

## **HENGFENGYOU ELECTRIC**

Smart Electric Global Service provider Make life better!





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## SMART ELECTRIC GLOBAL SERVICE PROVIDER, MAKE LIFE BETTER

# ABOUT HENGFENGYOU ELECTRIC

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. Its 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. HENGFENGYOU 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 yuan
- ·550 employees and 30 Electrical Engineers
- · 6 production sites in China
- · 6% of revenue is invested in R &D

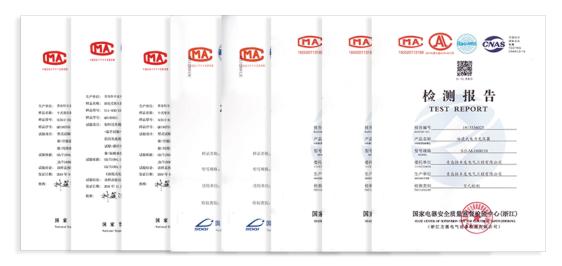
## Power distribution solutions that drive the global energy transition

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.



# **QUALIFICATION CERTIFICATION**





# **OUR PARTNER**





# **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.)







# **PRODUCT 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"

**HengfengyouEelectric** 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

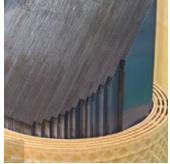
#### The iron core

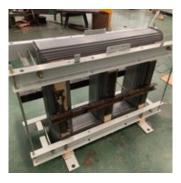
The iron core is made of high quality cold-rolled grain oriented silicon steel sheet with mineral oxide insulation (from Baosteel and WISCO of China).

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.

### Other instructions

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

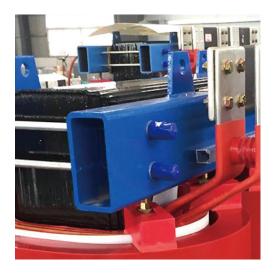
Transformer above 630KVA is equipped with gas relay protection.





# **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.





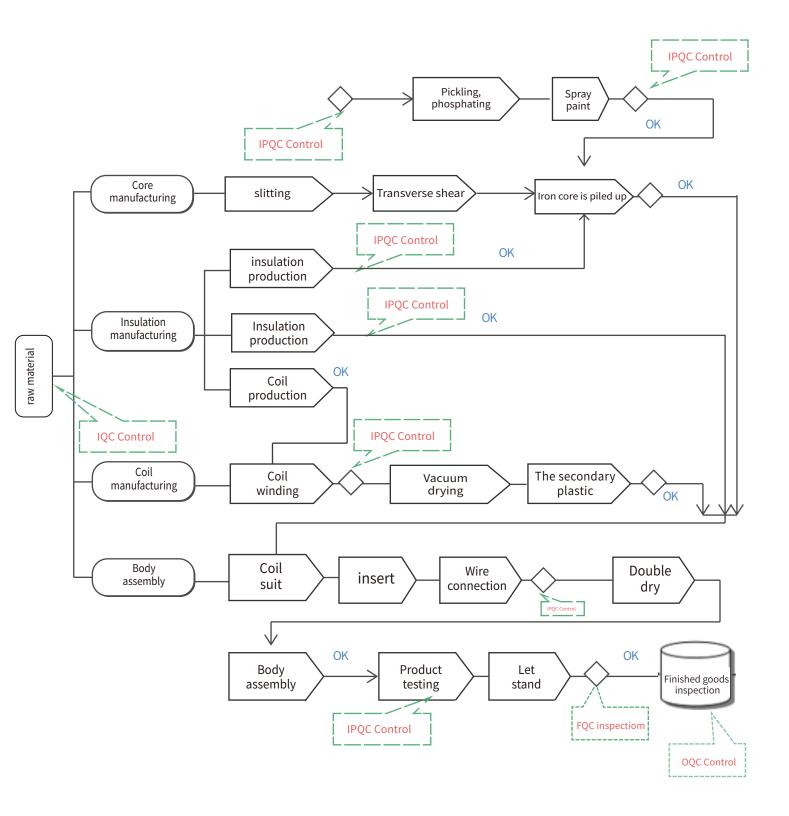








# SQA MANAGEMENT OF DRY TYPE TRANSFORMER





# **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

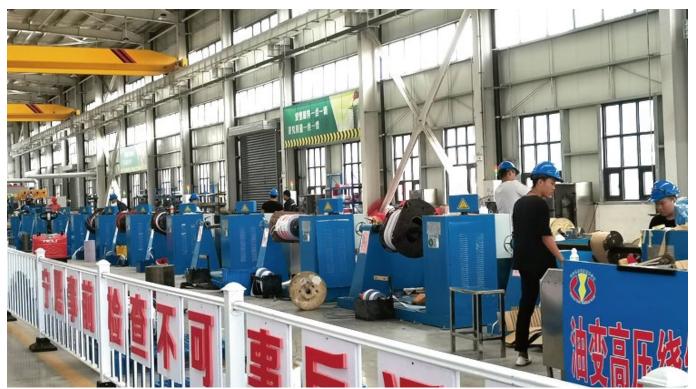




# THE CORNER OF OUR FACTORY

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.



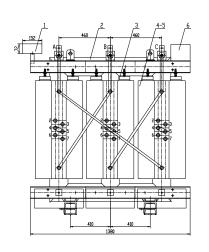




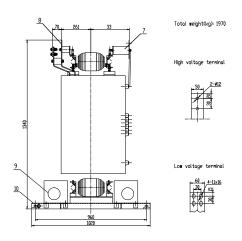


# SCB10 10KV/11KV Three-phase Dry Type Transformer

| 额定容量     | 额定电压及<br>高压 | 分接范围Rated voltage<br>高压分接范围    | &0ff-load<br>低压 | 联结组标号<br>Vector | 空载损耗<br>NO-load | 负载损耗<br>Load loss<br>(W) | 空载电流<br>NO-load | 短路阻抗<br>Short         |
|----------|-------------|--------------------------------|-----------------|-----------------|-----------------|--------------------------|-----------------|-----------------------|
| Capacity | H. V (kv)   | High pressure<br>Tap range (%) | L.V(kv)         | GroupSymbol     | loss<br>(W)     | F级绝缘                     | current (%)     | circuit<br>impedance( |
| 30       |             |                                |                 |                 | 190             | 710                      | 2               | 4                     |
| 50       |             |                                |                 |                 | 270             | 1000                     | 2               | 4                     |
| 80       |             | ± 5%                           |                 |                 | 370             | 1380                     | 1.5             | 4                     |
| 100      |             | $\pm 2.5\%$                    |                 |                 | 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      |             |                                |                 |                 | 720             | 2760                     | 1.1             | 4                     |
| 315      | 11 10.5     |                                |                 | 0 4             | 880             | 3470                     | 1               | 4                     |
| 400      | 10 6.6      |                                | 0.415           | Dyn11           | 980             | 3990                     | 1               | 4                     |
| 500      | 6.3 6       |                                | 0.420           | Yyn0            | 1160            | 4880                     | 1               | 4                     |
| 630      |             | ±5%                            | 0.44            |                 | 1340            | 5880                     | 0.85            | 4                     |
| 630      |             | $\pm 2x2.5\%$                  |                 |                 | 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 thermoneter 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 fon 10 Earth stud



| Αll | dimensions | are | in | centimeters |
|-----|------------|-----|----|-------------|
|     |            |     |    |             |

|  | Qingdao Hengfengyou<br>Electrical Engineering Co.Ltd | Design<br>Version | 710.1                       |  |  |  |  |
|--|--|-------------------|-----------------------------|--|--|--|--|
| HENCHENGYOU<br>BLECTHIC<br>HOW UN Before | Http://www.hengfengyou.com                           | Data              | 3PHRASE 50Hz<br>WINDINGS AL |  |  |  |  |
| Model                                    | SCBL10-800/11  | Date              |                             |  |  |  |  |
| Converight by HENGEENGYDU ELECTRIC 2020  |  |                   |                             |  |  |  |  |



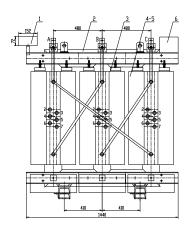




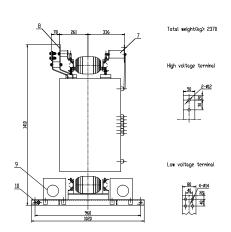
# SCB10 35KV/33KV Three-phase Dry Type Transformer

|          | 额定         | 电压及分接范围Rate   | d      | 联结组标号           | 空载损耗    | 负载损耗      | 空载电流    | 短路阻抗      |
|----------|------------|---------------|--------|-----------------|---------|-----------|---------|-----------|
| 额定容量     | 高压         | 高压分接范围        | 低压     | 联组组体与<br>Vector | NO-load | Load loss | NO-load | Short     |
| Capacity | 田. V (kv)  | High pressure | L.V    | GroupSymbol     | loss    | (W)       | current | circuit   |
|          | 11. V (KV) | Tap range (%) | (kv)   |                 | (W)     | F级绝缘      | (%)     | impedance |
| 50       |            |               |        | •               | 450     | 1420      | 2. 3    | 6         |
| 100      |            |               |        |                 | 630     | 2090      | 2.0     | 6         |
| 160      |            |               |        |                 | 790     | 2810      | 1.5     | 6         |
| 200      |            |               |        |                 | 880     | 3320      | 1.5     | 6         |
| 250      |            |               |        |                 | 990     | 3800      | 1. 3    | 6         |
| 315      |            |               |        |                 | 1170    | 4510      | 1. 3    | 6         |
| 400      |            |               |        |                 | 1370    | 5410      | 1. 1    | 6         |
| 500      | 35         | ±5%           | 0.4    | Dyn 11          | 1620    | 6650      | 1. 1    | 6         |
| 630      | 33         | $\pm 2x2.5\%$ | 0.415  | Dyn11<br>Yyn0   | 1860    | 7690      | 1.0     | 6         |
| 800      |            |               | 0. 420 | 1 y 110         | 2160    | 9120      | 1.0     | 6         |
| 1000     |            |               | 0.44   |                 | 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         |





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



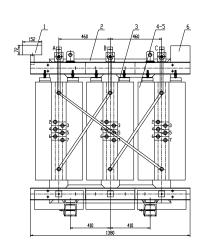
| AU | amension | is are in | cen ume ters |  |
|----|----------|-----------|--------------|--|
| Ī  | 11-11    | Qingdao   | Hengfengyou  |  |

|             | Qingdao Hengfengyou<br>Electrical Engineering Co.Ltd | Design<br>Version | 710.1                       |
|-------------|--|-------------------|-----------------------------|
| BALL PERSON | Http://www.hengfengyou.com                           | Data              | 3PHRASE 50Hz<br>WINDINGS AL |
| Madel       | SCBL10-1000/11                                       | Date              |                             |

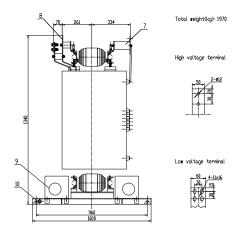


# SCB11 10KV/11KV Three-phase Dry Type Transformer

|                  | 额定            | 电压及分接范围Rate                             | d                 | <b>学</b> // 4/14/14/19         | 空载损耗                   | 负载损耗                     | 空载电流                      | 短路阻抗                          |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
|------------------|---------------|---|-------------------|--------------------------------|------------------------|--------------------------|---------------------------|-------------------------------|--|--|--|--|-------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|------|---|---|
| 额定容量<br>Capacity | 高压<br>H.V(kv) | 高压分接范围<br>High pressure<br>Tap range(%) | 低压<br>L.V<br>(kv) | 联结组标号<br>Vector<br>GroupSymbol | NO-load<br>loss<br>(W) | Load loss<br>(W)<br>F级绝缘 | NO-load<br>current<br>(%) | Short<br>circuit<br>impedance |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 30               |               | Tap Tange (10)                          | (111)             |                                | 170                    | 710                      | 2                         | 4                             |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 50               |               |   |                   |                                | 240                    | 1000                     | 2                         | 4                             |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 80               |               | $\pm 5\%$                               |                   |                                | 330                    | 1380                     | 1.5                       | 4                             |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 100              |               | $\pm 2.5\%$                             |                   |                                | 360                    | 1570                     | 1.5                       | 4                             |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 125              |               |   |                   |                                | 420                    | 1850                     | 1.3                       | 4                             |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 160              |               |   |                   |                                | 490                    | 2130                     | 1.3                       | 4                             |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 200              |               |   |                   |                                | 560                    | 2530                     | 1.1                       | 4                             |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 250              |               |   | 0. 4<br>0. 415    |                                | 650                    | 2760                     | 1.1                       | 4                             |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 315              | 11 10.5       |   |                   |                                | 0. 4<br>0. 415         |                          |                           |                               |  |  |  |  | 0.4   | 0.4 | 0.4  | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |  | 790 | 3470 | 1 | 4 |
| 400              | 10 6.6        |   |                   |                                |                        |                          |                           |                               |  |  |  |  | Dyn11 | 880 | 3990 | 1   | 4   |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 500              | 6.3 6         |   | 0.420             | Yyn0                           | 1045                   | 4880                     | 1                         | 4                             |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 630              |               | $\pm 5\%$                               | 0.44              |                                | 1210                   | 5880                     | 0.85                      | 6                             |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |
| 630<br>800       |               | $\pm 2x2.5\%$                           |                   |                                | $\frac{1170}{1370}$    | 5960<br>6960             | 0.85<br>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                             |  |  |  |  |       |     |      |     |     |     |     |     |     |     |     |     |     |  |     |      |   |   |



- 1 Resistance thernoneter 2 Iron core assembly 3 Body Insulation 4 High voltage winding 5 Low voltage winding 6 Noneplace group 7 High voltage leads 8 Low voltage leads 9 Draughf fan 10 Earth stud



| All dimension |       |       |         |
|---------------|-------|-------|---------|
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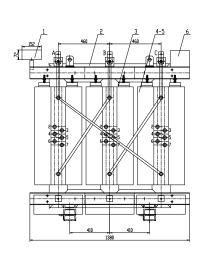
|                                   | Qingdao Hengfengyou<br>Electrical Engineering Co.Ltd | Design<br>Version | 710.1                       |  |  |  |  |  |
|-----------------------------------|--|-------------------|-----------------------------|--|--|--|--|--|
| ELECTRIC<br>BUTCHER<br>BOX OF BOX | Http://www.hengfengyou.com                           | Data              | 3PHRASE 50Hz<br>WINDINGS AL |  |  |  |  |  |
| Model                             | SCBL10-800/11  | Date              |                             |  |  |  |  |  |
|                                   |  |                   |                             |  |  |  |  |  |



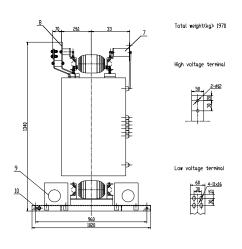


# SCB11 35KV/33KV Three-phase Dry Type Transformer

|          | 额定电压及      | 分接范围Rated voltage | &Off-load | 联结组标号        | 空载损耗    | 负载损耗      | 空载电流    | 短路阻抗       |     |     |     |        |      |      |     |   |
|----------|------------|-------------------|-----------|--------------|---------|-----------|---------|------------|-----|-----|-----|--------|------|------|-----|---|
| 额定容量     | 高压         | 高压分接范围            | 低压        | Vector       | NO-load | Load loss | NO-load | Short      |     |     |     |        |      |      |     |   |
| Capacity | H. V (kv)  | High pressure     | L. V (kv) | GroupSymbol  | loss    | (W)       | current | circuit    |     |     |     |        |      |      |     |   |
|          | 11. V (KV) | Tap range (%)     | L. V (KV) | Of Oupsymbol | (W)     | F级绝缘      | (%)     | 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      |            |                   |           |              | 1055    | 4510      | 1.3     | 6          |     |     |     |        |      |      |     |   |
| 400      |            |                   |           |              | 1235    | 5410      | 1.1     | 6          |     |     |     |        |      |      |     |   |
| 500      | 35         | ± 5%              | ±5%       | 0.4          | 0.4     | 0.4       | 0.4     | 0.4        | 0.4 | 0.4 | 0.4 | D . 11 | 1460 | 6650 | 1.1 | 6 |
| 630      | 33         | $\pm 2x2.5\%$     | 0.415     | Dyn11        | 1675    | 7690      | 1.0     | 6          |     |     |     |        |      |      |     |   |
| 800      |            |                   | 0.420     |              |         | Yyn0      | 1945    | 9120       | 1.0 | 6   |     |        |      |      |     |   |
| 1000     |            |                   | 0. 44     |              | 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 thermoneter 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 fon 10 Earth stud



| A11 | P         |     | ٠.  | centimeters  |
|-----|-----------|-----|-----|--------------|
| All | amensions | are | ırı | cen une ters |

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

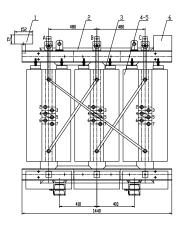




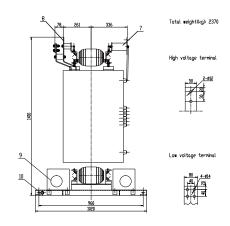
# SCB12 10KV/11KV Three-phase Dry Type Transformer

| 额定容量<br>Capacity  | <u>额定电压及</u><br>高压<br>H. V (kv) | 分接范围Rated voltage<br>高压分接范围<br>High pressure<br>Tap range(%) | &Off-<br>低压<br>L.V(k<br>v)        | 联结组标号<br>Vector<br>GroupSymbol | 空载损耗<br>NO-load<br>loss(W)  | 负载损耗<br>Load<br>loss<br>(W)   | 空载电流<br>NO-load<br>current<br>(%)   | 短路阻抗<br>Short<br>circuit<br>impedance                    |
|---|---------------------------------|--|-----------------------------------|--------------------------------|---|---|---|--|
| 30 kva<br>50 kva<br>80 kva<br>100 kva<br>125 kva<br>160 kva   |                                 | ±5%<br>±2.5%   |                                   |                                | 150<br>215<br>295<br>320<br>375<br>430  | 710<br>1000<br>1380<br>1570<br>1850<br>2130   | 2<br>2<br>1.5<br>1.5<br>1.3<br>1.3  | 4<br>4<br>4<br>4<br>4                                    |
| 200 kva<br>250 kva<br>315 kva<br>400 kva<br>500 kva<br>630 kva<br>750 kva<br>1000 kva<br>1250 kva<br>1600 kva<br>2000 kva | 11 10.5<br>10 6.6<br>6.3 6      | ±5%<br>±2x2.5%   | 0. 4<br>0. 415<br>0. 420<br>0. 44 | Dyn11<br>Yyn0                  | 495<br>575<br>705<br>785<br>930<br>1070<br>1040<br>1215<br>1415<br>1670<br>1960<br>2440<br>2880 | 2530<br>2760<br>3470<br>3990<br>4880<br>5880<br>5960<br>6960<br>8130<br>9100<br>11700<br>14400<br>17100 | 1. 1<br>1. 1<br>1<br>1<br>0. 85<br>0. 85<br>0. 85<br>0. 85<br>0. 85<br>0. 85<br>0. 85<br>0. 7<br>0. 7 | 4<br>4<br>4<br>4<br>4<br>6<br>6<br>6<br>6<br>6<br>6<br>6 |





- 1 Resistance thermomete
- 3 Body insulation
- 4 High voltage winding
- 6 Nameplate group
- 8 Low voltage lead
- 9 Draught fa

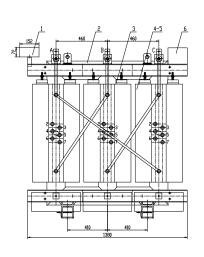


| All dimensions are in centimeters |  |                   |                             |  |  |  |  |
|-----------------------------------|--|-------------------|-----------------------------|--|--|--|--|
|                                   | Qingdao Hengfengyou<br>Electrical Engineering Co.Ltd | Design<br>Version | 710.1                       |  |  |  |  |
| SLECTEC<br>SLECTEC<br>Bids A Rose | Http://www.hengfengyou.com                           | Data              | 3PHRASE 50Hz<br>WINDINGS AL |  |  |  |  |
| Model                             | SCBL10-1000/11                                       | Date              |                             |  |  |  |  |
|                                   | C  | IDMODERNO         | OU ELECTRIC 2020            |  |  |  |  |

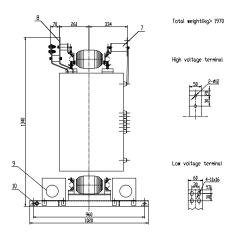


# SCB12 35KV/33KV Three-phase Dry Type Transformer

| 额定容量<br>Capacity   | 额定电压及<br>高压<br>H.V(kv) | 分接范围Rated voltage<br>高压分接范围<br>High pressure<br>Tap range(%) | &Off-<br>低压<br>L.V(k<br>v)        | 联结组标号<br>Vector<br>GroupSymbol | 空载损耗<br>NO-load<br>loss(W)   | 负载损耗<br>Load<br>loss<br>(W)  | 空载电流<br>NO-load<br>current<br>(%)  | 短路阻抗<br>Short<br>circuit<br>impedance  |
|--|------------------------|--|-----------------------------------|--------------------------------|--|--|--|--|
| 50 kva<br>100 kva<br>160 kva<br>200 kva<br>250 kva<br>315 kva<br>400 kva<br>500 kva<br>630 kva<br>1000 kva<br>1250 kva<br>1600 kva<br>2000 kva<br>2500 kva | 35<br>33               | ±5%<br>±2x2.5%   | 0. 4<br>0. 415<br>0. 420<br>0. 44 | Dyn11<br>Yyn0                  | 360<br>505<br>630<br>705<br>795<br>940<br>1095<br>1295<br>1490<br>1730<br>1945<br>2265<br>2595<br>3055<br>3560<br>4800 | 1420<br>2090<br>2810<br>3320<br>3800<br>4510<br>5410<br>6650<br>7690<br>9120<br>10400<br>12700<br>15400<br>18200<br>21800<br>22170 | 2. 3<br>2. 0<br>1. 5<br>1. 5<br>1. 3<br>1. 1<br>1. 1<br>1. 0<br>1. 0<br>0. 75<br>0. 75<br>0. 75<br>0. 75<br>0. 75<br>0. 75 | 6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6<br>6 |



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



| All dimension | ns are in centimeters  |   |
|---------------|------------------------|---|
|               | Qingdao Hengfengyou    |   |
| ترسي          | Electrical Engineering | C |

Design Version 710.1 3PHRASE 50Hz WINDINGS AL Data Model SCBL10-800/11





# **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.

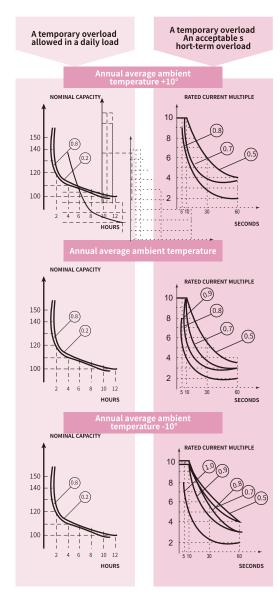
A total of three tests were performed on each transformer column, each lasting 0.5 seconds.

## 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



# **TEST**



Overload curves at different

# **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

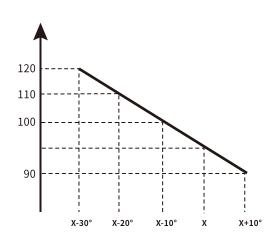
P If it is a normal load within the rated capacity, meet the conditions of overload capacity and time in the left figure

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







Avoid debris falling into live parts

2

Keep a good distance from the ground to allow ventilation

The transformer is equipped with devices for safe handling

4

Ensure that the power supply voltage is not higher than the rated voltage

The transformer should be cleaned regularly, especially if it is installed in the polluted environment

6

Secure high voltage and low voltage cables to prevent movement

7

Connect the protection circuit to the monitoring system. Check whether the grounding is effective

8

Check the tightening torque of the high pressure tap connection rod and the high pressure connection

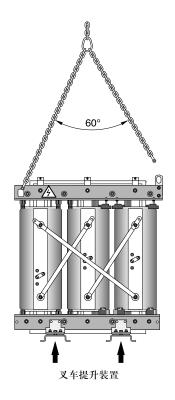
9

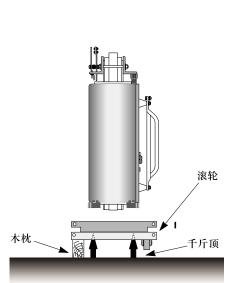
Connect the protection circuit to the monitoring system. Check whether the grounding is effective

10

Ensure good ventilation







#### **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.

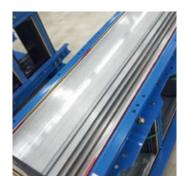
The transformer with or without enclosure shall be hauled from the base. For this purpose, holes with a diameter of 27mm are opened on each side of the base. It can be dragged from two directions: the axial direction of the base and the direction perpendicular to this axis.

#### **STORAGE**

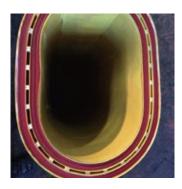
**Hengfengyou** transformer shall avoid being polluted by dripping water and sand dust (such as masonry and sand blasting) during storage. If hengfengyou transformer is supplied with a plastic cover, it shall be covered on the equipment during storage. Hengfengyou transformer can be stored in an environment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

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









### **INSTALLATION SITE**

- ·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

01

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, SASO, CCC, KEMA etc
- 3. Flexible payment: T/T, LC, O/A
- 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.
- 5. Our customer service team ensures on time delivery.



Call Us For Detais



## 青岛恒丰友电气工程有限公司

QINGDAO HENGFENGYOU ELECTRICAL ENGINEERING CO., LTD

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Hengfengyou (Qingdao) Transmission tower Co., Ltd Address: Shuangyuan Road, Chengyang District, Qingdao City, Shandong Province, China

Hengfengyou (Qingdao) Cable Co., Ltd Address: Jifa Longshan Road, Jimo District, Qingdao, Shandong Province, China

Hengfengyou (Qingdao) Panel Builder Co., Ltd Address: Jifa Longshan Road, Jimo District, Qingdao, Shandong Province, China

Hengfengyou (Yancheng) special transformer Co., Ltd Address: Longteng Road, Longgang Town, Yandu District, Yancheng City, Jiangsu Province.China

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