap-Changing Distribution Transformers

Rated Capacity (kVA)	Voltage Combination (kV)			Vector Group	Loss (kW)		No-load Current (%)	Short-circuit Impedance (%)	Weight (kg)			Overall Dimensions (mm) L × W × H	Track Gauge (Longitudinal / Transverse)	
	HV	HV Tapping Range (%)	LV		No-load	Load			Active Part Weight	Oil Weight	Total Weight			
200	6	±2×2.5	3	Yd11 Dy11	0.34	3.15	1.8	4.5	650	160	1000	1180×740×1270	660/660	
250					0.40	3.60	1.7		770	200	1190	1230×780×1340		
315					0.48	4.30	1.6		900	215	1360	1260×810×1370		
400					0.57	5.20	1.5		1080	260	1650	1380×900×1390		
500					0.68	6.20	1.4		1250	280	1890	1400×920×1450		
630			6.3		3.15	0.82	6.92	0.6	5.5	1470	340	2245	1580×1020×1430	820/820
800			1.00			8.46	0.6	1735		385	2645	1665×1070×1520		
1000			1.18			9.91	0.6	1910		430	2980	1740×1160×1550		
1250			1.40			11.70	0.5	2210		590	3640	1820×1210×1740		
1600			1.68			14.10	0.4	2640		680	4270	1840×1240×1860		
2000			10.5		±5	2.01	16.90	0.4	2890	725	4775	2210×1920×1970		
2500			2.37			19.60	0.4	3460	910	5710	2260×1970×1995			
3150			2.80			23.00	0.4	4230	1350	7085	2320×2280×2360			
4000	10.5	6.3	3.45			27.30	0.4	5025	1675	8150	2460×2480×2475	1070/1070		
5000			4.10			31.30	0.4	6020	1940	9610	2575×2640×2590			
6300			4.89		35.0	0.4	8125	2550	12660	2640×2820×2810				
8000			6.52		40.5	0	9620	2780	15100	2710×2840×3040	1475/1475			
10000			7.70		47.7	0.55	11660	3070	17480	2850×2880×3265				

Note:

① The overall dimensions provided are for reference during model selection only. The final dimensions shall be subject to the product outline drawing.

Technical Data – 6 kV / 10 kV S13 Series Oil-Immersed Three-Phase Distribution Transformer

Rated Capacity (kVA)	Voltage Combination (kV)			Vector Group	Loss (kW)		No-load Current (%)	Short-circuit Impedance (%)	Weight (kg)			Overall Dimensions (mm) L × W × H	Track Gauge (Longitudinal / Transverse)
	HV	HV Tapping Range (%)	LV		No-load	Load			Active Part Weight	Oil Weight	Total Weight		
30	6	±2×2.5	0.4	Dyn11	0.080	0.630/0.600	1.2	4.0	140	60	280	700×545×855	550/400
50					0.100	0.910/0.870	1.04		210	80	370	750×645×915	550/400
63					0.110	1.090/1.040	0.96		240	90	440	790×645×915	550/400
80					0.130	1.310/1.250	0.96		260	90	480	805×706×930	550/550
100					0.150	1.580/1.500	0.88		350	110	600	850×685×1075	550/550
125					0.170	1.890/1.800	0.88		380	110	645	850×790×975	550/550
160					0.200	2.310/2.200	0.80		500	130	790	880×860×1050	550/550
200					0.240	2.730/2.600	0.80		540	160	870	1180×791×090	550/550
250					0.290	3.200/3.050	0.72		670	170	1050	1270×850×1140	660/660
315				Yzn11 Yyn0	0.340	3.830/3.650	0.72		750	180	1150	1320×900×1160	660/660
400					0.410	4.520/4.300	0.64		905	210	1370	1390×950×1215	660/660
500					0.480	5.410/5.150	0.64		1120	240	1680	1420×950×1280	660/660
630					0.570	6.200	0.48	4.5	1330	280	1960	1490×1000×1340	660/660
800					0.700	7.500	0.48		1400	300	2150	1640×1155×1350	820/820
1000					0.830	10.300	0.48		1510	350	2410	1660×1155×1380	820/820
1250					0.970	12.000	0.40		1720	440	2860	1720×1250×1480	820/820
1600					1.17	14.500	0.40		2285	590	3745	1840×1340×1560	820/820
2000					1.36	18.300	0.32	5.0	2554	730	4289	2010×1370×1660	820/820
2500					1.60	21.200	0.32		2995	810	5170	2020×1370×1850	1070/1070

Note:

- ① For three-phase transformers with a rated capacity of 500 kVA and below, the load loss above the diagonal line in the table applies to Dyn11 or Yzn11 vector groups, while the load loss below the diagonal line applies to the Yyn0 vector group.
- ② The overall dimensions provided are for reference during model selection only. The final dimensions shall be subject to the product outline drawing.

Technical Data – 6 kV / 10 kV S14 Series Oil-Immersed Three-Phase Distribution Transformer

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW)	No-load Current (%)	Short-circuit Impedance (%)
	HV (kV)	HV Tapping Range (%)	LV (kV)					
30	6	±2×2.5	0.4	Dyn11 Yzn11 Yyn0	0.080	0.505/0.480	1.2	4.0
50					0.100	0.730/0.695	1.04	
63					0.110	0.870/0.830	0.96	
80					0.130	1.05/1.00	0.96	
100					0.150	1.26/1.20	0.88	
125					0.170	1.51/1.44	0.88	
160					0.200	1.85/1.76	0.8	
200					0.240	2.18/2.08	0.8	
250					0.290	2.56/2.44	0.72	
315					0.340	3.06/2.92	0.72	
400					0.410	3.61/3.44	0.64	
500					0.480	4.33/4.12	0.64	
630	6.3	±5	0.4	Dyn11 Yyn0	0.570	4.96	0.48	4.5
800					0.700	6.00	0.48	
1000					0.830	8.24	0.48	
1250					0.970	9.60	0.4	
1600					1.17	11.6	0.4	
2000					1.55	14.6	0.32	5.0
2500					1.83	16.9	0.32	

Note:

- ① For three-phase transformers with a rated capacity of 500 kVA and below, the load loss above the diagonal line in the table applies to Dyn11 or Yzn11 vector groups, while the load loss below the diagonal line applies to the Yyn0 vector group.

Technical Data – 6 kV / 10 kV SZ11 Series Oil-Immersed Three-Phase Distribution Transformer (On-Load Tap Changer)

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW)	No-load Current (%)	Short-circuit Impedance (%)	
	HV (kV)	HV Tapping Range (%)	LV (kV)						
200	6	±4×2.5	0.4	Dyn11 Yyn0	0.38	2.90	1.0	4.0	
250					0.44	3.42	0.90		
315					0.53	4.10	0.90		
400					0.64	4.95	0.80		
500					6.3	0.76	5.89	0.80	
630					10	0.96	7.26	0.60	
800					10.5	1.12	8.89	0.60	4.5
1000					1.36	10.4	0.60		
1250	1.56	12.3	0.50						
1600	1.92	14.7	0.50						
2000	6	±4×2.5	0.4	Dyn11 Yyn0	2.27	18.6	0.40	5.0	
2500					2.68	21.6	0.40		

Technical Data – 6 kV / 10 kV SZ12 Series Oil-Immersed Three-Phase Distribution Transformer (On-Load Tap Changer)

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW)	No-load Current (%)	Short-circuit Impedance (%)	
	HV (kV)	HV Tapping Range (%)	LV (kV)						
200	6 6.3 10 10.5	±4×2.5	0.4	Dyn11 Yyn0	0.34	2.90	1.0	4.0	
250					0.39	3.42	0.90		
315					0.47	4.10	0.90		
400					0.57	4.95	0.80		
500					0.68	5.89	0.80		
630					0.86	7.26	0.60	4.5	
800					1.00	8.89	0.60		
1000					1.22	10.4	0.60		
1250					1.40	12.3	0.50		
1600					1.72	14.7	0.50		
2000					2.04	18.6	0.40		5.0
2500					2.41	21.6	0.40		

Technical Data – 6 kV / 10 kV SZ13 Series Oil-Immersed Three-Phase Distribution Transformer (On-Load Tap Changer)

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW)	No-load Current (%)	Short-circuit Impedance (%)		
	HV (kV)	HV Tapping Range (%)	LV (kV)							
200	6	±4×2.5	0.4	Dyn11 Yyn0	0.305	2.90	0.8	4.0		
250					0.350	3.42	0.72			
315					0.425	4.10	0.72			
400					0.510	4.95	0.64			
500					0.610	5.89	0.64			
630	6.3						0.770	7.26	0.48	4.5
800	10						0.895	8.89	0.48	
1000	10.5						1.09	10.4	0.48	
1250							1.25	12.3	0.4	
1600							1.54	14.7	0.4	
2000							1.82	18.6	0.32	
2500							2.14	21.6	0.32	

Technical Data – 6 kV / 10 kV S13 Series Grade 3 Energy-Efficient Oil-Immersed Three-Phase Distribution Transformer

Rated Capacity (kVA)	Voltage Combination (kV)			Vector Group	Loss (kW)		No-load Current (%)	Short-circuit Impedance (%)	Weight (kg)			Overall Dimensions (mm) L × W × H	Track Gauge (Longitudinal / Transverse)
	HV	HV Tapping Range (%)	LV		No-load	Load Loss			Active Part Weight	Oil Weight	Total Weight		
30	6 6.3 10 10.5	±2×2.5 ±5	0.4	Dyn11	0.080	0.630/0.600	1.2	4.0	140	70	320	745×555×830	550/400
50					0.100	0.910/0.870	1.04		205	75	390	775×595×890	550/400
63					0.110	1.090/1.040	0.96		240	85	450	790×640×930	550/400
80					0.130	1.310/1.250	0.96		290	95	520	857×675×950	550/550
100					0.150	1.580/1.500	0.88		340	100	576	845×720×950	550/550
125					0.170	1.890/1.800	0.88		390	110	650	850×770×990	550/550
160					0.200	2.310/2.200	0.8		470	150	760	1130×770×1013	550/550
200					0.240	2.730/2.600	0.8		540	135	861	1160×780×1160	550/550
250					0.290	3.200/3.050	0.72		670	160	1030	1220×810×1111	660/660
315				Yzn11 Yyn0	0.340	3.830/3.650	0.72	4.5	750	173	1160	1280×880×1150	660/660
400					0.410	4.520/4.300	0.64		910	210	1390	1320×900×1196	660/660
500					0.480	5.410/5.150	0.64		1070	230	1650	1420×980×1240	660/660
630					0.570	6.200	0.48		1310	290	1960	1510×1010×1310	660/660
800					0.700	7.500	0.48		1550	320	2320	1640×1120×1335	820/820
1000					0.830	10.300	0.48		1595	360	2550	1675×1145×1365	820/820
1250					0.970	12.000	0.4		2110	500	3370	1820×1260×1492	820/820
1600					1.17	14.500	0.4		2635	600	4190	1940×1300×1625	820/820
2000					1.36	18.300	0.32	5.0	2700	755	4720	2000×1345×1700	820/820
2500					1.60	21.200	0.32		3240	835	5460	2030×1360×1900	1070/1070

Notes:

- ① For three-phase transformers with a rated capacity of 500 kVA and below, the load loss above the diagonal line in the table applies to Dyn11 or Yzn11 vector groups, while the load loss below the diagonal line applies to the Yyn0 vector group.
- ② The load loss values comply with the requirements for Grade 3 energy efficiency specified in Table 1 of GB20052-2020.
- ③ The overall dimensions provided are for reference during model selection only. The final dimensions shall be subject to the product outline drawing.

Technical Data – 6 kV / 10 kV S20 Series Grade 2 Energy-Efficient Oil-Immersed Three-Phase Distribution Transformer

Rated Capacity (kVA)	Voltage Combination (kV)			Vector Group	Loss (kW)		No-load Current (%)	Short-circuit Impedance (%)	Weight (kg)			Overall Dimensions (mm) L × W × H	Track Gauge (Longitudinal / Transverse)
	HV	HV Tapping Range (%)	LV		No-load	Load Loss			Active Part Weight	Oil Weight	Total Weight		
30	6 6.3 10 10.5	±2×2.5 ±5	0.4	Dyn11	0.070	0.505/0.480	1.2	4.0	180	70	370	780 ×355 ×860	550/400
50					0.090	0.730/0.695	1.04		288	85	510	860 ×365 ×940	550/400
63					0.100	0.870/0.830	0.96		335	95	590	865 ×370 ×960	550/400
80					0.115	1.050/1.000	0.96		380	100	650	880 ×380 ×1015	550/550
100					0.135	1.265/1.200	0.88		440	115	735	920 ×580 ×1020	550/550
125					0.150	1.510/1.440	0.88		525	120	850	930 ×675 ×1080	550/550
160					0.180	1.850/1.760	0.8		630	150	1010	965 ×680 ×1160	550/550
200					0.215	2.185/2.080	0.8		760	165	1170	1010 ×750 ×1180	550/550
250					0.260	2.560/2.440	0.72		865	180	1290	1015 ×750 ×1190	660/660
315				Yzn11 Yyn0	0.305	3.065/2.920	0.72	4.5	1050	210	1560	1095 ×780 ×1230	660/660
400					0.370	3.615/3.440	0.64		1100	230	1675	1100 ×900 ×1260	660/660
500					0.430	4.330/4.120	0.64		1420	265	2090	1160 ×940 ×1310	660/660
630					0.510	4.960	0.48		1705	300	2450	1250 ×980 ×1345	660/660
800					0.630	6.000	0.48		1895	320	2700	1260 ×990 ×1360	820/820
1000					0.745	8.240	0.48		2080	360	3045	1615 ×1095 ×1450	820/820
1250					0.870	9.600	0.4		2550	470	3790	1705 ×1100 ×1520	820/820
1600					1.050	11.600	0.4		2910	575	4340	1800 ×1145 ×1700	820/820
2000					1.225	14.640	0.32	5.0	3525	595	5000	1925 ×1180 ×1750	820/820
2500					1.440	14.840	0.32		4860	690	6490	1945 ×1230 ×1990	1070/1070

Notes:

- ① For three-phase transformers with a rated capacity of 500 kVA and below, the load loss above the diagonal line in the table applies to Dyn11 or Yzn11 vector groups, while the load loss below the diagonal line applies to the Yyn0 vector group.
- ② The load loss values comply with the requirements for Grade 3 energy efficiency specified in Table 1 of GB20052-2020.
- ③ The overall dimensions provided are for reference during model selection only. The final dimensions shall be subject to the product outline drawing.

Technical Data – 6 kV / 10 kV S22 Series Grade 1 Energy-Efficient Oil-Immersed Three-Phase Distribution Transformer

Rated Capacity (kVA)	Voltage Combination (kV)			Vector Group	Loss (kW)		No-load Current (%)	Short-circuit Impedance (%)	Weight (kg)			Overall Dimensions (mm) L × W × H	Track Gauge (Longitudinal / Transverse)
	HV	HV Tapping Range (%)	LV		No-load	Load Loss			Active Part Weight	Oil Weight	Total Weight		
30	6	±2×2.5	0.4	Dyn11	0.065	0.455/0.430	1.2	4.0	196	65	385	790 ×345 ×870	550/400
50					0.080	0.655/0.625	1.04		320	85	560	845 ×370 ×960	550/400
63					0.090	0.785/0.745	0.96		365	90	600	865 ×380 ×1000	550/400
80					0.105	0.945/0.900	0.96		430	100	685	895 ×390 ×1035	550/550
100					0.120	1.140/1.080	0.88		520	115	810	925 ×515 ×1045	550/550
125					0.135	1.360/1.295	0.88		590	120	900	945 ×565 ×1085	550/550
160					0.160	1.665/1.585	0.8		715	150	1075	985 ×570 ×1120	550/550
200					0.190	1.970/1.870	0.8		895	160	1300	1015 ×605 ×1150	550/550
250					0.230	2.300/2.195	0.72	4.5	985	180	1405	1030 ×640 ×1200	660/660
315					0.270	2.760/2.630	0.72		1200	215	1725	1120 ×750 ×1245	660/660
400				Yyn0	0.330	3.250/3.095	0.64		1280	220	1845	1150 ×825 ×1300	660/660
500					0.385	3.900/3.710	0.64		1545	240	2150	1205 ×845 ×1400	660/660
630				Yyn0	0.460	4.460	0.48		1890	270	2580	1275 ×900 ×1500	660/660
800					0.560	5.400	0.48		2180	335	2990	1365 ×950 ×1520	820/820
1000					0.665	7.415	0.48		2260	400	3255	1430 ×1050 ×1550	820/820
1250					0.780	8.640	0.4		2890	470	4060	1480 ×1075 ×1590	820/820
1600				Yyn0	0.940	10.440	0.4	5.0	3260	510	4600	1520 ×1115 ×1725	820/820
2000					1.085	13.180	0.32		4070	650	5600	1565 ×1235 ×1830	820/820
2500					1.280	13.360	0.32		5615	670	7195	1680 ×1290 ×2110	1070/1070

Notes:

- ① For three-phase transformers with a rated capacity of 500 kVA and below, the load loss above the diagonal line in the table applies to Dyn11 or Yzn11 vector groups, while the load loss below the diagonal line applies to the Yyn0 vector group.
- ② The load loss values comply with the requirements for Grade 1 energy efficiency specified in Table 1 of GB20052-2020.
- ③ The overall dimensions provided are for reference during model selection only. The final dimensions shall be subject to the product outline drawing.

35kV

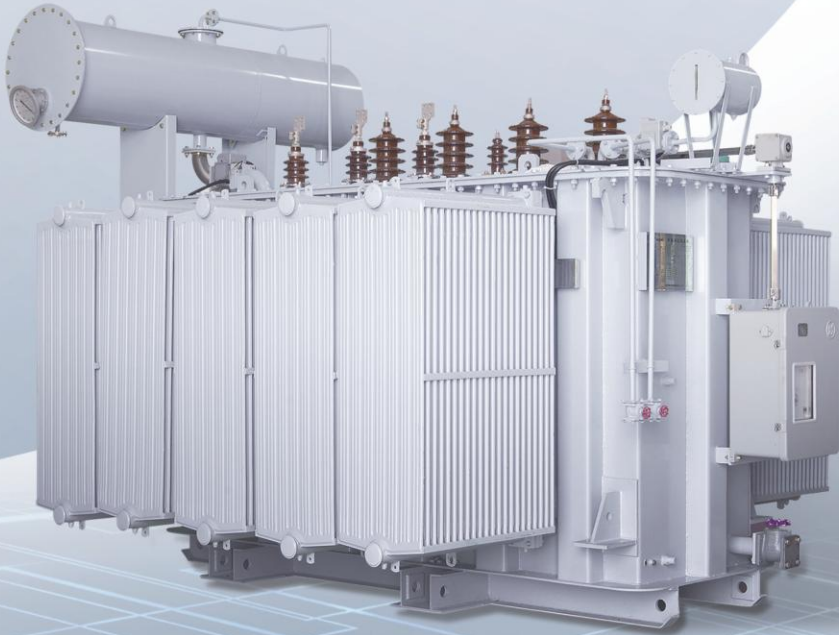
Oil-Immersed Power Transformer

High Sealing Performance

Energy Saving & Reduced Loss

Low Noise

Compact Structure



Technical Data – 35 kV S11 Series Oil-Immersed Three-Phase Distribution Transformer

Rated Capacity (kVA)	Voltage Combination (kV)			Vector Group	Loss (kW)		No-load Current (%)	Short-circuit Impedance (%)	Weight (kg)			Overall Dimensions (mm) L × W × H	Track Gauge (Longitudinal / Transverse)
	HV	HV Tapping Range (%)	LV		No-load	Load Loss			Active Part Weight	Oil Weight	Total Weight		
30	35	±2×2.5	0.4	Dyn11 Yyn0	0.14	0.89/0.84	1.7	4.0	165	230	580	1320×550×1550	550/400
50					0.16	1.20/1.14	1.3		230	265	730	1360×700×1680	
80					0.22	1.80/1.71	1.1		310	310	870	1395×730×1730	
100					0.23	2.01 /1.91	1.1		370	340	1000	1440×760×1810	
125					0.27	2.37/2.26	1.0		440	380	1120	1450×800×1940	660/660
160					0.28	2.82 /2.68	1.0		540	415	1360	1470×800×2910	
200					0.34	3.32/3.16	1.0		635	455	1540	1500×800×2050	
250					0.40	3.95 /3.76	0.95		725	490	1745	1530×830×2090	
315					0.48	4.75/4.53	0.95		825	525	1910	1550×870×2150	660/660
400					0.58	5.74/5.47	0.85		980	595	2220	1600×940×2200	
500					0.68	6.91/6.58	0.85		1210	680	2640	1750×1000×2280	
630					0.83	7.86	0.65		1110	800	3175	2130×950×2400	
800					0.98	9.40	0.65		1625	850	3595	2210×1075×2450	1070/1070
1000					1.15	11.50	0.65		1955	965	4260	2250×1090×2630	
1250					1.40	13.90	0.6		2250	1130	4835	2210×1740×2690	
1600					1.69	16.60	0.6		2890	1260	5995	2250×2145×2700	
2000					1.99	19.7	0.55		3070	1330	6445	2320×2170×2750	1070/1070
2500					2.36	23.2	0.55		3555	1390	7080	2340×2180×2510	

Notes:

- ① For transformers ≤500 kVA, load loss above the diagonal line applies to Dyn11, and load loss below the diagonal line applies to Yyn0.
- ② Dimensions are for reference only; final dimensions are subject to the approved outline drawing.

Technical Data – 35 kV S11 Series Oil-Immersed Three-Phase Distribution Transformer

Rated Capacity (kVA)	Voltage Combination (kV)			Vector Group	Loss (kW)		No-load Current (%)	Short-circuit Impedance (%)	Weight (kg)			Overall Dimensions (mm) L × W × H	Track Gauge (Longitudinal / Transverse)
	HV	HV Tapping Range (%)	LV		No-load	Load Loss			Active Part Weight	Oil Weight	Total Weight		
200	35	±2×2.5 ±5	3.15 6.3 10.5	Yd11	0.34	3.16	1.2	6.5	670	405	1445	1240×1270×1700	660/660
250					0.41	3.75	1.1		735	410	1550	1290×1280×1810	
315					0.49	4.53	1.1		910	485	1855	1300×1350×1960	
400					0.58	5.47	1.0		1015	585	2000	2020×940×1990	
500					0.69	6.58	1.0		1225	675	2460	2150×1000×2040	820/820
630					0.83	7.86	0.65		1335	695	2665	2260×1060×2050	
800					0.98	9.40	0.65		1695	825	3355	2330×1080×2130	
1000					1.15	11.50	0.65		1975	920	3785	2390×1100×2190	
1250					1.40	13.90	0.55		2155	990	4250	2450×1210×2210	1070/1070
1600					1.69	16.60	0.45		2505	1120	4995	2475×1230×2420	
2000					2.17	18.30	0.45		2815	1155	5460	2380×2010×2430	
2500					2.56	19.60	0.45		3730	1370	6305	2460×2150×2520	
3150	35				3.04	23.00	0.45	7.0	4165	1650	8360	2550×2220×2540	
4000					3.62	27.30	0.45		5160	1970	9350	2670×2390×2630	
5000					4.32	31.30	0.45		6130	2215	10770	2870×2450×2930	
6300					5.24	35.00	0.45		8120	2705	13885	3100×2580×3070	
8000	35 38.5	±2×2.5	3.15 3.3 6.3 6.6 10.5	Ynd11	7.20	38.40	0.35	8.0	9760	2915	15510	3250×2680×3270	1475/1475
10000					8.70	45.30	0.35		11025	3225	18150	3320×2720×3350	
12500					10.00	53.80	0.30		14170	4085	21760	3410×2950×3530	
16000					12.10	65.80	0.30		17735	4710	26350	3520×3180×3690	
20000					14.40	79.50	0.30		20430	5755	32560	3730×3560×4110	
25000					17.00	94.00	0.25	10.0	25265	7010	38885	4110×4120×4340	2040/2040
31500					20.20	112.0	0.25		30360	8515	46090	4760×4570×4510	

Notes:

- ① For transformers with LV = 10.5 kV, the Dyn11 vector group is available.
- ② Dimensions are for reference only; final dimensions are subject to the approved outline drawing.

Technical Data – 35 kV S11 Series Oil-Immersed Three-Phase Distribution Transformer

Rated Capacity (kVA)	Voltage Combination (kV)			Vector Group	Loss (kW)		No-load Current (%)	Short-circuit Impedance (%)	Weight (kg)			Overall Dimensions (mm) L × W × H	Track Gauge (Longitudinal / Transverse)
	HV	HV Tapping Range (%)	LV		No-load	Load Loss			Active Part Weight	Oil Weight	Total Weight		
800	35	±3×2.5	6.3	Yd11	1.25	9.88	0.9	6.5	1735	995	3625	2790×1220×2130	820/820
1000					1.50	12.16	0.9		2015	1105	4055	2830×1240×2150	
1250					1.77	14.63	0.81		2190	1155	4580	2870×1310×2210	
1600					2.16	17.48	0.77		2535	1295	5245	2875×1310×2380	
2000					2.30	19.20	0.50		2855	1345	5935	2980×2880×2380	
2500					2.72	20.60	0.50		3815	1575	6745	3060×2190×2490	
3150	35		6.3	Ynd11	3.23	24.70	0.50	7.0	4235	1860	8780	3180×2240×2510	1070/1070
4000					3.87	29.10	0.50		5230	2260	9820	3270×2410×2600	
5000					4.64	34.20	0.50		6195	2545	11510	3490×2480×2840	
6300					5.63	36.70	0.50	7.5 / 8.0	8315	3095	14805	3710×2600×3005	1475/1475
8000					7.87	40.60	0.40		9870	3480	16590	3850×2680×3230	
10000					9.28	48.00	0.40		11025	4160	19930	3960×2750×3310	
12500					10.0	56.80	0.35		14270	5265	24295	4035×2980×3530	
16000					13.1	70.30	0.35		17780	6280	28720	4140×3200×3660	
20000					15.5	82.70	0.30	10.0	20205	7415	37380	4070×3580×4170	2040/2040
25000					18.3	97.8	0.30		24950	9030	43425	4710×4120×4310	
31500					21.8	116.00	0.30		29820	11025	51555	5360×4570×4450	

- Notes:
- ① For transformers with LV = 10.5 kV, the Dyn11 vector group is available.
 - ② The maximum current tap is at the -7.5% position.
 - ③ Dimensions are for reference only; final dimensions are subject to the approved outline drawing.

Three-Dimensional Wound Core Transformer

Optimized Magnetic Circuit

Energy Saving & Reduced Loss

Low Noise

Strong Overload Capability

Compact Structure





1 Overview

1.1 Product Features

The three-dimensional wound core transformer is a high-efficiency and energy-saving power transformer. It innovatively replaces the traditional laminated core structure and three-phase layout used in conventional transformers, resulting in optimized performance. With a fully symmetrical three-phase magnetic circuit, the transformer achieves significant energy-saving performance, greatly reduced noise, improved heat dissipation capability, stronger overload capacity, and a compact structure.

1.2 Magnetic Circuit Optimization

- ① The three-dimensional wound core has no joints, ensuring uniform magnetic distribution throughout the magnetic circuit without obvious high-flux regions or sudden changes in magnetic flux density caused by joints.
- ② The magnetic flux direction is fully consistent with the grain orientation of the silicon steel sheet.
- ③ The three-phase magnetic path lengths are completely equal, achieving the shortest possible magnetic circuit.
- ④ The three-phase magnetic circuits are perfectly symmetrical, resulting in fully balanced three-phase no-load currents.

1.3 Low Loss and Significant Energy-Saving Effect

- ① The magnetic flux direction of the three-dimensional wound core is completely consistent with the rolling direction of the silicon steel sheet. In addition, the core layers are continuously wound without overlapping joints, resulting in uniform magnetic flux distribution without obvious high-flux regions or sudden flux density changes. Under the same material conditions, compared with traditional laminated cores, the core process coefficient is reduced from 1.3–1.5 to about 1.05, which alone can reduce core loss by 10–20%.
- ② Due to the special three-dimensional structure, the core weight is reduced by about 25% compared with traditional laminated cores, and the corner weight accounts for about 6% of the total core weight.
- ③ After shearing, the silicon steel sheets undergo magnetic property annealing treatment. The three-dimensional wound core is subjected to high-temperature (about 800°C) vacuum annealing, which eliminates internal stress and refines the magnetic domains of the silicon steel sheet, significantly improving its magnetic properties.
- ④ Test results show that the no-load loss of the three-dimensional wound core transformer can be reduced by 25–35% compared with national standards, and the no-load current can be reduced by up to 92%.

1.4 Low Noise

The three-dimensional wound core is manufactured by continuously winding silicon steel strips on a dedicated core winding machine, forming a compact structure without joints. This eliminates noise caused by discontinuous magnetic circuits commonly found in laminated cores.

At the same time, the three-phase magnetic circuit is symmetrical and the operating magnetic density is properly designed, which significantly reduces transformer noise.

According to tests, the noise level of the transformer can be as low as 47 dB, which is 19 dB lower than the standard limit of 66 dB, approaching environmental silence standards and making it particularly suitable for indoor installations and residential areas.

1.5 Strong Overload Capacity

- ① The transformer itself generates very little heat. The no-load loss and no-load current of the wound core transformer are extremely low, resulting in minimal heat generation during operation.
- ② The three-phase windings are arranged in a “品”-shaped configuration. A natural ventilation channel—known as the chimney effect—is formed in the center of the windings. As the iron core heats up to approximately 30–40°C, air is heated and rises naturally. Cooler air is drawn in from the lower central channel, and heat is dissipated outward from the iron core, enabling natural circulation and rapid heat removal from the transformer.

1.6 Compact Structure and Small Footprint

The special three-dimensional wound core structure results in a compact and well-organized layout. The plan area of the transformer body is reduced by about 10–15% compared with conventional transformers.

The overall height is reduced by approximately 10–20%.

When installed in a box-type substation, the enclosure volume can be reduced by about one quarter.



2 Main Technical Parameters

Main Technical Parameters of 6 kV / 10 kV S13-M.RL Series Grade 3 Energy-Efficient Three-Dimensional Wound Core Off-Circuit Tap-Changing Transformers

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (W)	Load Loss (W)	Short-circuit Impedance (%)	No-load Current (%)
	HV (kV)	HV Tapping Range (%)	LV (kV)					
30	6 6.3 10 10.5 11	±2×2.5 ±5	0.4	Dyn11 Yzn11 Yyn0	80	630/600	4	0.3
50					100	910/870	4	0.24
63					110	1090/1040	4	0.23
80					130	1310/1250	4	0.22
100					150	1580/1500	4	0.21
125					170	1890/1800	4	0.2
160					200	2310/2200	4	0.19
200					240	2730/2600	4	0.18
250					290	3200/3050	4	0.17
315					340	3830/3650	4	0.16
400					410	4520/4300	4	0.16
500				Dyn11 Yyn0	480	5410/5150	4	0.16
630					570	6200	4.5	0.15
800					700	7500	4.5	0.15
1000					830	10300	4.5	0.14
1250					970	12000	4.5	0.13
1600					1170	14500	4.5	

- Notes:
- ① For transformers ≤500 kVA, load loss above the diagonal line applies to Dyn11/Yzn11, and load loss below the diagonal line applies to Yyn0.
 - ② LV = 0.69 kV is available upon request.
 - ③ Low-loss design is available upon request.

Main Technical Parameters of 6 kV / 10 kV S20-M.RL Series Grade 2 Energy-Efficient Three-Dimensional Wound Core Off-Circuit Tap-Changing Transformers

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (W)	Load Loss (W)	Short-circuit Impedance (%)	No-load Current (%)
	HV (kV)	HV Tapping Range (%)	LV (kV)					
30	6 6.3 10 10.5 11	±2×2.5 ±5	0.4	Dyn11 Yzn11 Yyn0	70	505/480	4	0.3
50					90	730/695	4	0.24
63					100	870/830	4	0.23
80					115	1050/1000	4	0.22
100					135	1265/1200	4	0.21
125					150	1510/1440	4	0.2
160					180	1850/1760	4	0.19
200					215	2185/2080	4	0.18
250					260	2560/2440	4	0.17
315					305	3065/2920	4	0.16
400					370	3615/3440	4	0.16
500				Dyn11 Yyn0	430	4330/4120	4	0.16
630					510	4960	4.5	0.15
800					630	6000	4.5	0.15
1000					745	8240	4.5	0.14
1250					870	9600	4.5	0.13
1600					1050	11600	4.5	0.12

- Notes:
- ① For transformers ≤500 kVA, load loss above the diagonal line applies to Dyn11/Yzn11, and load loss below the diagonal line applies to Yyn0.
 - ② LV = 0.69 kV is available upon request.
 - ③ Low-loss design is available upon request.



Main Technical Parameters of 6 kV / 10 kV S22-M.RL Series Grade 1 Energy-Efficient Three-Dimensional Wound Core Off-Circuit Tap-Changing Transformers

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (W)	Load Loss (W)	Short-circuit Impedance (%)	No-load Current (%)
	HV (kV)	HV Tapping Range (%)	LV (kV)					
30	6 6.3 10 10.5 11	±2×2.5 ±5	0.4	Dyn11 Yzn11 Yyn0	65	455/430	4	0.3
50					80	655/625	4	0.24
63					90	785/745	4	0.23
80					105	945/900	4	0.22
100					120	1140/1080	4	0.21
125					135	1360/1295	4	0.2
160					160	1665/1585	4	0.19
200					190	1970/1870	4	0.18
250					230	2300/2195	4	0.17
315					270	2760/2630	4	0.16
400					330	3250/3095	4	0.16
500					385	3900/3710	4	0.16
630					460	4460	4.5	0.15
800					560	5400	4.5	0.15
1000					665	7415	4.5	0.14
1250					780	8640	4.5	0.13
1600					940	10440	4.5	0.12

- Notes:
- ① For transformers ≤500 kVA, load loss above the diagonal line applies to Dyn11/Yzn11, and load loss below the diagonal line applies to Yyn0.
 - ② LV = 0.69 kV is available upon request.
 - ③ Low-loss design is available upon request.

6-10kV SCB

Resin-Insulated Dry-Type Transformer

-  Optimized Magnetic Circuit
-  Energy Saving & Reduced Loss
-  Low Noise
-  Strong Overload Capability
-  Compact Structure



1 Overview

1.1 Product Features

The resin-insulated dry-type transformer is developed by our company based on advanced international technologies. We have independently developed the SC(B)10, SC(B)11, SC(B)12, SC(B)13 and SC(B)14 series.

The transformers adopt epoxy resin vacuum casting technology, featuring flame retardancy, explosion-proof performance, maintenance-free operation, and environmental friendliness. They are compact in size and can be installed directly in load centers.

Through optimized structural design and resin casting technology, the transformer has reduced partial discharge, low noise, and strong heat dissipation capability. Under forced air cooling conditions, it can operate continuously at 140% of rated load.

The transformer is equipped with an intelligent temperature controller, providing functions such as fault alarm, over-temperature alarm, and tripping protection. It can also be connected to computers for remote monitoring and control.

Due to these advantages, the transformer is widely used in urban power distribution systems, including hotels, airports, high-rise buildings, commercial centers, residential areas, as well as demanding environments such as subways, power plants, ships, and offshore drilling platforms.

1.2 Core

The transformer core is made of high-quality imported cold-rolled silicon steel sheets with a fully mitered joint structure. The core columns are bound with glass fiber reinforced epoxy bands without adhesives.

The core surface is sealed with insulating resin coating, effectively preventing moisture and corrosion while reducing no-load loss, no-load current, and core noise. Special surface treatment is applied to structural components and fasteners, improving the overall appearance and quality of the product.

1.3 High-Voltage Winding

The high-voltage winding adopts epoxy resin vacuum pressure casting with quartz filler, which greatly reduces partial discharge and enhances the electrical strength of the winding.

The inner and outer surfaces of the winding are reinforced with glass fiber mesh plates, improving mechanical strength and short-circuit resistance. The winding structure ensures that the coil will not crack during operation.

1.4 Low-Voltage Winding

The low-voltage winding adopts a foil-wound structure, effectively eliminating axial spiral stress during winding and improving current balance.

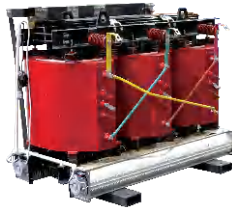
At the same time, the winding is designed with axial air-cooling channels, enhancing heat dissipation performance. The winding layers use DMD epoxy resin prepreg insulation, forming a solid structure after curing.

1.5 Manufacturing Process

The windings are manufactured using high-precision winding machines, and the low-voltage winding adopts a foil-winding structure.

For transformers with larger capacities, ventilation channels are designed inside the windings. After winding, the coils undergo vacuum drying, followed by vacuum casting and curing strictly according to process requirements. All production processes are carefully monitored and adjusted when necessary.

The precise casting process ensures that the windings are free from bubbles and voids, resulting in high product quality.



1.6 Temperature Control and Air Cooling System

The transformer adopts a top-mounted cross-flow cooling fan, featuring low noise, high airflow, and an aesthetically pleasing design. This enhances the overload capability of the transformer.

An intelligent temperature controller is used for temperature monitoring, significantly improving the operational safety and reliability of the transformer.

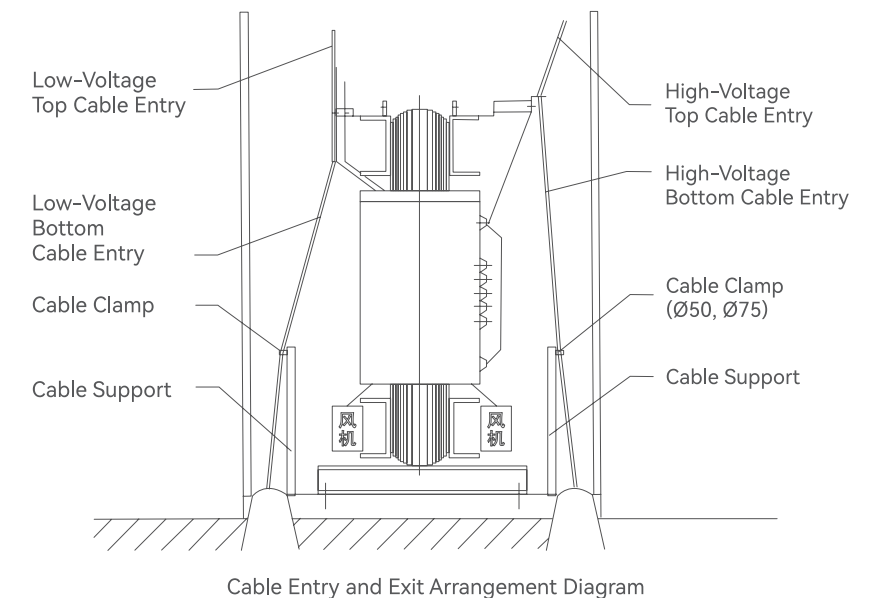
1.7 Protective Enclosure and Busbar Arrangement

The protective enclosure provides additional safety protection for the transformer, with protection ratings such as IP20 and IP23 available. The enclosure can be manufactured from cold-rolled steel plate or stainless steel, according to user requirements.

The low-voltage outlet is typically connected through a standard busbar arrangement, and both top and side cable outlet configurations are available. Customized outlet arrangements can also be designed according to customer requirements.

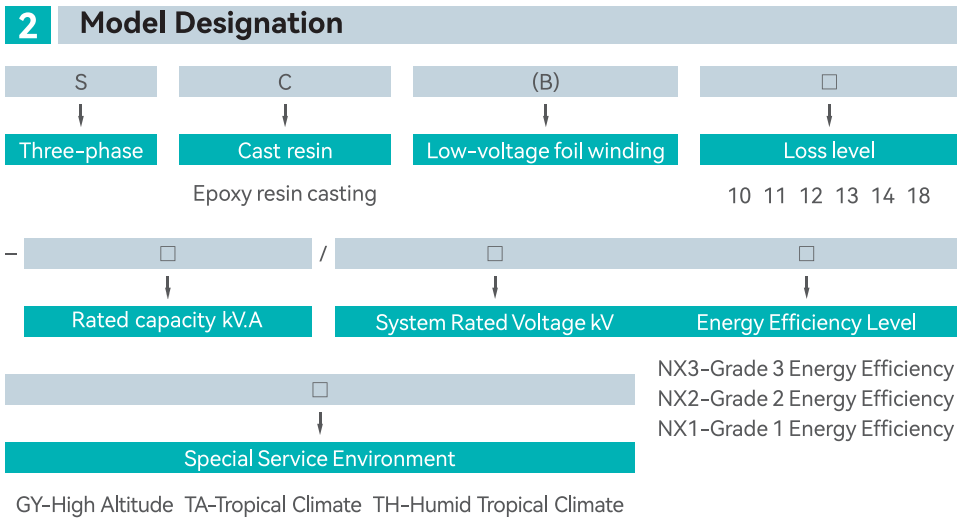
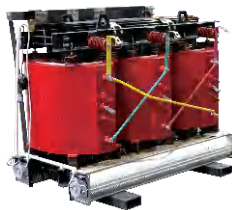
1.8 Transformer Cable Outlet Arrangement

Different cable outlet configurations can be provided according to various installation and connection requirements, including standard top cable outlet, standard side cable outlet, and other customized outlet arrangements designed according to user requirements.



1.9 Applicable Standards

GB/T10228	GB/T1094.1	GB/T1094.11	GB/T1094.12
GB/T4208	JB/T10088	GB20052	



3

Technical Data

Technical Data of SC(B)10 Series 6 kV / 10 kV Off-Circuit Tap-Changing Dry-Type Transformers

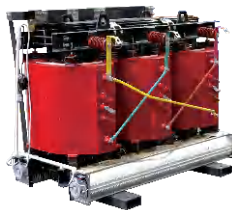
Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW) at Different Insulation Thermal Classes			No-load Current (%)	Short-circuit Impedance (%)
	HV	HV Tapping Range (%)	LV			Class B (130°C / 100°C)	Class F (155°C / 120°C)	Class H (180°C / 145°C)		
30	6 6.3 6.6 10 10.5 11	±2×2.5 ±5	0.4	Dyn11 Yyn0	0.19	0.670	0.710	0.760	2.0	4
50					0.27	0.940	1.00	1.07	2.0	
80					0.37	1.29	1.38	1.48	1.5	
100					0.40	1.48	1.57	1.69	1.5	
125					0.47	1.74	1.85	1.98	1.3	6
160					0.54	2.00	2.13	2.28	1.3	
200					0.62	2.37	2.53	2.71	1.1	
250					0.72	2.59	2.76	2.69	1.1	
315					0.88	3.27	3.47	3.73	1.0	8
400					0.98	3.75	3.99	4.28	1.0	
500					1.16	4.59	4.88	5.23	1.0	
630					1.34	5.53	5.88	6.29	0.85	
630					1.30	5.61	5.96	6.40	0.85	6
800					1.52	6.55	6.96	7.46	0.85	
1000					1.77	7.65	8.13	8.76	0.85	
1250					2.09	9.10	9.69	10.3	0.85	
1600					2.45	11.0	11.7	12.5	0.85	8
2000					3.05	13.6	14.4	15.5	0.7	
2500					3.60	16.1	17.1	18.4	0.7	
1600					2.45	12.2	12.9	13.9	0.85	
2000					3.05	15.0	15.9	17.1	0.7	8
2500					3.60	17.7	18.8	20.2	0.7	

Note:
Load loss values are given for different insulation systems at the reference temperatures specified in GB/T1094.11. Values for other insulation systems can be calculated from the Class F (155°C) reference data.

Technical Data of SC(B)11 Series 6 kV / 10 kV Off-Circuit Tap-Changing Dry-Type Transformers

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW) at Different Insulation Thermal Classes			No-load Current (%)	Short-circuit Impedance (%)
	HV	HV Tapping Range (%)	LV			Class B (130°C / 100°C)	Class F (155°C / 120°C)	Class H (180°C / 145°C)		
30	6 6.3 6.6 10 10.5 11	±2×2.5 ±5	0.4	Dyn11 Yyn0	0.17	0.670	0.710	0.760	2.0	4
50					0.24	0.940	1.00	1.07	2.0	
80					0.33	1.29	1.38	1.48	1.5	
100					0.36	1.48	1.57	1.69	1.5	
125					0.42	1.74	1.85	1.98	1.3	6
160					0.48	2.00	2.13	2.28	1.3	
200					0.55	2.37	2.53	2.71	1.1	
250					0.64	2.59	2.76	2.69	1.1	
315					0.79	3.27	3.47	3.73	1.0	8
400					0.88	3.75	3.99	4.28	1.0	
500					1.04	4.59	4.88	5.23	1.0	
630					1.20	5.53	5.88	6.29	0.85	
630					1.17	5.61	5.96	6.40	0.85	6
800					1.36	6.55	6.96	7.46	0.85	
1000					1.59	7.65	8.13	8.76	0.85	
1250					1.88	9.10	9.69	10.3	0.85	
1600					2.20	11.0	11.7	12.5	0.85	8
2000					2.74	13.6	14.4	15.5	0.7	
2500					3.24	16.1	17.1	18.4	0.7	
1600					2.20	12.2	12.9	13.9	0.85	
2000					2.74	15.0	15.9	17.1	0.7	8
2500					3.24	17.7	18.8	20.2	0.7	

Note:
Load loss values are given for different insulation systems at the reference temperatures specified in GB/T1094.11. Values for other insulation systems can be calculated from the Class F (155°C) reference data.



Technical Data of SC(B)12 Series 6 kV / 10 kV Off-Circuit Tap-Changing Dry-Type Transformers

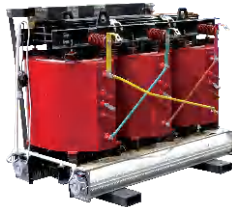
Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW) at Different Insulation Thermal Classes			No-load Current (%)	Short-circuit Impedance (%)
	HV	HV Tapping Range (%)	LV			Class B (130°C / 100°C)	Class F (155°C / 120°C)	Class H (180°C / 145°C)		
30	6	±2×2.5 ±5	0.4	Dyn11 Yyn0	0.150	0.670	0.710	0.76	2.0	4
50					0.215	0.940	1.00	1.07	2.0	
80					0.295	1.29	1.38	1.48	1.5	
100					0.320	1.48	1.57	1.69	1.5	
125					0.375	1.74	1.85	1.98	1.3	
160					0.430	2.00	2.13	2.28	1.3	
200					0.495	2.37	2.53	2.71	1.1	6
250					0.575	2.59	2.76	2.96	0.9	
315					0.705	3.27	3.47	3.73	0.8	
400					0.785	3.75	3.99	4.28	0.8	
500					0.930	4.59	4.88	5.23	0.8	
630					1.07	5.53	5.88	6.29	0.7	8
630					1.04	5.61	5.96	6.40	0.7	
800					1.21	6.55	6.96	7.46	0.7	
1000					1.41	7.65	8.13	8.76	0.7	
1250					1.67	9.10	9.69	10.3	0.7	
1600					1.96	11.0	11.7	12.5	0.7	
2000					2.44	13.6	14.4	15.5	0.6	
2500					2.88	16.1	17.1	18.4	0.6	
1600	6.3 6.6 10 10.5 11	±2×2.5 ±5	0.4	Dyn11 Yyn0	1.96	12.2	12.9	13.9	0.7	8
2000					2.44	15.0	15.9	17.1	0.6	
2500					2.88	17.7	18.8	20.2	0.6	

Note:
Load loss values are given for different insulation systems at the reference temperatures specified in GB/T1094.11. Values for other insulation systems may be calculated from the Class F (155°C) reference data.

Technical Data – SC(B)13 Series 6 kV / 10 kV Dry-Type Transformer

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW) at Different Insulation Thermal Classes			No-load Current (%)	Short-circuit Impedance (%)
	HV	HV Tapping Range (%)	LV			Class B (130°C / 100°C)	Class F (155°C / 120°C)	Class H (180°C / 145°C)		
30	6	±2×2.5 ±5	0.4	Dyn11 Yyn0	0.135	0.605	0.640	0.685	2.0	4
50					0.195	0.845	0.900	0.965	2.0	
80					0.265	1.16	1.24	1.33	1.5	
100					0.290	1.33	1.41	1.52	1.5	
125					0.340	1.56	1.66	1.78	1.3	
160					0.385	1.80	1.91	2.05	1.3	6
200					0.445	2.13	2.27	2.44	1.1	
250					0.515	2.33	2.48	2.66	0.9	
315					0.635	2.94	3.12	3.35	0.8	
400					0.705	3.37	3.59	3.85	0.8	
500					0.835	4.13	4.39	4.70	0.8	8
630					0.965	4.97	5.29	5.66	0.7	
630					0.935	5.05	5.36	5.76	0.7	
800					1.09	5.89	6.26	6.71	0.7	
1000					1.27	6.88	7.31	7.88	0.7	
1250					1.50	8.19	8.72	9.33	0.7	
1600					1.76	9.94	10.5	11.3	0.7	8
2000					2.19	12.2	13.0	14.0	0.6	
2500					2.59	14.5	15.4	16.6	0.6	
1600	6.3 6.6 10 10.5 11	±2×2.5 ±5	0.4	Dyn11 Yyn0	1.76	11.0	11.6	12.5	0.7	
2000					2.19	13.5	14.3	15.4	0.6	
2500					2.59	15.9	17.0	18.2	0.6	

Note:
Load loss values are given for different insulation systems at the reference temperatures specified in GB/T1094.11. Values for other insulation systems can be calculated from the Class F (155°C) reference data.



Technical Data – SC(B)12 Series Grade 3 Energy-Efficient 6 kV / 10 kV Dry-Type Transformer

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW) at Different Insulation Thermal Classes			No-load Current (%)	Short-circuit Impedance (%)
	HV	HV Tapping Range (%)	LV			Class B (130°C / 100°C)	Class F (155°C / 120°C)	Class H (180°C / 145°C)		
30	6	±2×2.5 ±5	0.4	Dyn11 Yyn0	0.150	0.670	0.710	0.760	2.0	4
50					0.215	0.940	1.000	1.070	2.0	
80					0.295	1.290	1.380	1.480	1.5	
100					0.320	1.480	1.570	1.690	1.5	
125					0.375	1.740	1.850	1.980	1.3	
160					0.430	2.000	2.130	2.280	1.3	
200					0.495	2.370	2.530	2.710	1.1	
250					0.575	2.590	2.760	2.960	0.9	
315					0.705	3.270	3.470	3.730	0.8	
400					0.785	3.750	3.990	4.280	0.8	
500					0.930	4.590	4.880	5.230	0.8	
630					1.070	5.530	5.880	6.290	0.7	
630					1.040	5.610	5.960	6.400	0.7	6
800					1.215	6.550	6.960	7.460	0.7	
1000					1.415	7.650	8.130	8.760	0.7	
1250					1.670	9.100	9.690	10.370	0.7	
1600					1.960	11.050	11.730	12.580	0.7	
2000	10.5 11				2.440	13.600	14.450	15.560	0.6	
2500					2.880	16.150	17.170	18.450	0.6	

Notes:

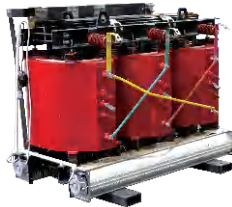
- ① Load loss values are given for different insulation systems at the reference temperatures specified in GB/T1094.11. Values for other insulation systems may be calculated from the Class F (155°C) reference data.
- ② No-load loss values comply with GB20052-2020 Grade 3 energy efficiency requirements.

Technical Data – SC(B)14 Series Grade 2 Energy-Efficient 6 kV / 10 kV Dry-Type Transformer

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW) at Different Insulation Thermal Classes			No-load Current (%)	Short-circuit Impedance (%)
	HV	HV Tapping Range (%)	LV			Class B (130°C / 100°C)	Class F (155°C / 120°C)	Class H (180°C / 145°C)		
30	6	±2×2.5 ±5	0.4	Dyn11 Yyn0	0.13	0.605	0.640	0.685	2.0	4
50					0.185	0.845	0.900	0.965	2.0	
80					0.250	1.160	1.240	1.330	1.5	
100					0.270	1.330	1.415	1.520	1.5	
125					0.320	1.565	1.665	1.780	1.3	
160					0.365	1.800	1.915	2.050	1.3	
200					0.420	2.135	2.275	2.440	1.1	
250					0.490	2.330	2.485	2.665	0.9	
315					0.600	2.945	3.125	3.355	0.8	
400					0.665	3.375	3.590	3.850	0.8	
500					0.790	4.130	4.390	4.705	0.8	
630					0.910	4.975	5.290	5.660	0.7	
630					0.885	5.050	5.365	5.760	0.7	6
800					1.035	5.895	6.265	6.715	0.7	
1000					1.205	6.885	7.315	7.885	0.7	
1250					1.420	8.190	8.720	9.335	0.7	
1600					1.665	9.945	10.555	11.320	0.7	
2000	10.5 11				2.075	12.240	13.005	14.005	0.6	
2500					2.450	14.535	15.445	16.605	0.6	

Notes:

- ① Load loss values are given for different insulation systems at the reference temperatures specified in GB/T1094.11. Values for other insulation systems may be calculated from the Class F (155°C) reference data.
- ② No-load loss values comply with GB20052-2020 Grade 2 energy efficiency requirements.



Technical Data – SC(B)18 Series Grade 1 Energy-Efficient 6 kV / 10 kV Dry-Type Transformer

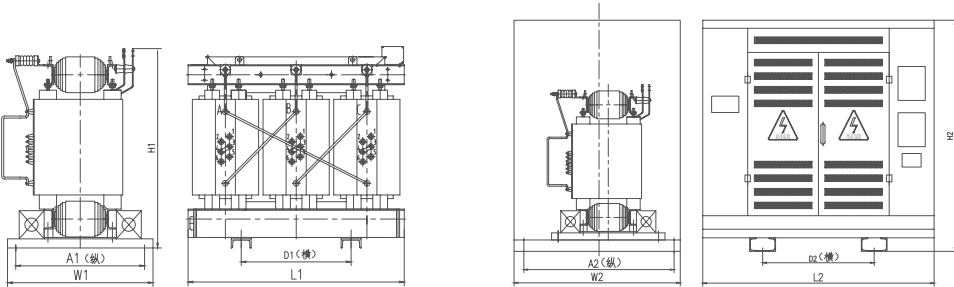
Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW) at Different Insulation Thermal Classes			No-load Current (%)	Short-circuit Impedance (%)
	HV	HV Tapping Range (%)	LV			Class B (130°C / 100°C)	Class F (155°C / 120°C)	Class H (180°C / 145°C)		
30	6	±2×2.5 ±5	0.4	Dyn11 Yyn0	0.105	0.605	0.640	0.685	2.0	4
50					0.155	0.845	0.900	0.965	2.0	
80					0.210	1.160	1.240	1.330	1.5	
100					0.230	1.330	1.415	1.520	1.5	
125					0.270	1.565	1.665	1.780	1.3	
160					0.310	1.800	1.915	2.050	1.3	
200					0.360	2.135	2.275	2.440	1.1	
250					0.415	2.330	2.485	2.665	0.9	
315					0.510	2.945	3.125	3.355	0.8	
400					0.570	3.375	3.590	3.850	0.8	
500					0.670	4.130	4.390	4.705	0.8	6
630					0.775	4.975	5.290	5.660	0.7	
630					0.750	5.050	5.365	5.760	0.7	
800					0.875	5.895	6.265	6.715	0.7	
1000					1.020	6.885	7.315	7.885	0.7	
1250					1.205	8.190	8.720	9.335	0.7	
1600					1.415	9.945	10.555	11.320	0.7	
2000					1.760	12.240	13.005	14.005	0.6	
2500					2.080	14.535	15.445	16.605	0.6	

Notes:

- ① Load loss values are given for different insulation systems at the reference temperatures specified in GB/T1094.11. Values for other insulation systems may be calculated from the Class F (155°C) reference data.
- ② No-load loss values comply with GB20052-2020 Grade 1 energy efficiency requirements.

4 Overall Dimensions

Overall Dimension Drawings of SC(B)10 / SC(B)11 Series Off-Circuit Tap-Changing Dry-Type Transformers



Overall Dimension Drawing

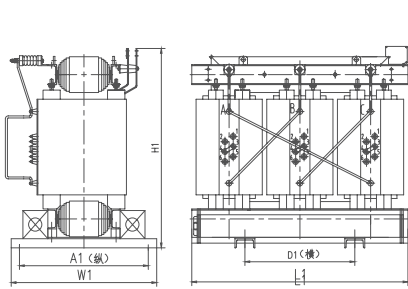
Overall Dimension Drawing with Enclosure

Rated Capacity (kVA)	Overall Dimensions (mm)					Overall Dimension with Enclosure(mm)				
	L1	W1	H1	D1	A1	L2	W2	H2	D2	A2
10	600	400	520	350	400	400	900	1150	400	800
20	600	400	520	350	400	400	900	1150	400	800
30	600	400	620	400	350	350	950	1200	400	850
50	630	450	660	400	350	350	950	1200	400	850
63	780	500	765	400	400	400	980	1300	400	880
80	780	500	765	400	400	400	1000	1300	400	900
100	890	650	830	550	550	550	1000	1300	550	900
125	910	650	850	550	550	550	1000	1400	550	900
160	950	750	965	550	660	660	1150	1450	550	1050
200	1000	750	1120	550	660	660	1150	1500	550	1050
250	1040	750	1155	660	660	660	1200	1550	660	1100
315	1080	750	1220	660	660	660	1200	1650	660	1100
400	1105	750	1225	660	660	660	1250	1800	660	1150
500	1150	900	1395	660	820	820	1250	1800	660	1150
630	1340	900	1330	820	820	820	1300	1700	820	1200
800	1400	900	1470	820	820	820	1350	1850	820	1250
1000	1460	900	1475	820	820	820	1400	1900	820	1300
1250	1485	900	1605	820	820	820	1400	1950	820	1300
1600	1580	1050	1680	950	950	950	1450	2050	950	1350
2000	1690	1050	1840	950	950	950	1550	2150	950	1450
2500	1765	1050	1885	1070	950	950	1600	2200	1070	1500
3150	1950	1170	1900	1070	1070	1070	1600	2250	1070	1500
4000	2030	1170	2000	1070	1070	1070	1600	2300	1070	1500

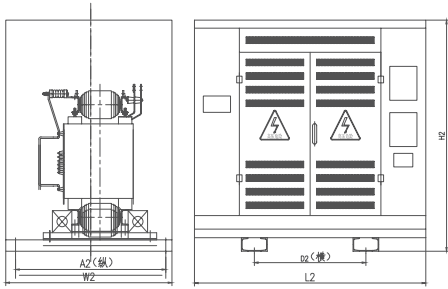
Notes:

- ① Dimensions are for reference only and may change due to product improvements. Custom dimensions are available upon request.
- ② For transformers ≤200 kVA, the enclosure is optional and not standard.

Outline Dimension Drawings of SC(B)12-SC(B)18 Series Dry-Type Transformers



SC(B)12-□/10-0.4
Outline Dimension Drawing



SC(B)12-□/10-0.4
Outline Dimension Drawing with Enclosure



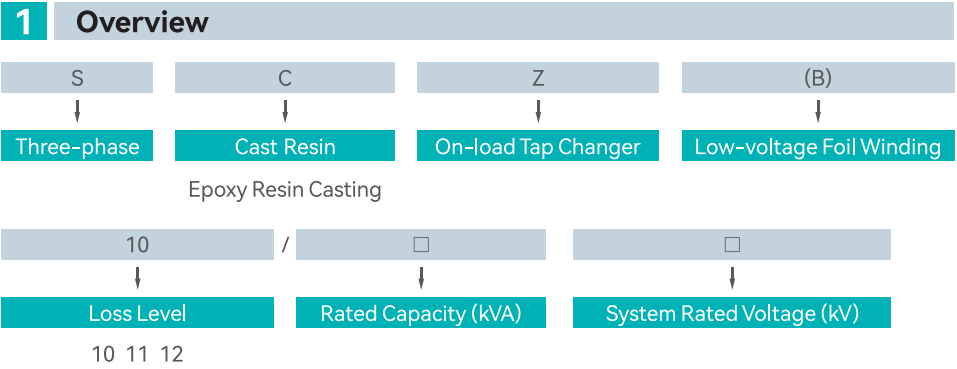
Rated Capacity (kVA)	Overall Dimensions (mm)					Overall Dimension with Enclosure(mm)				
	L1	W1	H1	D1	A1	L2	W2	H2	D2	A2
30	600	400	620	400	350	1050	950	1200	400	850
50	630	450	660	400	350	1050	950	1200	400	850
63	820	500	730	400	400	1050	980	1300	400	880
80	820	500	730	400	400	1050	1000	1300	400	900
100	840	650	770	550	550	1200	1000	1300	550	900
125	860	650	800	550	550	1200	1000	1400	550	900
160	900	750	870	550	660	1250	1150	1450	550	1050
200	940	750	950	550	660	1300	1150	1500	550	1050
250	1000	750	990	660	660	1400	1200	1550	660	1100
315	1040	750	1020	660	660	1400	1200	1650	660	1100
400	1080	750	1040	660	660	1500	1250	1800	660	1150
500	1130	900	1130	660	820	1550	1250	1800	660	1150
630	1370	900	1050	820	820	1700	1300	1700	820	1200
800	1420	900	1110	820	820	1750	1350	1850	820	1250
1000	1450	900	1200	820	820	1850	1400	1900	820	1300
1250	1500	900	1280	820	820	1850	1400	1950	820	1300
1600	1550	1050	1400	950	950	2000	1450	2050	950	1350
2000	1640	1050	1530	950	950	2050	1550	2150	950	1450
2500	1720	1050	1620	1070	950	2150	1600	2200	1070	1500

Notes:

- ① Dimensions are for reference only and may change due to product improvements. Custom dimensions are available upon request.
- ② For transformers ≤200 kVA, cooling fans are not supplied as standard.



On-load Tap-Changing Dry-Type Distribution Transformer



1.2 Applicable Standards

GB/T10228 GB/T1094.11 GB/T4208 GB20052
GB/T1094.1 GB/T1094.12 JB/T10088

2 Technical Data

Technical Data of SCZ(B)10 Series 6 kV / 10 kV On-load Tap-Changing Dry-Type Distribution Transformers										
Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW) at Different Insulation Thermal Classes			No-load Current (%)	Short-circuit Impedance (%)
	HV	HV Tapping Range (%)	LV			Class B (130°C / 100°C)	Class F (155°C / 120°C)	Class H (180°C / 145°C)		
315	6 6.3 6.6 10 10.5 11	±4×2.5	0.4	Dyn11 Yyn0	0.99	3.40	3.61	3.86	1.1	4
400					1.12	4.02	4.27	4.57	1.1	
500					1.29	4.92	5.22	5.58	1.1	
630					1.49	5.82	6.17	6.60	1.0	
630					1	6	6	7	1	6
800					1.71	7.07	7.50	8.02	1.0	
1000					2	8	9	9	1	
1250					2	10	10	11	1	
1600					2.72	11.7	12.4	13.3	0.85	
2000					3.42	14.3	15.2	16.2	0.7	
2500					3.96	17.1	18.1	19.4	0.7	

Notes:

The load loss values listed in the table correspond to different insulation systems at the reference temperatures specified in parentheses in GB/T1094.11. Load loss values for other insulation systems not included in the table shall be converted according to their respective reference temperatures, using the data for the 155°C (Class F) insulation system as the reference.



Technical Data of SCZ(B)11 Series 6 kV / 10 kV On-load Tap-Changing Dry-Type Distribution Transformers

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW) at Different Insulation Thermal Classes			No-load Current (%)	Short-circuit Impedance (%)
	HV	HV Tapping Range (%)	LV			Class B (130°C / 100°C)	Class F (155°C / 120°C)	Class H (180°C / 145°C)		
315	6 6.3 6.6 10 10.5 11	±4×2.5	0.4	Dyn11 Yyn0	0.89	3.40	3.61	3.86	1.1	4
400					1.00	4.02	4.27	4.57	1.1	
500					1.16	4.92	5.22	5.58	1.1	
630					1.34	5.82	6.17	6.60	1.0	
630					1.29	6.00	6.36	6.80	1.0	6
800					1.54	7.07	7.50	8.02	1.0	
1000					1.78	8.28	8.78	9.39	0.85	
1250					2.10	9.86	10.4	11.1	0.85	
1600					2.45	11.7	12.4	13.3	0.85	
2000					3.08	14.3	15.2	16.2	0.7	
2500					3.56	17.1	18.1	19.4	0.7	

Notes:

The load loss values listed in the table correspond to different insulation systems at the reference temperatures specified in parentheses in GB/T1094.11. Load loss values for other insulation systems not included in the table shall be converted according to their respective reference temperatures, using the data for the 155°C (Class F) insulation system as the reference.

Technical Data of SCZ(B)12 Series 6 kV / 10 kV On-load Tap-Changing Dry-Type Distribution Transformers

Rated Capacity (kVA)	Voltage Combination & Tapping Range			Vector Group	No-load Loss (kW)	Load Loss (kW) at Different Insulation Thermal Classes			No-load Current (%)	Short-circuit Impedance (%)
	HV	HV Tapping Range (%)	LV			Class B (130°C / 100°C)	Class F (155°C / 120°C)	Class H (180°C / 145°C)		
315	6 6.3 6.6 10 10.5 11	±4×2.5	0.4	Dyn11 Yyn0	0.79	3.40	3.61	3.86	0.8	4
400					0.89	4.02	4.27	4.57	0.8	
500					1.03	4.92	5.22	5.58	0.7	
630					1.19	5.82	6.17	6.60	0.7	
630					1.15	6.00	6.36	6.80	0.7	6
800					1.37	7.07	7.50	8.02	0.7	
1000					1.58	8.28	8.78	9.39	0.7	
1250					1.87	9.86	10.40	11.10	0.7	
1600					2.17	11.70	12.40	13.30	0.7	
2000					2.73	14.30	15.20	16.20	0.6	
2500					3.17	17.10	18.10	19.40	0.6	

Notes:

The load loss values listed in the table correspond to different insulation systems at the reference temperatures specified in parentheses in GB/T1094.11. Load loss values for other insulation systems not included in the table shall be converted according to their respective reference temperatures, using the data for the 155°C (Class F) insulation system as the reference.

35kV

Resin-Insulated Dry-Type Transformer

-  Magnetic Circuit Optimization
-  Energy Saving and Loss Reduction
-  Low Noise
-  Strong Overload Capacity
-  Compact Structure





1 Overview

1.1 Product Overview

The SC(B)10 / SC(B)11 series epoxy resin cast dry-type transformers are manufactured using epoxy resin with fillers. After vacuum degassing, the resin is cast under vacuum and pressure around the high-voltage and low-voltage windings reinforced with glass fiber mesh. The three-phase windings have high mechanical strength, electrical strength and thermal resistance. These transformers are widely used in urban power grids, commercial buildings, high-rise buildings, hospitals, subways, airports, ships, power plants, laboratories, stations and ports where fireproof, explosion-proof and moisture-resistant equipment is required.

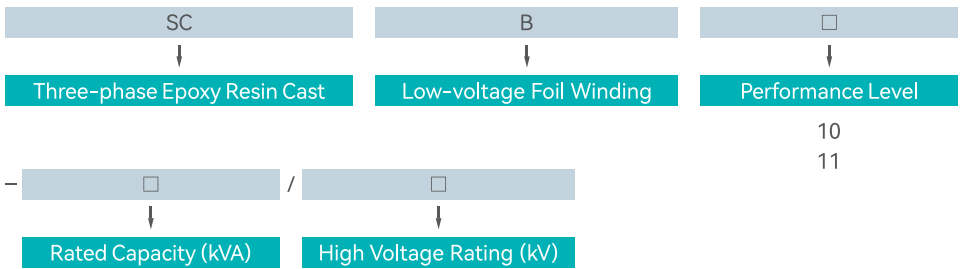
1.2 Product Features

Strong short-circuit resistance, low loss, low no-load current, strong impact resistance, low partial discharge, low noise and excellent heat dissipation.
Performance parameters exceed GB and IEC standards.
Safe, flame-retardant, fire-resistant, pollution-free and suitable for installation at load centers.
Maintenance-free, easy installation and low operating cost.
High reliability, strong mechanical strength and excellent seismic resistance.
Moisture-resistant and corrosion-resistant.
Strong overload capacity, capable of operating at 120% rated load for long periods without forced air cooling.
Suitable for urban substations in densely populated areas with limited installation space.

1.3 Normal Service Conditions

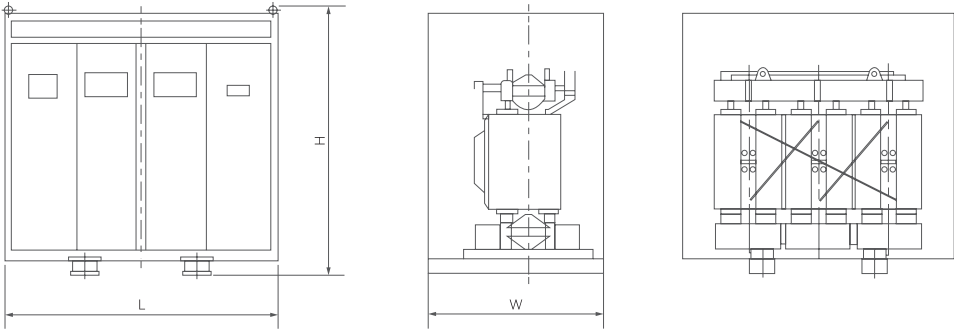
Altitude: Not exceeding 1000 m
Ambient temperature:
Maximum ambient temperature: 40°C
Minimum temperature: -25°C (outdoor dry-type transformer)
Minimum temperature: -5°C (indoor dry-type transformer)
Maximum daily average temperature: 30°C
Maximum annual average temperature: 20°C
Relative humidity below 93%, without condensation on the winding surface
Power supply voltage waveform should be approximately sinusoidal
For three-phase transformers, the supply voltage should be approximately symmetrical.

2 Model Designation



3 Overall Dimensions

Outline Dimension Drawing of SC(B)10 / SC(B)11 Three-Phase Epoxy Resin Cast Dry-Type Power Transformer



4 Technical Data

Rated Capacity (kVA)	Voltage Combination (kV)		Vector Group	No-load Loss (kW)	Load Loss (kW)	Weight (kg)	Reference Dimensions(mm) L × W × H	Enclosure Dimensions(mm) L × W × H	Total Weight with Enclosure kg	Short-circuit Impedance %
	HV	LV								
50	35.36	0.4	Dyn11 Yyn0	450	1420	610	1100*750*1350	2000*1550*2200	860	6
100				630	2090	920	1300*750*1450	2000*1550*2200	1170	
160				790	2810	1200	1450*750*1450	2150*1550*2200	1500	
200				880	3320	1350	1450*750*1500	2150*1550*2200	1550	
250				990	3800	1500	1450*940*1550	2150*1550*2200	1800	
315				1170	4510	1750	1500*940*1600	2300*1600*2200	1950	
400				1370	5410	1900	1540*940*1700	2300*1600*2200	2200	
500				1620	6650	2250	1560*940*1700	2300*1700*2400	2550	
630				1860	7690	2550	1650*940*1750	2500*1700*2400	2850	
800				2160	9120	3250	1750*940*1950	2700*1800*2500	3600	
1000				2430	10400	3600	1800*940*1950	2700*1800*2500	3950	
1250				2830	12700	4150	1850*940*2000	2800*1900*2700	4550	
1600				3240	15400	4800	1900*1240*2200	2800*1900*2700	5200	
2000				3820	18200	5900	2100*1240*2200	2800*1900*2700	6300	
2500				4455	21800	6800	2200*1240*2300	3000*1950*2800	7250	

ZGS □

Combined transformer

 Small Size and Compact Structure

 Safe and Reliable

 Low Damage, Low Noise

 Strong Load Capacity



ZGS □ Combined transformer



1 Summary

1.1 Scope of application

ZGS □ Combined transformer (Commonly known as American box transformer), its structure is "品" type, transformer and high and low voltage equipment are closely connected as one, among them, three sides of the transformer exposed to the air, good heat dissipation conditions, and can be separated from high and low voltage equipment enclosure, easy maintenance. The transformer adopts chip type oil tank, no oil pillow, fully enclosed S□ series oil immersed transformer, high and low voltage bushing, tap switch, oil level indicator, pressure release valve, oil release valve and so on are installed on the high voltage chamber body end plate, reasonable position, easy to observe and operate. High voltage room, low voltage room between the steel plate separated, high voltage room, low voltage room transformer is relatively independent, and maintain a complete box to change the whole, compact structure, small volume, light weight. The power distribution switchgear is installed on the high and low voltage side

1.2 Installation conditions

Cooling condition: Air self-cooling;
Altitude: ≤1000m;
Environment temperature: The outdoor environment temperature is not higher than 40°C and not lower than -45°C; the monthly average temperature is not higher than 30°C and the annual average temperature is not higher than 20°C;
Relative humidity: At 25°C, the relative humidity of the air does not exceed 95%, and the average monthly temperature does not exceed 90%;
Shockproof level: Horizontal acceleration is not greater than 0.3m/s², vertical acceleration is not large 0.15m/s²;
Surrounding environment: Installation environment should be free from obvious pollution, explosive, corrosive gas and dust;
Installation site: There should be no violent vibration and impact, and it is required to be installed on a cement platform or other smooth and solid platform;
When the above conditions cannot meet the use requirements, the user shall negotiate with the manufacturer.

1.3 Product main features

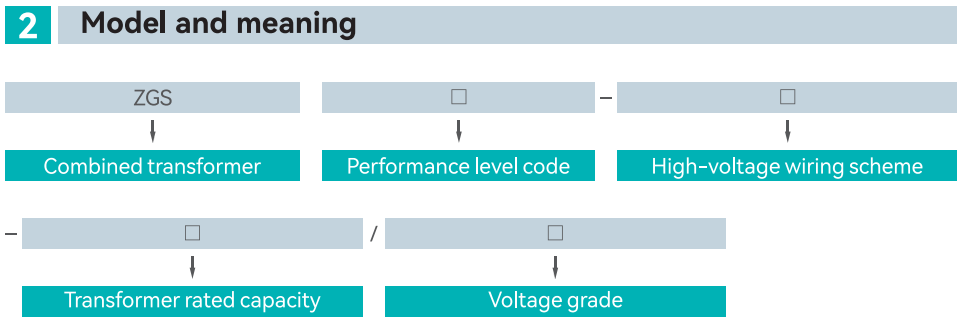
Small size, compact structure, easy installation,
Can be used for ring network, also can be used for terminal, reliable protection of personal safety,
Low damage, low noise and superior performance;
Low temperature rise, strong load capacity.

High voltage interval

The high voltage interval contains high pressure line Incoming sleeve, load switch operating handle, non-excited pressure regulating tap switch, plug-in fuse, pressure release valve, oil temperature gauge, oil level gauge, pressure gauge, oil filling hole, oil discharge valve, etc.

Low voltage interval

In the low voltage distribution cabinet, an intelligent undervoltage controller is installed, which has the function of identifying the abnormal voltage of the substation low voltage bus. When the high-voltage one or two-phase fuse is blown and the substation low-voltage measurement voltage is abnormal, the controller sends out an action signal to make the circuit breaker trip. When the three-phase voltage of the low voltage side is lower than 50% of the normal voltage, the controller does not send an action signal, so as to avoid the trip of 10kV high voltage line or power failure maintenance caused by all the low voltage switch trip. Can be installed according to user requirements with telemetry, remote communication function of comprehensive power distribution tester.



3 Transformer performance parameters

Rated Capacity (kVA)	Voltage Combination (kV)		Connection Group	Loss kW		No-load current %	Short circuit impedance %	Endosure Dimensions(mm) L × W × H			Overall dimensions mm L(Length)×W(Width)×H(Height)	Gauge Vertical / Horizontal
	HV	LV		No-load	Load 75℃			Body weight	Oil weight	Total weight		
30	10.5 10 6.3 6	0.4	Dyn11 Yzn11 Yyn0	0.08	0.63/0.6	1.5	4.0	185	70	310	790×660×925	550/400
50				0.1	0.91/0.87	1.3		255	85	395	820×675×1030	550/400
63				0.11	1.09/1.04	1.2		280	95	430	845×690×1065	550/400
80				0.13	1.31/1.25	1.2		320	100	480	865×715×1075	550/550
100				0.15	1.58/1.5	1.1		380	110	540	880×720×1120	550/550
125				0.17	1.89/1.8	1.1		444	115	600	910×750×1110	550/550
160				0.2	2.31/2.2	1.0		510	130	690	910×750×1200	550/550
200				0.24	2.73/2.6	1.0		610	150	840	1220×745×1220	550/550
250			Dyn11 Yyn0	0.29	3.2/3.05	0.90	4.5	720	190	950	1240×775×1300	660/660
315				0.34	3.83/3.65	0.90		835	200	1065	1230×750×1345	660/660
400				0.41	4.52/4.3	0.80		1010	240	1255	1330×825×1375	660/660
500				0.48	5.41/5.15	0.80		1170	260	1485	1455×915×1390	660/660
630				0.57	6.2	0.60		1375	320	1800	1540×920×1510	660/660
800				0.7	7.5	0.60		1620	365	2120	1650×1035×1555	820/820
1000				0.83	10.3	0.60		1780	405	2450	1855×1235×1600	820/820
1250				0.97	12.0	0.50		2065	560	2855	1925×1285×1680	820/820
1600				1.17	14.5	0.50	5.0	2470	650	3400	2025×1355×1730	820/820
2000				1.55	18.3	0.40		2700	695	4460	2190×1900×1950	820/820
2500				1.83	21.2	0.40		3230	870	5330	2240×1940×1980	1070/1070

Notes:

① The load loss values above the middle slash apply to the Dyn11 or Yzn11 connection group,and the load loss values below the slash apply to the Yyn0 connection group.

② The overall dimension is only for reference in the selection. The final size is subject to the product outline drawing.

4 Configuration List

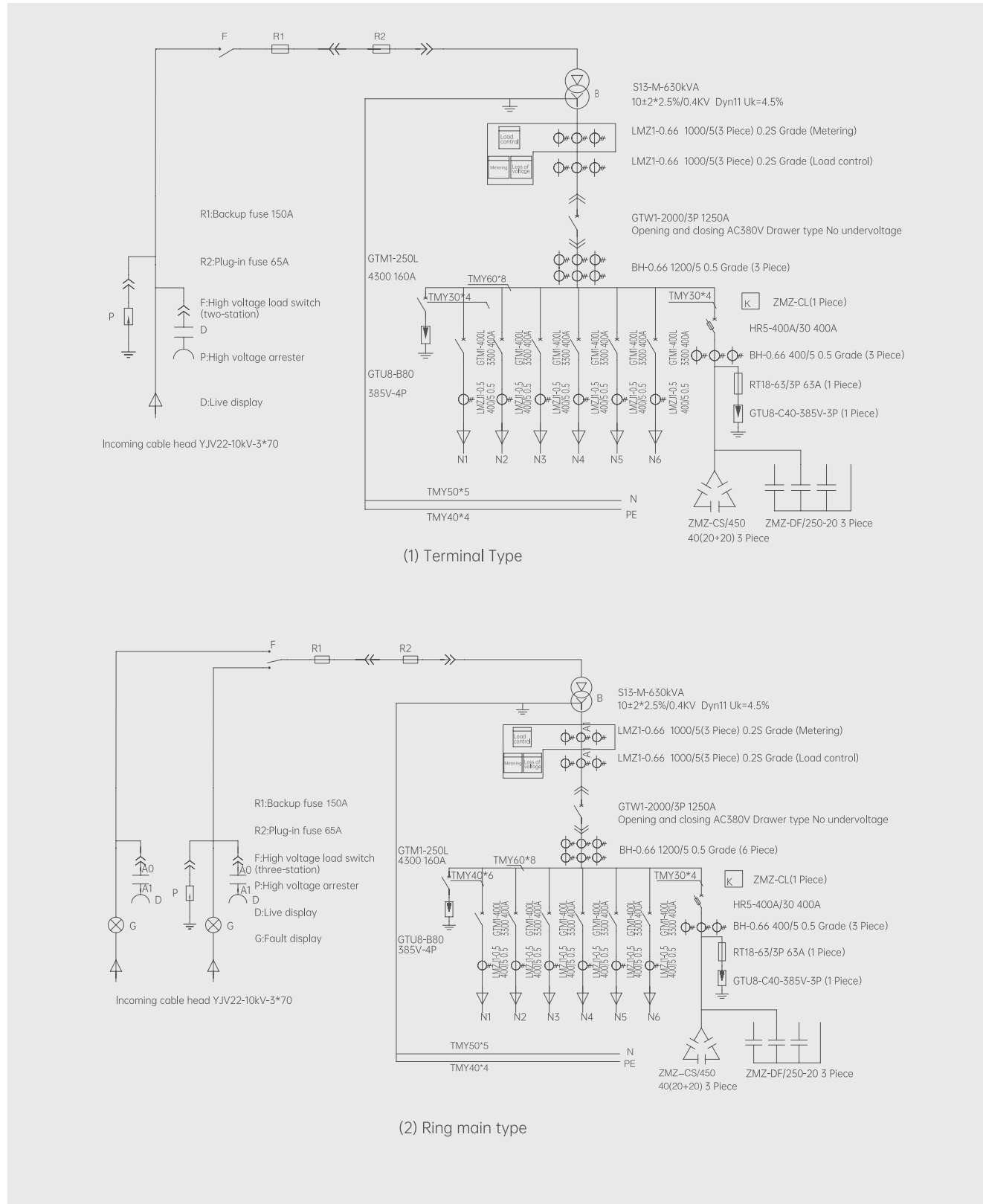
High Voltage Protection of American Transformer

Rated capacity of transformer (kVA)	Low voltage side (0.4kV) Rated current (A)	High voltage side(10kV) Rated current (A)	Plug-in fuse capacity (A)	Backup fuse capacity (A)	Low voltage configuration main switch capacity (A)
50	72.2	2.89	4 or 6	10	100
80	115.5	4.62	10	20	160
100	144.3	5.77	10	20	200
125	180.4	7.22	10	25	250
160	230.9	9.24	15	40	315
200	288.7	11.55	20	40	400
250	360.8	14.43	25	50	500
315	454.7	48.19	31.5	80	630
400	577.4	23.09	40	80	800
500	721.7	28.87	50	100	1000
630	909.3	36.37	65	125	1250
800	1154.7	46.19	80	125	1600
1000	1443.4	57.74	100	200	2000
1250	1804.2	72.17	125	250	2500
1600	2309.4	92.38	160	320	3200

5 Load switch performance parameters

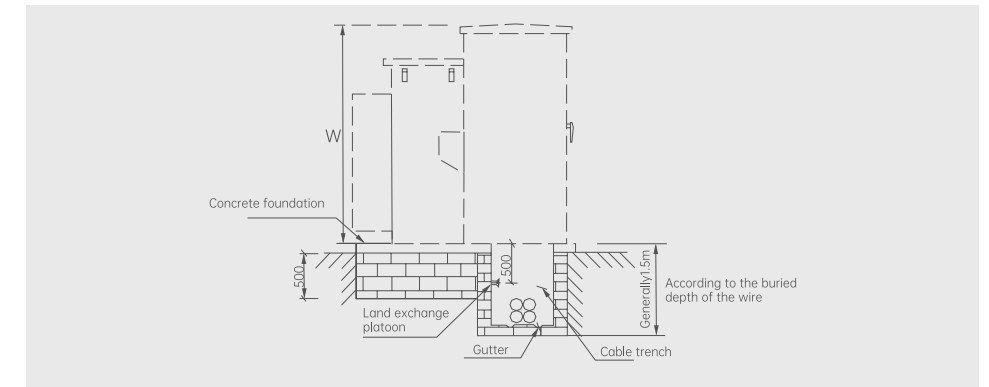
Rated current (A)	Rated voltage (kv)	Impulse withstand Voltage (kv)	Power frequency withstand voltage (Imin.kV)	Rated short-time withstand current(kA/s)	Number of load operations	Number of machine operations
315	12	75	42	20/s	100	2000
630	12	75	42	20/s	100	2000

6 Typical primary plan



7 Basic construction

Box substations should be installed on horizontal concrete countertops that are guaranteed to support their weight. Most of the weight of the box-type substation is concentrated in the rear of the box where the transformer body is installed. The front cabinet is mostly empty, relatively light weight, so the back of the platform should be strong, can withstand the combined weight of the change, but also requires the front and back table flat (generally, it is not easy to do flat, can make the front side of the cabinet foundation slightly lower than the back side of the transformer body foundation, in place after the concrete closed), to ensure that the box installation is stable. The size of the platform is shown in Figure (1) and (2)

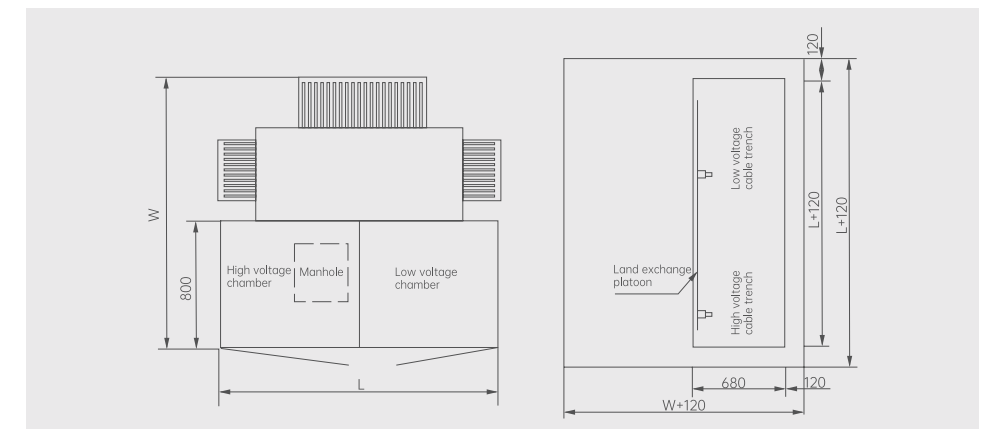


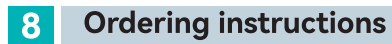
Technical requirements

- ① The relevant dimensions participate in the combined dimensions;
- ② The surface of the concrete base should be smooth, and after the installation of the combined substation, the base should be sealed around with cement;
- ③ The shape of the earthing bar and cable fixing bracket can be determined according to the actual situation;
- ④ Cable fixing frame and earthing bar should be embedded;
- ⑤ The location of the Incoming and outgoing cable holes shall be determined according to the specific situation;
- ⑥ There must be no less than 1.5m gap on the front of the switch after installation of the combination transformer to facilitate operation;
- ⑦ The earthing net can be made of 12-plated round steel or 30x4 galvanized flat steel, and the resistance of the earthing wire should meet the requirements of the power department.

Note:

The size of L, W and H shall be determined according to the actual project configuration.





- ① The full model number of the product includes the main circuit scheme number and the auxiliary circuit scheme number;
- ② Main circuit system combination sequence diagram;
- ③ Installation layout diagram;
- ④ Electrical schematic diagram of auxiliary circuit;
- ⑤ Voltage, current, time and other setting parameters in the circuit;
- ⑥ Other special requirements not consistent with the normal use of the product.

Note

[illegible]