

Smart Electric Global Service provider Make life better!



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### ABOUT

### HENGFENGYOU ELECTRIC GROUP

HENGFENGYOU ELECTRIC GROUP, is an electrical enterprise with transmission and distribution industry as its main business, integrating product research and development, manufacturing and trade. Designated suppliers for the world's top 500 enterprises .lts main products include power transformers, medium and low voltage switchgear, distribution panel ,circuit breakers, transmission tower ,Cable and other power distribution equipment .The group has five department: Transformer department, Panel department, power transmission tower department, cable department and electrical engineering department. HENG-FENGYOU ELECTRIC GROUP has been working hard to provide the best transmission, distribution solutions for users all over the world.

### **Key figures**

- ·Since: 1990
- · Revenue in 2018: 635 million (RMB)
- ·550 employees and 30 Electrical Engineers
- · 6 production sites in China
- · 6% of revenue is invested in R &D

#### Power distribution solutions that drive the global energy transition

With energy demand expanding in both developed and emerging countries, the challenge for HENGFENGYOU ELECTRIC GROUP is to connect energy with people. The group's teams work as closely as possible with projects and decision makers and design and propose technical and process solutions based on global user needs.











Qingdao Hengfengyou Electrical Engineering Co., Ltd

Address: N0.638 Zhongcheng Road, Chengyang District, Qingdao City, China

Tel:+86-532--87936206

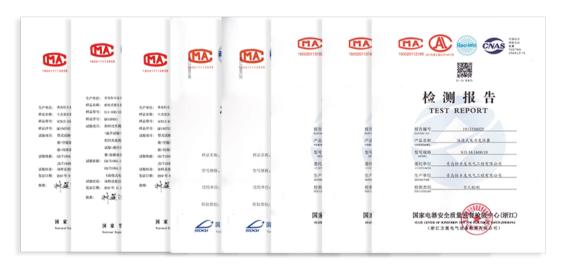
Website: http://www.hengfengyou.com

Sales: hfy@hengfengyou.com Service:service@hengfengyou.com



### OUALIFICATION CERTIFICATION





### OUR PARTNER

























中国铝业





### **© PRODUCT OVERVIEW**

- -The actual measurement of the product is superior to GB and IEC standards, CB CCC KEMA SASO certification, etc
- -Safer, better fire performance, F1 level
- -High lightning impulse resistance level (95kV for 11kv products)
- -Equipped with perfect temperature protection and control system, it can operate at 120% of rated load under forced air cooling conditions
- -The high reliability of operation verification in more than 50 countries and regions around the world has been sold to: Iraq, Kuwait, UAE, Libya, Zimbabwe, South Africa, Uganda, Rwanda, Ethiopia, Ghana, Uzbekistan, Kazakhstan, Pakistan, Vietnam, Nepal, Bangladesh, Indonesia and other countries, with a cumulative export of 13592 sets
- -It is mainly used in urban distribution network below 35KV, power supply and distribution system of industrial and mining enterprises and civil buildings
- -Executive standard: IEC 60076 series, GB1094 series, GB / T 6451-2008
- -The shell materials include aluminum alloy, cold rolled steel plate, stainless steel, etc. for users to choose (protection grade IP20, IP23, etc.)









### **OPRODUCT OVERVIEW**

#### **Conditions of use**

- Altitude less than 1000m, air temperature -25°C~40°C, humidity less than 90% (+25°C)
- the vertical inclination shall not exceed 5°, and the outdoor wind speed shall not exceed 35m/s without severe vibration
- No gas or conductive dust seriously affecting transformer insulation; Places free from explosion hazard and corrosion of electrical components
- Beyond the above normal operating conditions, customers can be customized with our company to solve

#### Standard

The actual measurement of products is better than GB and IEC standards IEC CB CCC COC KEMA STL SABS certification Implementation standards:
IEC 60076 series, IEC 6013, IEC 6024-1, IEC 60296
GB 1094-1996, GB/T 6451-2008, GB/T 7537-2007

#### "Smart electrical global service provider, make life better"

Hengfengyou Eelectric always provides the best oil immersed distribution transformer solutions for users all over the world, continuously improves product quality, reduces production costs, improves service level, and strives to become a world-class electrical service provider!



### PRODUCT ADVANTAGE

### Leading technology

High voltage copper tape winding technology to improve lightning resistance
Low voltage copper foil winding technology, high quality A grade insulation material insulation
Small magnetic leakage, high mechanical strength, short circuit resistance
Core 45° fully inclined joint step laminated structure

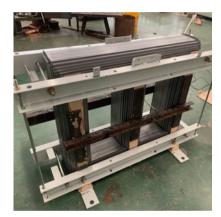
#### The iron core

The iron core is made of high quality cold-rolled grain oriented silicon steel sheet with mineral oxide insulation (from Baosteel and WISCO of China).

By controlling the cutting and stacking process of silicon steel sheet, the loss level, no-load current and noise can be minimized. The iron core is specially reinforced to ensure the structure of the transformer is firm during normal operation and transportation.



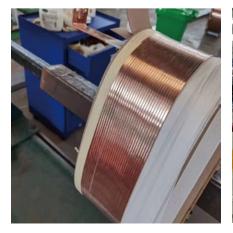




#### Winding

The low voltage winding is made of high quality copper foil with excellent insulation resistance

High voltage winding is usually made of insulated copper wire, using hengfengyou electric patented technology





### PRODUCT ADVANTAGE



### High quality material

Baosteel and WISCO produce silicon steel sheets
China's high quality oxygen free copper
CNPC (Kunlun Petroleum) High quality transformer oil (25#)

#### Patent technology

Thanks to hengfengyou Electric "ultra-low loss energy-saving power transformer" patent technology, can achieve 5% material savings, transformer loss than similar products in the market reduced 10-20%, more energy saving and environmental protection.



The low-voltage outlet terminal is a tin-plated copper bar

High voltage outlet terminals are tin-plated ring bolts

Default no-load voltage regulation (can be customized) tap switch 5 or 7 gear adjustment

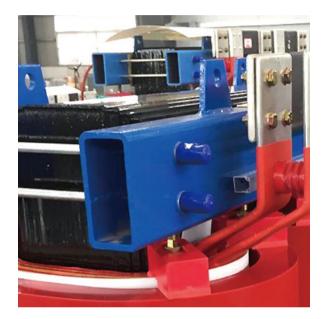
Transformer above 630KVA is equipped with gas relay protection.





### **® PRODUCT ADVANTAGE**

- Authoritative certification: ISO, ANSI, CB, SASO etc
- Perfect SQA quality management system and patented technology to ensure high quality products
- Efficient production equipment and low raw material prices to ensure the price advantage
- Sufficient inventory, short delivery time and fast delivery worldwide
- Perfect after-sales service system, allowing customers to buy worry-free
- Provide OEM/ODM services. Welcome clients to visit our factory.



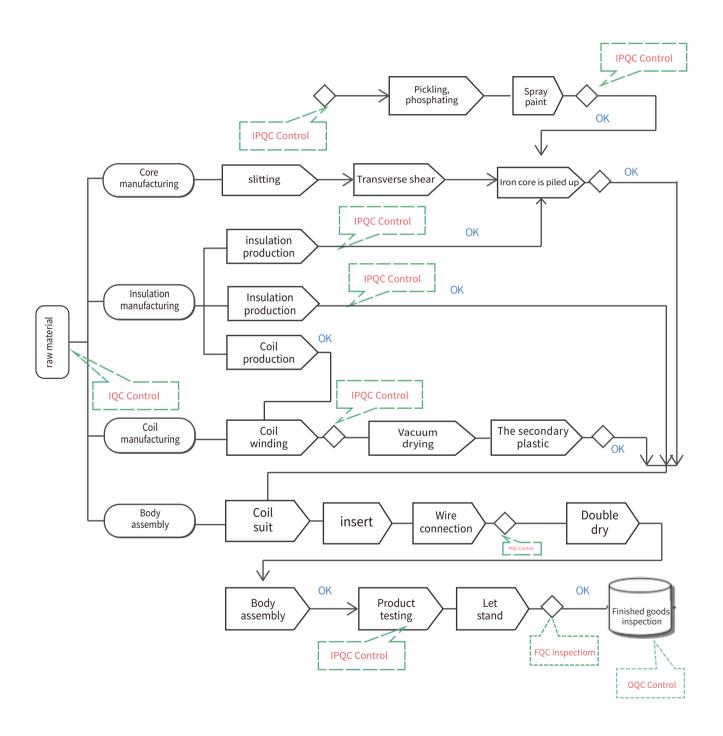








### SQA MANAGEMENT OF DRY TYPE TRANSFORMER



## **OUR PRODUCTION EQUIPMENT**

The company mainly produces more than 300 sets of equipment, and the key equipment includes the full-automatic vacuum resin casting equipment of Hubers company, 400 / 600mm core automatic cross cutting machine, foil winding machine, the most advanced transformer kerosene vapor phase drying equipment in China, large-scale core stacking turnover platform, large scale assembly platform, etc



Silicon steel sheet crosscutting machine



### **® THE CORNER OF OUR FACTORY**

Hengfengyou Electric has 22000 square meters of modern plant, with a monthly delivery capacity of up to 500 distribution transformers, and has fully passed the ISO9001, ISO14001, SA8000, BSCI and other market access standards reviewed and issued by international certification bodies. At present, the company has 10 senior engineers, 30 senior technicians and more than 300 employees, with an annual output value of US \$100 million.

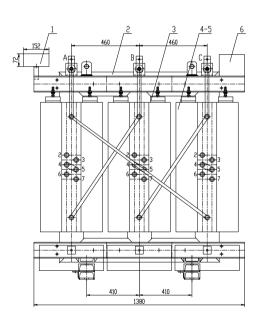


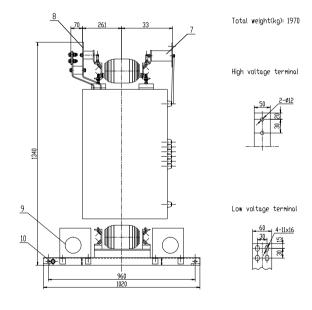




#### SCB10 10KV/11KV Three-phase Dry Type Transformer

Rating (kva)	High voltage (kV)	High voltage tap range (%)	Low voltage (kV)	connection symbol	No-Load Loss	Load Loss (w)	No-Load current(%)	Short current impedance(%)
30					190	710	2	4
50	1				270	1000	2	4
80		±5%			370	1380	1.5	4
100		±2.5%			400	1570	1.5	4
125					470	1850	1.3	4
160				540	2130	1.3	4	
200		0.4		620	2530	1.1	4	
250	11 10.5				720	2760	1.1	4
315	10 6.6	10 66	0.415 Dyn11	880	3470	1	4	
400	6.3 6		0.420 0.44	Yyn0	980	3990	1	4
500	0.5 0				1160	4880	1	4
630		±5%			1340	5880	0.85	4
630		±2×2.5%			1300	5960	0.85	6
800					1520	6960	0.85	6
1000					1770	8130	0.85	6
1250				2090	9100	0.85	6	
1600					2450	11700	0.85	6
2000					3050	14400	0.7	6
2500					3600	17100	0.7	6





- Resistance thermometer Iron core assembly

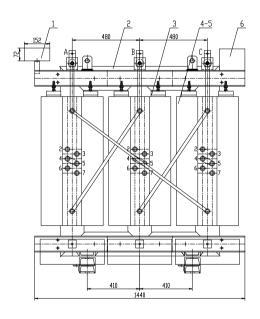
- 2 Iron core assembly
  3 Body insulation
  4 High voltage winding
  5 Low voltage winding
  6 Nameplate group
  7 High voltage leads
  8 Low voltage leads
  9 Draught fan
  10 Earth stud

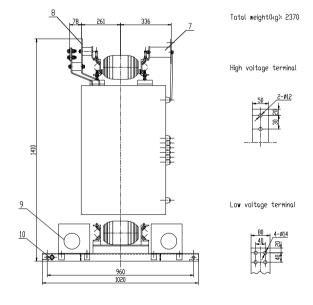
#### All dimensions are in centimeters

	Qingdao Hengfengyou Electrical Engineering Co.Ltd	Design Version	710.1
HENG FENG YOU ELECTRIC - Make Life Better -	Http://www.hengfengyou.com	Data	3PHRASE 50Hz WINDINGS AL
Model	SCBL10-800/11	Date	

#### SCB10 35KV/33KV Three-phase Dry Type Transformer

Rating (kva)	High voltage (kV)	High voltage tap range (%)	Low voltage (kV)	connection symbol	No-Load Loss	Load Loss (w)	No-Load current(%)	Short current impedance(%)		
50					450	1420	2.3	6		
100	1				630	2090	2.0	6		
160	]				790	2810	1.5	6		
200				880	3320	1.5	6			
250		990	3800	1.3	6					
315			0.4	0.4			1170	4510	1.3	6
400				1370	5410	1.1	6			
500	35	35 ±5%	0.415 0.420	,	1620	6650	1.1	6		
630	33	±2×2.5%			1860	7690	1.0	6		
800			0.44		2160	9120	1.0	6		
1000					2430	10400	0.75	6		
1250					2830	12700	0.75	6		
1600					3240	15400	0.75	6		
2000				3820	18200	0.75	6			
2500					4450	21800	0.75	6		
3150					6000	22170	0.75	6		





- Resistance thermometer
  Iron core assembly
  Body insulation
  High voltage winding
  Cow voltage winding
  Nameplate group
  High voltage leads
  Low voltage leads

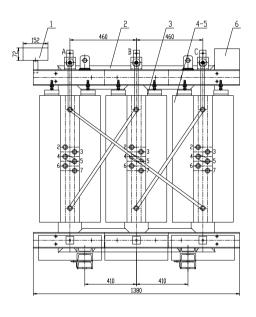
- 9 Draught fan 10 Earth stud

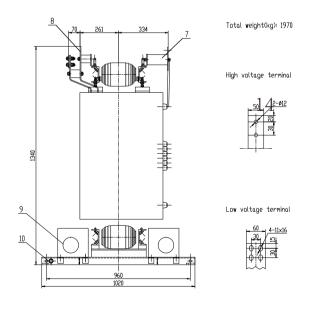
All dimensions are in centimeters

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	Qingdao Hengfengyou Electrical Engineering Co.Ltd	Design Version	710.1
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Model	SCBL10-1000/11	Date	

#### SCB11 10KV/11KV Three-phase Dry Type Transformer

Rating (kva)	High voltage (kV)	High voltage tap range (%)	Low voltage (kV)	connection symbol	No-Load Loss	Load Loss (w)	No-Load current(%)	Short current impedance(%)	
30						170	710	2	4
50					240	1000	2	4	
80		±5%			330	1380	1.5	4	
100		±2.5%			360	1570	1.5	4	
125		_2.570			420	1850	1.3	4	
160			490	2130	1.3	4			
200			0.4	.4 560 650 790	2530	1.1	4		
250	11 10.5		0.4		650	2760	1.1	4	
315	10 6.6				790	3470	1	4	
400		0.420	0.420 Yyn0	880	3990	1	4		
500	6.3 6		0.44	0.44	1045	4880	1	4	
630		±5%			1210	5880	0.85	4	
630		±2×2.5%			1170	5960	0.85	6	
800					1370	6960	0.85	6	
1000					1590	8130	0.85	6	
1250				1880	9100	0.85	6		
1600					2205	11700	0.85	6	
2000					2745	14400	0.7	6	
2500					3240	17100	0.7	6	





- Resistance thermometer Iron core assembly
- Body insulation
- High voltage winding Low voltage winding Nameplate group High voltage leads Low voltage leads

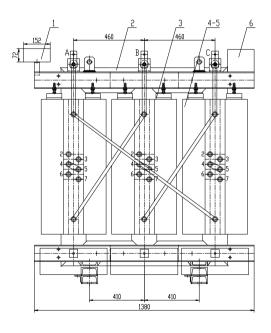
- 9 Draught fan 10 Earth stud

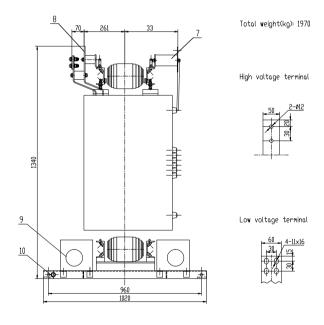
#### All dimensions are in centimeters

	Qingdao Hengfengyou Electrical Engineering Co.Ltd	Design Version	710.1
HENG FENG YOU ELECTRIC • Make Life Better •	Http://www.hengfengyou.com	Data	3PHRASE 50Hz WINDINGS AL
Model	SCBL10-800/11	Date	

#### SCB11 35KV/33KV Three-phase Dry Type Transformer

Rating (kva)	High voltage (kV)	High voltage tap range (%)	Low voltage (kV)	connection symbol	No-Load Loss	Load Loss (w)	No-Load current(%)	Short current impedance(%)
50					405	1420	2.3	6
100					570	2090	2.0	6
160					710	2810	1.5	6
200					795	3320	1.5	6
250					890	3800	1.3	6
315			0.4		1055	4510	1.3	6
400			0.4		1235	5410	1.1	6
500	35	±5%	0.415	Dyn11	1460	6650	1.1	6
630	33	±2×2.5%	0.420	Yyn0	1675	7690	1.0	6
800			0.44		1945	9120	1.0	6
1000					2190	10400	0.75	6
1250					2550	12700	0.75	6
1600					2920	15400	0.75	6
2000				3440	18200	0.75	6	
2500					4005	21800	0.75	6
3150					5400	22170	0.75	6





- Resistance thermometer Iron core assembly Body insulation

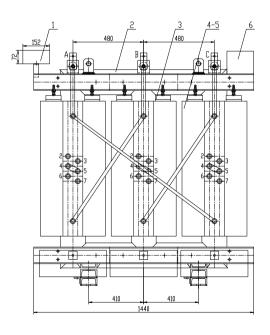
- High voltage winding
- Low voltage winding Nameplate group
- 7 High voltage leads
  8 Low voltage leads
  9 Draught fan
  10 Earth stud

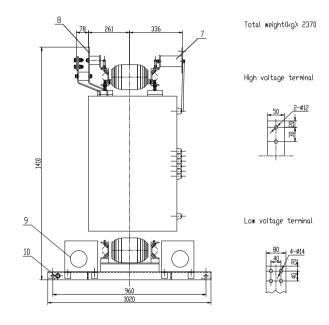
All dimensions are in centimeters

	Qingdao Hengfengyou Electrical Engineering Co.Ltd	Design Version	710.1
ELECTRIC	Http://www.hengfengyou.com	Data	3PHRASE 50Hz WINDINGS AL
Model	SCBL10-800/11	Date	

### SCB12 10KV/11KV Three-phase Dry Type Transformer

Rating (kva)	High voltage (kV)	High voltage tap range (%)	Low voltage (kV)	connection symbol	No-Load Loss	Load Loss (w)	No-Load current(%)	Short current impedance(%)
30					150	710	2	4
50					215	1000	2	4
80	1	±5%			295	1380	1.5	4
100		±2.5%			302	1570	1.5	4
125					375	1850	1.3	4
160					430	2130	1.3	4
200			0.4		495	2530	1.1	4
250	11 10.5		0.4		575	2760	1.1	4
315	10 6.6	0.4	0.415	Dyn11	705	3470	1	4
400	6.3 6		0.420 0.44	Yyn0	785	3990	1	4
500	0.5 0				930	4880	1	4
630		±5%			1070	5880	0.85	4
750		±2×2.5%			1040	5960	0.85	6
800					1215	6960	0.85	6
1000					1415	8130	0.85	6
1250					1670	9100	0.85	6
1600					1960	11700	0.85	6
2000					2440	14400	0.7	6
2500					2880	17100	0.7	6





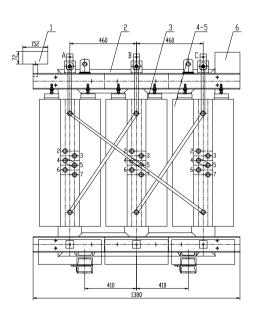
- Resistance thermometer Iron core assembly
- Body insulation
- High voltage winding
- Low voltage winding
  Nameplate group
  High voltage leads
  Low voltage leads

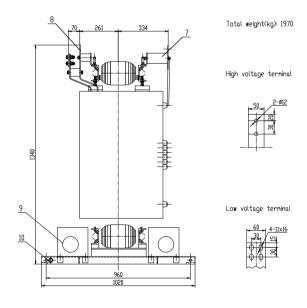
- 9 Draught fan 10 Earth stud

All dimension	All dimensions are in centimeters							
UELLI	Qingdao Hengfengyou Electrical Engineering Co.Ltd	Design Version	710.1					
	Http://www.hengfengyou.com	Data	3PHRASE 50Hz WINDINGS AL					
Model	SCBL10-1000/11	Date						

### SCB12 35KV/33KV Three-phase Dry Type Transformer

Rating (kva)	High voltage (kV)	High voltage tap range (%)	Low voltage (kV)	connection symbol	No-Load Loss	Load Loss (w)	No-Load current(%)	Short current impedance(%)
50					360	1420	2.3	6
100	1				505	2090	2.0	6
160					630	2810	1.5	6
200					705	3320	1.5	6
250					795	3800	1.3	6
315			0.4		940	4510	1.3	6
400		1.50			1095	5410	1.1	6
500	35	±5%	0.415	Dyn11	1295	6650	1.1	6
630	33	±2×2.5%	0.420	Yyn0	1490	7690	1.0	6
800			0.44		1730	9120	1.0	6
1000					1945	10400	0.75	6
1250					2265	12700	0.75	6
1600					2595	15400	0.75	6
2000				3055	18200	0.75	6	
2500					3560	21800	0.75	6
3150					4800	22170	0.75	6





- Resistance thermometer
  Iron core assembly
  Body insulation
  High voltage winding
  Low voltage winding
  Nameplate group
  High voltage leads
  Low voltage leads
  Draught fan
  Earth stud

#### All dimensions are in centimeters

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Model	SCBL10-800/11	Date	

### TEST



Comprehensive experimental platform for power transformer

Noise testing chamber



Transformer test

#### Delivery test (or routine test)

These tests verify the electrical performance specified in the contract. And submit a formal test report.

#### characteristic measurement

- -Winding resistance;
- -Transformation ratio and vector group;
- -Impedance voltage;
- -Load loss;
- -No load loss and no-load current.

#### insulation test:

- -Power frequency withstand voltage test- Inductive voltage withstand test.
- -Partial discharge measurement ensures that the expected service life of transformer less than 5pc is closely related to the initial partial discharge level measured during manufacturing.

#### Special test

These tests will be arranged at customer's request at customer's expense.

#### Short circuit test

These tests were carried out on a special test bench in accordance with IEC 60076-5.

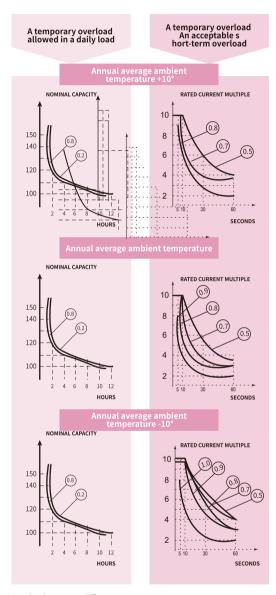
A total of three tests were performed on each transformer column, each lasting 0.5 seconds.

#### Noise level measurement

- Noise level measurement is part of a special test.
- Transformer noise is mainly caused by magne tostriction of magnetic circuit.
- Noise levels can be expressed in two ways:

Sound pressure level Lp , measured in accordance with IEC 551 at 1m from the transformer in no-load operation  $\frac{1}{2}$ 

### TEST



Overload curves at different ambient temperatures

### **OVERLOAD CAPACITY**

### **General information**

The transformer is designed to operate at rated capacity at ambient temperatures specified in IEC 60076 and GB:

- Maximum temperature +40°C;
- Average temperature of the hottest month +30°C;
- Maximum annual average temperature +20 °C.

Unless otherwise specified, the reference temperature is an annual average of 20°C

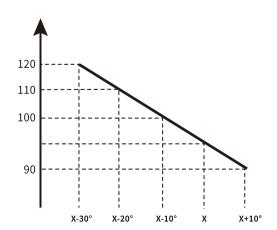
P If it is a normal load within the rated capacity, meet the conditions of overload capacity and time in the left figure

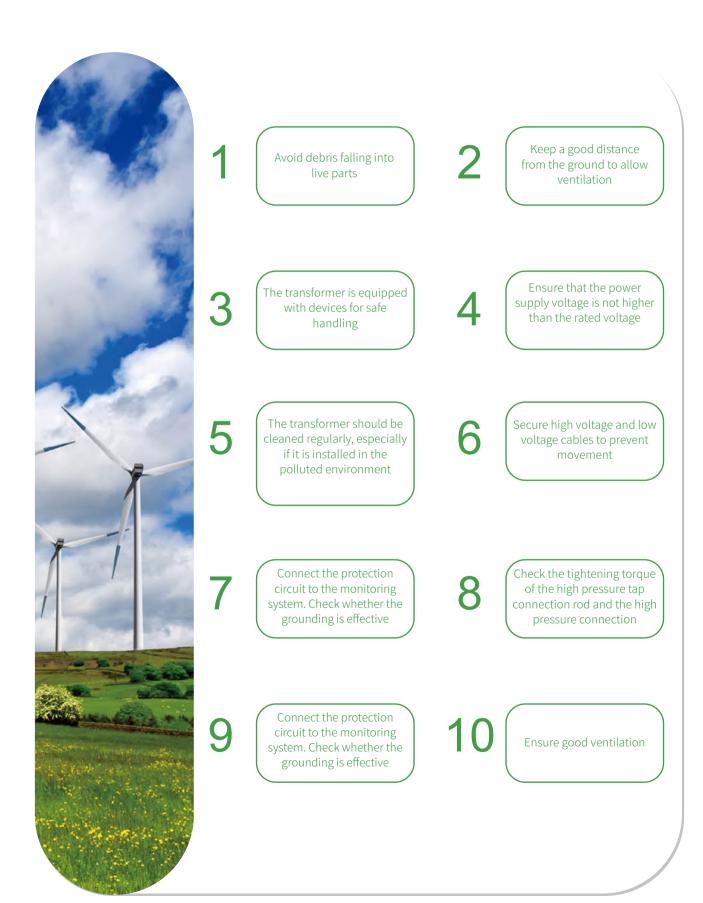
Under, overload operation is allowed and does not affect the life of the transformer

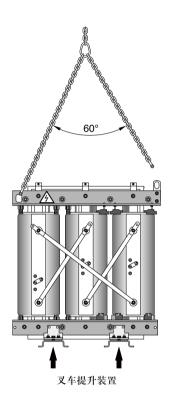
The allowable overload is also subject to the average ambient temperature.

The first column on the left gives the allowed value for the daily overload of the loop.

Column 2 shows acceptable short-time overloads. P The following figure shows the ambient temperature as a function of the acceptable long-term load during the normal life







#### carry

Use the 4 lifting lugs of the transformer (it must be lifted vertically, not obliquely); For the transformer with 2 lifting lugs in the center of the top of the shell, use 2 lifting lugs. The included angle formed by the sling shall not be greater than  $60^{\circ}$ .

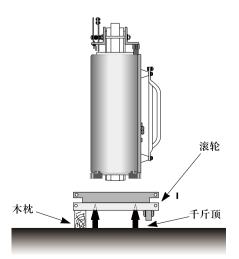
First, check the forklift's forking capacity. If appropriate, the fork arm shall be inserted into the base channel after removing the roller.

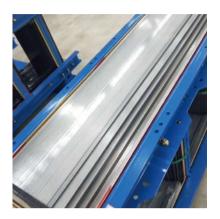
The transformer with or without enclosure shall be hauled from the base. For this purpose, holes with a diameter of 27mm are opened on each side of the base. It can be dragged from two directions: the axial direction of the base and the direction perpendicular to this axis.

#### storage

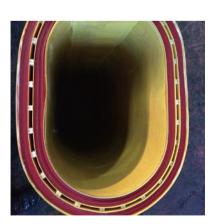
Hengfengyou transformer shall avoid being polluted by dripping water and sand dust (such as masonry and sand blasting) during storage. If hengfengyou transformer is supplied with a plastic cover, it shall be covered on the equipment during storage. Hengfengyou transformer can be stored in an environment with a minimum room temperature of - 25  $^{\circ}$  C and a maximum room temperature of 50  $^{\circ}$  C.

No gas or conductive dust that seriously affects the insulation of the transformer;No explosion hazard, no corrosion of electrical components









#### Installation site

- $\cdot$ The transformer shall be installed in a dry, flat place where water is not easy to enter. The installation site shall have sufficient ventilation to ensure that all heat of the transformer can be dissipated
- · No load shall be supported anywhere on the enclosure except the power supply cable of the transformer. In addition to correctly installing the connecting cable according to the relevant drawings, facilities or accessories not supplied by the manufacturer or without permission are not allowed to be installed in the shell, otherwise, the user shall bear the risk. For the transformation, connection and installation of any accessories, please consult our hengfengyou technicians.
- ·Under no circumstances shall HV and LV connecting cables be fixed on the transformer core and winding. The distance between high-voltage cable, low-voltage cable, or low-voltage bus and the surface of high-voltage winding shall be at least 120mm; However, the minimum distance on the high pressure side refers to the distance to the outermost triangular connecting rod. Special attention shall be paid to the grounding of the shielding layer of high-voltage cable.

#### INSPECTION BEFORE OPERATION

· Auxiliary wiring

The auxiliary wiring on the transformer (connected to plug-in connector) shall be fixed on a fixed support (without any binding) and have sufficient clearance from live parts. The minimum clearance to be considered depends on the voltage level shown on the nameplate.

· Parallel operation

Check whether the high voltage and low voltage of these transformers are the same, and check whether the performance parameters are the same, especially whether the connection group and impedance voltage are the same.

· Make sure the tapping positions are the same

Among the transformers in parallel operation, the capacity of the transformer with the largest capacity shall not exceed more than twice that of the transformer with the smallest capacity.

· Insulation test

Use a 2500V insulation resistance megger to check the insulation of high voltage and low voltage to ground. The insulation of high voltage to low voltage (the insulation resistance value is about: high voltage to ground u 250m, low voltage to ground u 50m, high voltage to low voltage U 250m). If the measured value is significantly lower than the above value, check whether the transformer is damp. In case of moisture, dry it and repeat the above inspection.

·Transformer cleaning

Check the general cleanliness of the transformer and all cable and bus interfaces to ensure that they meet the relevant protection grade

#### Inspection in operation

Under normal use and environmental conditions, check the transformer once a year, dust around the transformer and accessories, and fasten lead terminals, pins, grounding screws, connecting bus screws, etc.

#### Quality Control:

We have established strict SQA working procedures and ISO standards in the development, production, sales and after-sales of electrical products, so as to provide customers with first-class products and the best service.

#### Our team:

1. Our electrical engineer has more than 10 years of working experience

Our workshop workers are all skilled industrial workers who have received three months 'pre-job training

- 3. Our sales team has been extensively trained by management consultants to provide professional solutions for customers
- 4. Our technical team can provide customers with 24-hour technical support world wide
- 5. Our customer service team ensures that orders are delivered on time.

6.professional after-sales service technicians can ensure the correct commissioning and operation of the transformer.











TRANSFORMER PACKAGING AND TRANSPORTATION

### PRE-SALE SERVICE:

- 1.ISO certified excellent Manufacturer
- 2. Third-party authoritative certifications: CE, CB, UL, CSA etc
- 3. Flexible payment: T/T, LC,
- 4. Sufficient inventory, fast delivery time and long validity of the price
- 5. The whole process of picture tracking can be realized in production and transportation
- 6. Experienced professional sales team and a strong technical team
- 7. Sincerely invite customers to visit the company for guidance

### AFTER-SALES SERVICE:

- 1. If there is any quality problem after receiving the goods, you can return the goods free of charge or ship new products
- 2. We provide our customers with a 1-year product warranty
- 3. Provide 24-hour, 365-day technical guidance worldwide
- 4. The VIP customers enjoy our promotional activity trained by management consultants, is able to provide professional solutions for customers.
- 4. Our technical team is ready for 24-hour technical support worldwide.
- 5. Our customer service team ensures on time delivery.



Call Us For Details



### 智能电气全球服务提供商,让生活更美好

SMART ELECTRIC GLOBAL SERVICE PROVIDER, MAKE LIFE BETTER

### QINGDAO HENGFENGYOU ELECTRICAL ENGINEERING CO., LTD

Tel: +86-532--8793 6206 WhatsApp: JACK +86 158 5325 2696 MARTIN +86 135 8926 2999 Website: http://www.hengfengyou.com

Email: hfy@hengfengyou.com service@hengfengyou.com Address: No.638 Zhongcheng Road, Chengyang District, Qingdao City, China

