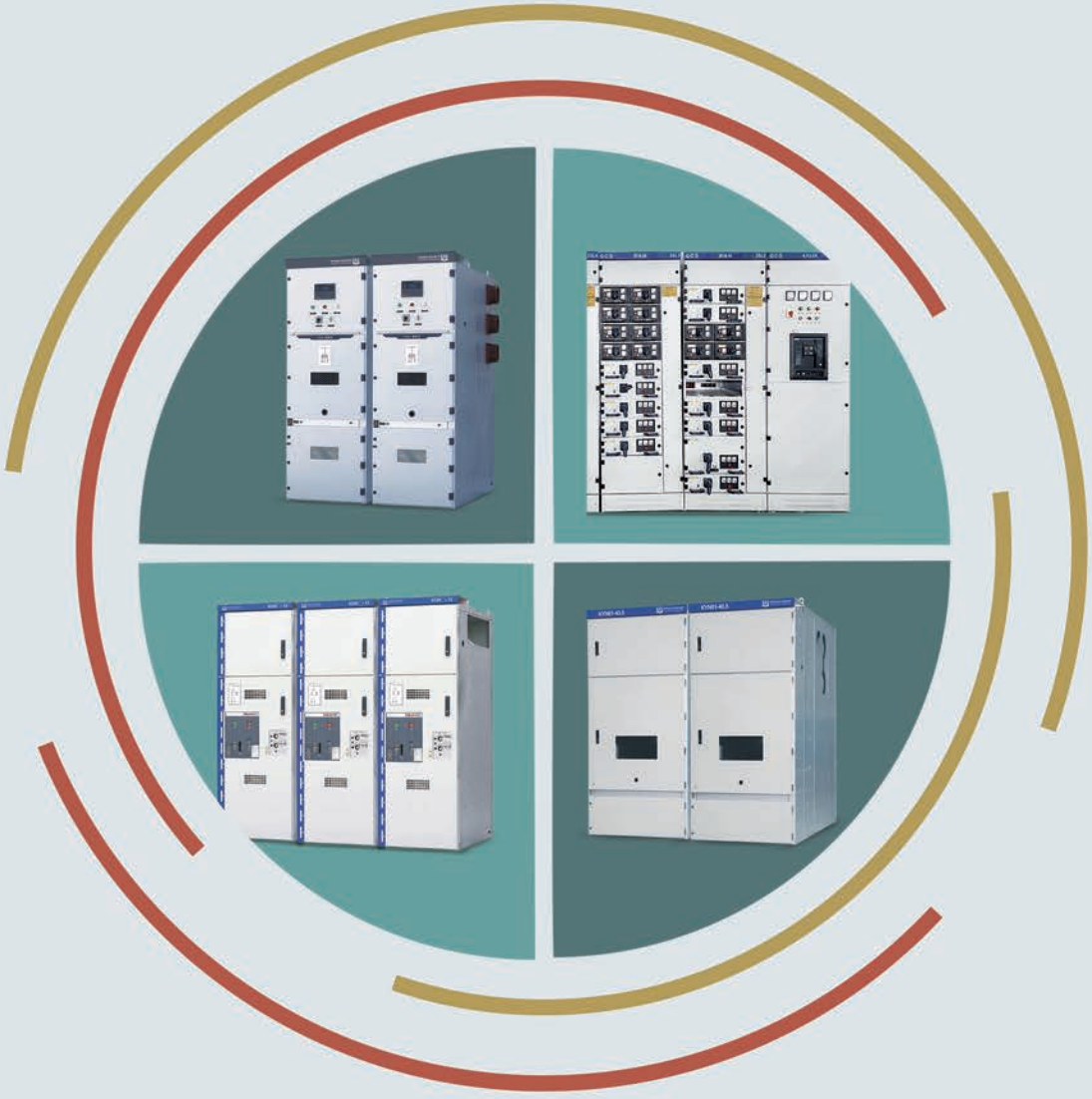
ZTELEC GROUP
Powered Green & Reliability



ELECTRIC SWITCHGEAR

Selection Guide

河南中天宇光电气有限公司
ZTELEC YUGUANG ELECTRIC TECHNOLOGY(HENAN)CO.,LTD

Content

Content

Founded in 1958, Henan Zhongtian Electric Equipment Group (hereinafter referred to as Ztelec Group) was formerly owned by the Ministry of Light Industry. Ztelec Group adheres to the core value concept of “Vision, Innovation, and Responsibility” and takes “Power the world with green and reliability” as its own responsibility. Focusing on production and manufacturing for over 50 years, the group has developed into an integrated group company specializing in four industries: Electric equipment, Composite materials, Enamelled copper wires, and Photovoltaic energy. Ztelec Group is represented by 5 manufacturing bases across 4 cities (Xuchang, Guiyang, Chengdu, and Dongguan) in China, with more than 1500 employees worldwide.

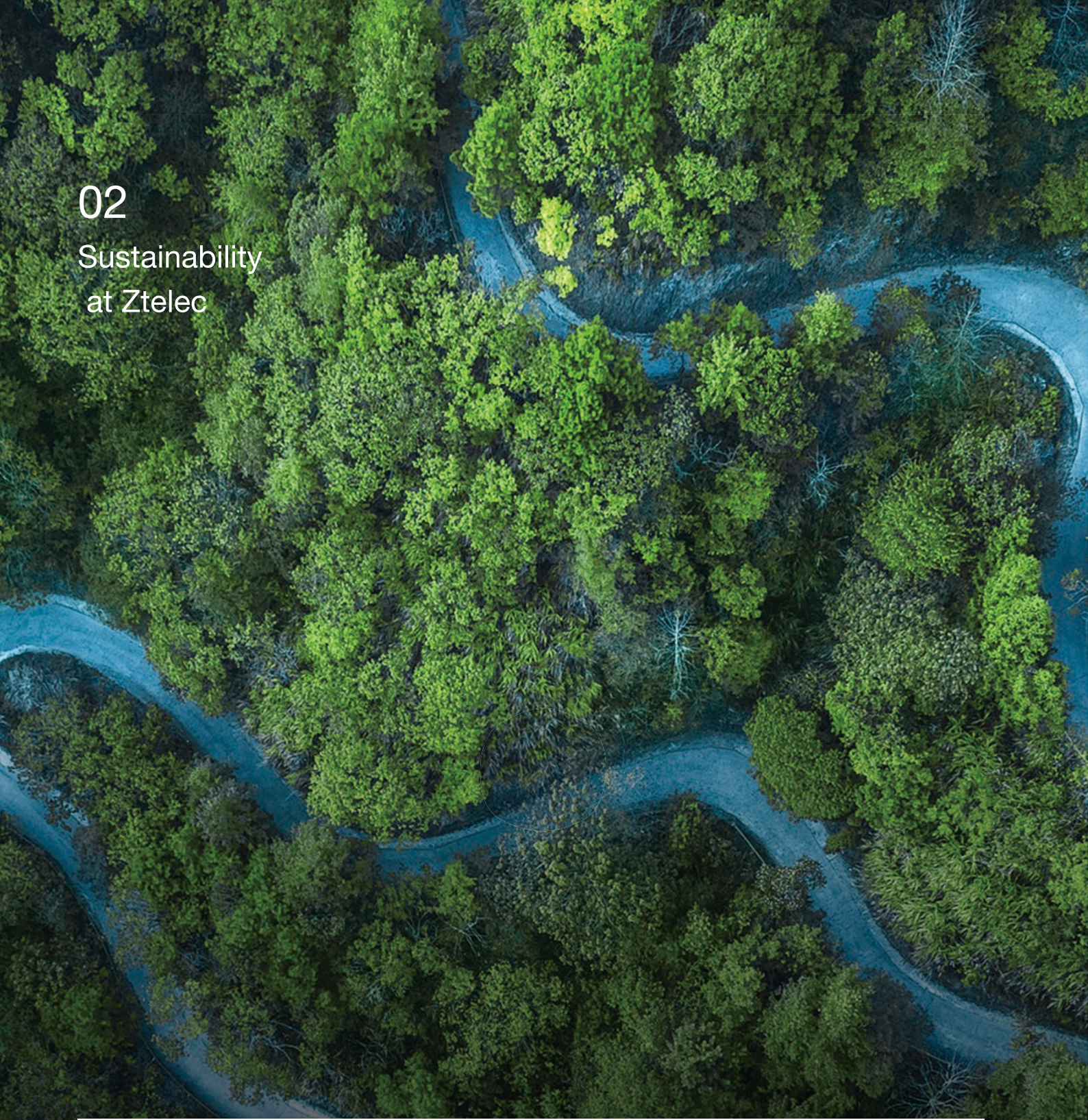
Ztelec is focusing on manufacturing MV and LV power generation, transmission, and distribution equipment, as well as PV equipment, including flexible solar panels, energy storage, energy management devices, and substations. Ztelec owns 1 national postdoctoral research station and 2 provincial technology centers. It closely cooperates with the National Advanced Materials Laboratory of Beihang University and the Institute of Plasma of the Chinese Academy of Sciences to promote intelligent manufacturing levels and digitization transformation. Ztelec is a Chinese enterprise committed to the development of globalization, promoting an open technology and partner ecosystem, and actively practicing the common values of meaning, inclusiveness, and empowerment.

5
Manufacturing base

1500+
Number of employees

1
National postdoctoral research station

2
Provincial technology centers



02
Sustainability at Ztelec

The continuous improvement of the economy and environment in our community and the enhancement of the life quality of our staff and their families are the sustained aims of Ztelec.

In order to achieve these aims, Ztelec has made great efforts toward the balance between economic development and environmental protection, including how to design and manufacture products, how to refine products and services provided, how to cooperate with local suppliers and evaluate risks and opportunities, and how to fulfill its responsibilities.

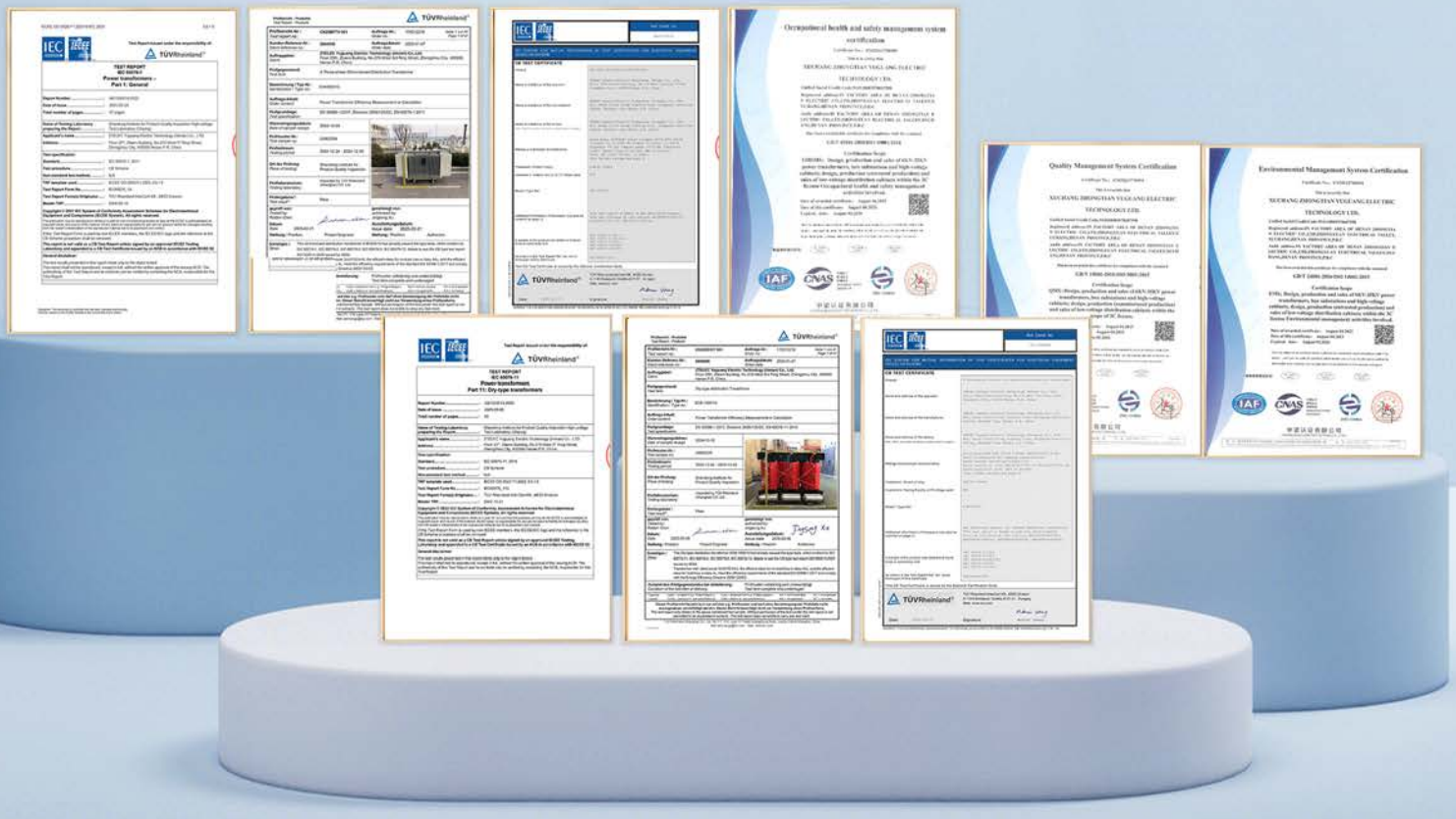
03 Certificates & Patents

36 National Patents Granted -Validated

(Innovations in core technologies, product design, and manufacturing excellence)

Global Compliance & Certification-Certified by ISO, CE, CB,

and International Standards



04 Industrial development history

We introduced complete testing equipment and manufacturing machines, and started to produce power equipment, including 10kV and 35kV oil-immersed transformers and 10kV switchgear.

2003

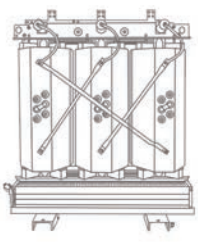
国家电网 STATE GRID

Won multiple bids with a total amount of approximately $6 million for the power transmission and transformation projects from the State Grid Corporation of China.

2009

2010

Started the production of S11 and S13 series cast resin dry-type transformers. Achieved significant progress in developing the S15 series of high-efficiency amorphous alloy transformers.



2006

Successfully obtained ISO9001:2008 and ISO14001 certifications; the full series of 6kV, 10kV, and 35kV transformers passed the “type test” and “special test” conducted by the Suzhou Electrical Appliance Research Institute.

Through the cooperation with CNOOC, developed transformers for offshore power supply system under marine operation environment.

2012

Successfully passed the audit of SAM supplier management system from Schneider Electric and became their supplier in the field of Variable frequency transformer.

2017

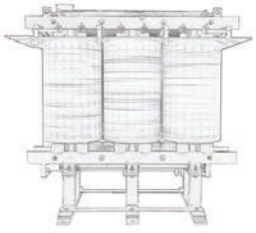
Began to provide container-type or box-type step-up integrated equipment for energy storage power stations (CESS), which integrates 35kV high-voltage switchgear, low-voltage switchgear and dry-type isolation transformers.

2022

2023

2014

It has gradually formed four product production lines, including oil immersed transformer, dry type transformer, high and low voltage switch gear, and box type substation. Meanwhile, started the sample making and market development of mining transformer, open type transformer and variable frequency transformer.



2019

Started batch production of traction transformer for railway, prefabricated photovoltaic intelligent substation and photovoltaic power generation system equipment.

05 Flexible & High efficient manufacture

Respond quickly to the customer's special requirements regarding environment, appearance, efficiency, delivery time, transportation, special quality requirements, and others. Provide personalized design and shorten the delivery cycle time.

Organize production in accordance with GB and international (IEC and IEEE) standards, implement a full-process control concept from raw material warehousing control to finished product inspection, focus on customers' experiences and core needs, and provide products and services that exceed customers' expectations

+ Maufacturing equipment

1 Numerical Control Punching Machine

2 Numerical Control Bending Machine

3 Busbar Processing Machine

4 Laser Cutting Machine

+ Implementation of TQM and Systerm

After introducing the lean production concept, we established 50 lean improvement quality criteria. Each process is provided with operation instructions and standardized operation criteria to implement the production plan, using timely management to improve communication efficiency and continuously shorten delivery time. The Toyota Production System (TPS), with a core focus on production process management (MPS), has gradually been developed by connecting sales, materials, planning, supply chain, services, and other areas.


Kanban System


Design


Test


Service

06 Testing

Regular Tests

- Voltage ratio measurement
- Applied withstand voltage test
- Induced withstand voltage test
- Partial discharge measurement
- No load loss and current measurement
- Winding resistances measurement
- Insulation resistance test
- Load loss and short circuit impedance measurement
- Transformer oil test

Type Tests

On customer requirements

- Temperature rise test
- Lightning impulse test
- Noise level test

Special Tests

On customers' requirements, below parameters can be checked

- Zero-sequence impedance
- No-load voltage harmonic
- Parallel capacity of windings
- Anti-corrosion protection checking
- Short circuit test

07 Installation and Service

Warehouse

+ In the warehouse, transformers should be protected from the pollution of water droplets, dust and sand. If provided with plastic cover, the transformer should be covered during storage.

Transport

+ The transformer is equipped with safety transport devices. The transformer without shell shall be lifted with lifting lugs, the medium and small dry transformers with shell shall be lifted with lifting rings, and the large transformer shall be lifted with special lifting device for foundation channel steel.

Shipping

+ The product is ready for shipping either by truck or sea freight once it has passed the tests.We take care of all official doucments, depending on destinations and delivery terms. We also provide different packaging for special applications or conditions.

Installation

+ We supply the installation guide and user manual for each transformer. Under normal conditions, check the transformer once a year and clear the dust by vacuum cleaner. The frequency of cleaning depends on the running conditions.

Service

+ When some parts need to be replaced or any information is required, the main parameters on the nameplate must be provided, especially the serial number. We provide stock in regular quantities of spare parts, in case of customer needs.

08 Customer cases

Subway Line 01, Zhengzhou 2014

Xinzheng Airport Terminal

A carrier rocket with Shenzhou-11 spacecraft, CASA, 2016

SAIF 225MW Gas Turbine Combined Cycle Power Project, Pakistan

Yuzhou Peak Photovoltaic Power Station Project

Khutul, "CEMENT-SHOKHO" JSC, Mongolia, 2015

Other achievements (in no particular order)

Aerospace and military projects:

+ Xinxiang Aviation Industry Group
+ Guilin Aerospace Electronics Co., Ltd.
+ Guizhou Aerospace Electric Co., Ltd.
+ AVIC Chengdu Aircraft Industry Group

Wind and light new energy projects:

+ Mahayana Wind Power Project
+ Mingyang Electric Co., Ltd.
+ Xuchang City Public Traffic Power Charging Construction

Automation field:

+ Huichuan Technology Co., Ltd.
+ Hekang New Energy Technology Co., Ltd.
+ Wolong Electric Group Co., Ltd.
+ Leadford Electric Technology Co., Ltd.
+ Shandong Xinfeng Electronics Technology Co., Ltd.
+ Shenzhen Kumark Drier & Automation
+ Shanghai Dongfang Electric

Metallurgy and petrochemical:

+ Shenhua Group
+ Yongfeng Iron and Steel Group Co., Ltd.
+ Harbin Electric Wind Energy Co., Ltd.
+ China Pingmei Shenma Group
+ China Shenhua Coal
+ Anyang Iron and Steel
+ State Grid Henan Electric Power Company

Business school program:

- Xinzheng South China City
- Xinzheng Wuyue Plaza
- The main venue of the National Peasant Games
- Zhengshang Stock Business Centers
- Jianye Group
- Yongwei Group
- CRCC No.18 Bureau Group
- Country Gradend Holdings Group
- Henan National University Science Park

Industrial manufacturing project:

- Puyang Longfeng Power Plant
- Xuchang Jinhui Stainless Steel Group Co., Ltd.
- Henan Zhigu Industrial Park
- Vietnam Tinh Bac Ninh Solar Project
- Philippine Paper Mill Powering System
- Geely Automobile Zhejiang Intelligent Plant

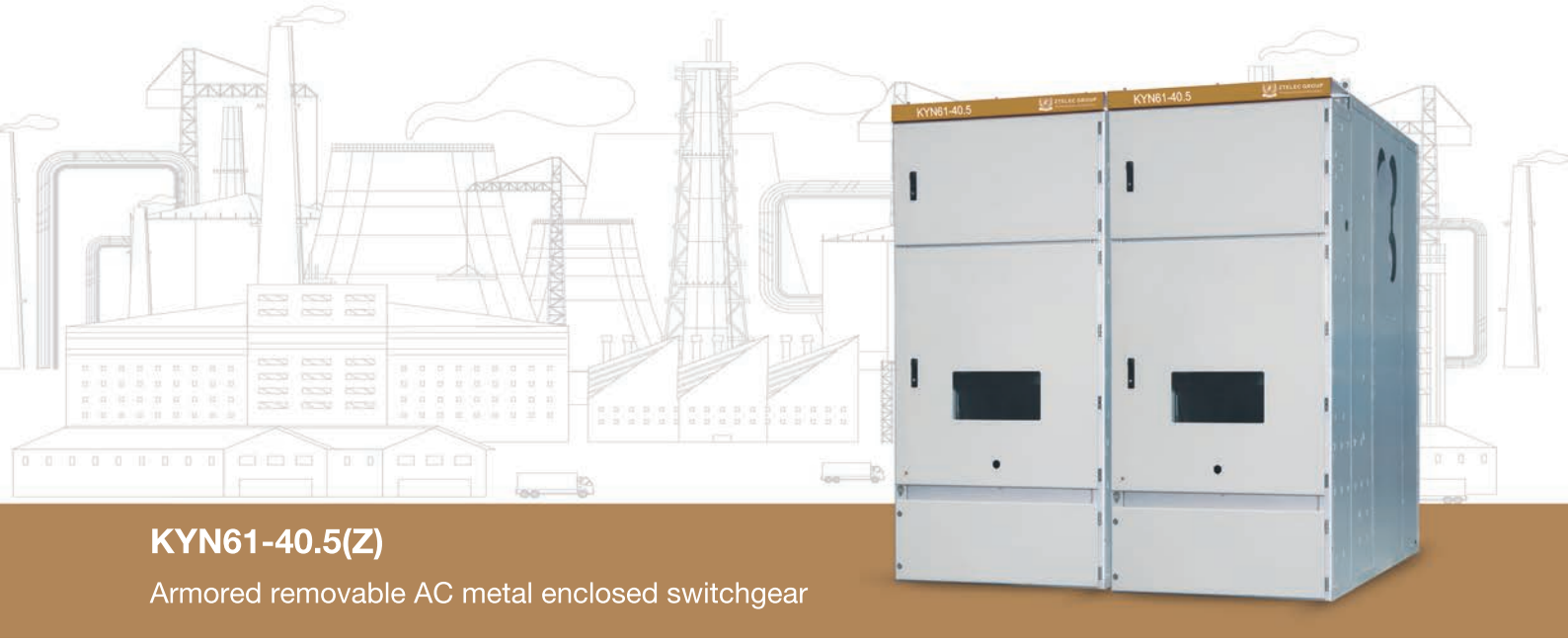
Pulp & Paper:

- Huatai Group
- Chenming Group
- Hengan Group
- Yinge Group
- Lee & Man Paper Mill
- Henli Group
- Yilin Paper Mill

ZTELEC GROUP
Powered Green & Reliability

ZTELEC is a top brand group company strongly supported by our own R&D team.

High voltage switch equipment



KYN61-40.5(Z)

Armored removable AC metal enclosed switchgear

Overview 概述

KYN61-40.5(Z) Armored removable AC metal enclosed switchgear (hereinafter referred to as switchgear) is an indoor complete set of power distribution equipment of three-phase AC 50 Hz and rated voltage of 40.5 kV used for receiving and distributing electric energy in power plants, transformer substations, mining and industrial enterprises, etc. It controls, protects and detects the circuits and is also applicable to frequent operation locations. This switchgear complies with GB3906, GB/T 11022, IEC62271, etc.

Type description 型号说明

K Y N 61 — 40.5 (Z) □ / □ □

- Rated short-circuit breaking current (kA)
- Rated current
- Type of circuit breaker
- Vacuum SF6 sulfur hexafluoride
- Rated voltage (kV)
- Design number
- Indoor
- Removable
- Metal armored

Features

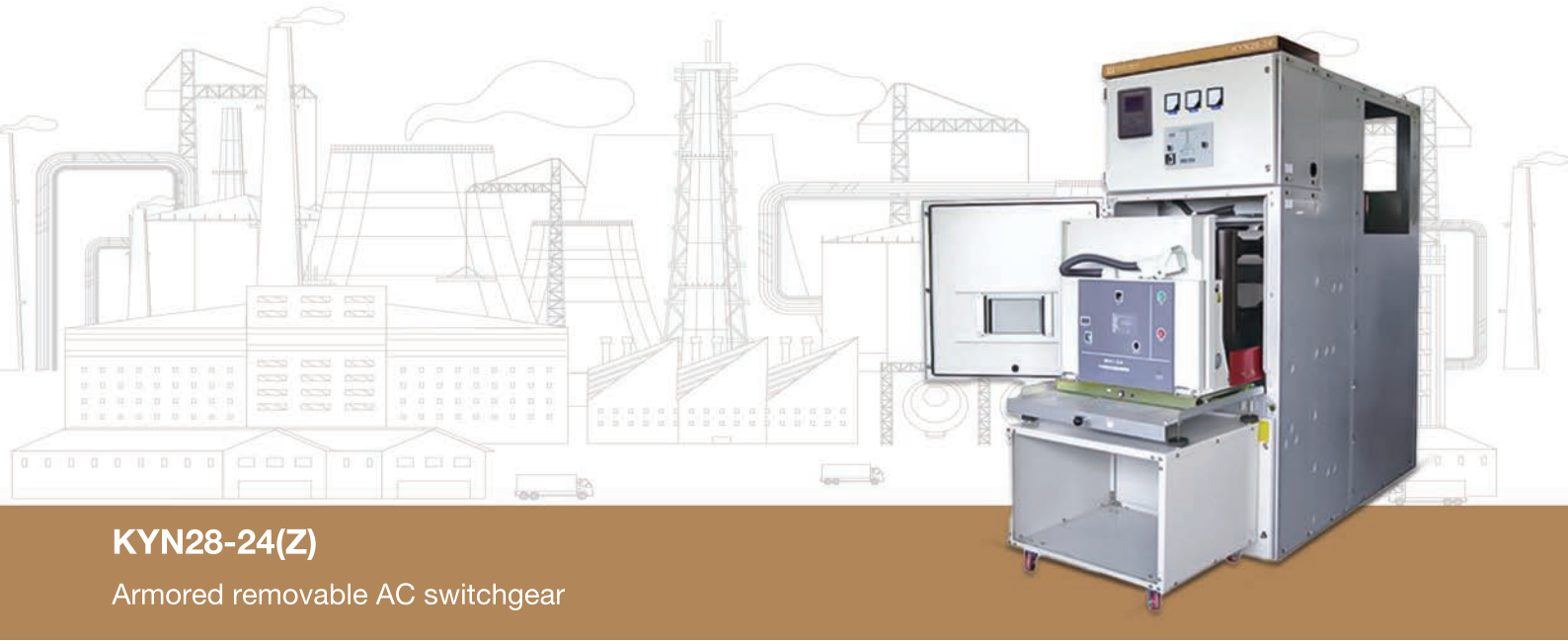
+ Cabinet structure adopts assembled type, the circuit breaker adopts floor type handcart structure;
+ Equipped with brand new composite insulated vacuum circuit breaker, featured with good interchangeability, and easy to change;
+ The hand cart frame is mounted with lead screw nut propelling mechanism, it is able to move the handcart easily, and prevent damage of propelling mechanism caused by misoperation;
+ All operations can be carried out when the cabinet door is closed;
+ Interlocking among the main switch, handcart and switchgear adopts compulsory mechanical locking mode, fulfilling the "five preventions" function;
+ Cable chamber is large enough, it could connect multi cables.

Vacuum circuit breaker main technical parameters

Name	Unit	Value
Rated voltage	kV	40.5
Rated frequency	Hz	50
Rated power frequency withstand voltage	kV	95/1min
Rated lightning impulse withstand voltage	kV	185
Rated current	A	1250 1600 2000
Rated short-time withstand current	kA	20 25 31.5
Rated short-time breaking current	kA	20 25 31.5
Rated peak withstand current	kV	50 63 80
Rated short-circuit duration	ms	4
Opening time	ms	30≤t≤60
Closing time	s	50≤t≤100
Rated short-circuit breaking current times	times	20
Mechanical life	times	10000

Vacuum switchgear main technical parameter

Name	Unit	Value
Rated voltage	kV	40.5
Rated current	A	1250 1600 2000
Rated frequency	Hz	50
Rated short-time withstand current	kA	20 25 31.5
Rated peak withstand current	kA	50 63 80
Rated power frequency withstand voltage	kV	95/1min
Rated lighting impulse withstand voltage	kV	185
Rated short-circuit duration	s	4
Degree of protection		IP3X



KYN28-24(Z)

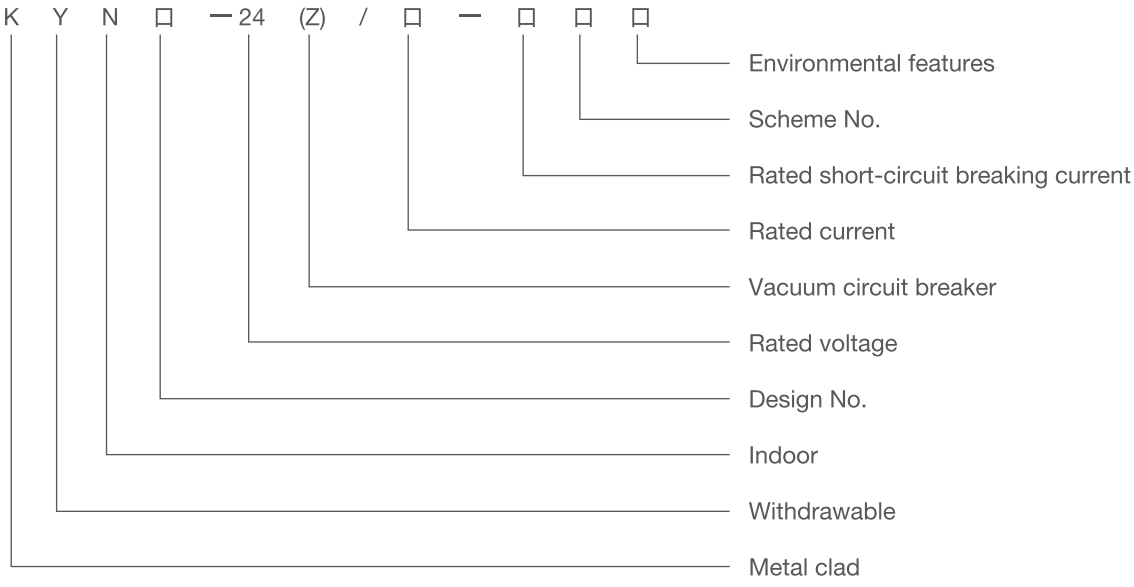
Armored removable AC switchgear

Overview

KYN28-24(Z) series armored moveable AC metal switchgear (hereinafter referred to as "switchgear") is a complete power distribution device for 20kV three-phase AC 50(60)Hz single bus and single bus section system. It is mainly used in power plants, power transmission of small and medium-sized generators, power distribution of industrial and mining enterprises, and power receiving and transmission of secondary substations in electrical systems, as well as starting of large high voltage motors, etc, to implement control protection and monitoring.

The switchgear features a “five-prevention” interlock function. It can prevent the circuit breaker from being pushed and pulled under load, avoid its misopening and misclosing, stop the ground switch from reclosing when it's open, keep people from mistakenly entering the live compartment, and preclude the ground switch from being wrongly opened when the power is on. Essentially, it is a high-performance power distribution device that complies with standards like GB3906, GB/T 11022, and IEC 62271.

Type description



Environmental conditions

a Ambient air temperature: - 15℃ ~+40℃ ;

b Altitude: ≤1000m;

c Relative humidity; daily≤95%, monthly≤90%;

d Seismic intensity: ≤ 8°;

e The installation site should be free of fire, explosive danger, serious pollution, chemical corrosion or severe vibration;

Note: Please negotiate with us if your product is used beyond the range of above conditions.

The main technical parameters

Name	Unit	Value
		Matched circuit breaker
Rated voltage	kV	24kV
1min power frequency withstand voltage	kV	(50)65
Rated impulse withstand voltage(peak)	kV	125
Rated frequency	Hz	50(60)
Rated current	A	630 1250 1600 2000 2500 3150
Rated current of branch busbar	A	630 1250 1600 2000 2500
Rated short-time withstand current	kA	16 20 25 31.3
Rated peak withstand current	kA	40 50 63 80
Rated short circuit duration	s	4
Protection level		The enclosure is IP4x and it is IP2X when the compartment door and circuit breaker chamber door are opened
Weight	kg	800 1000 Rated current above 1600A

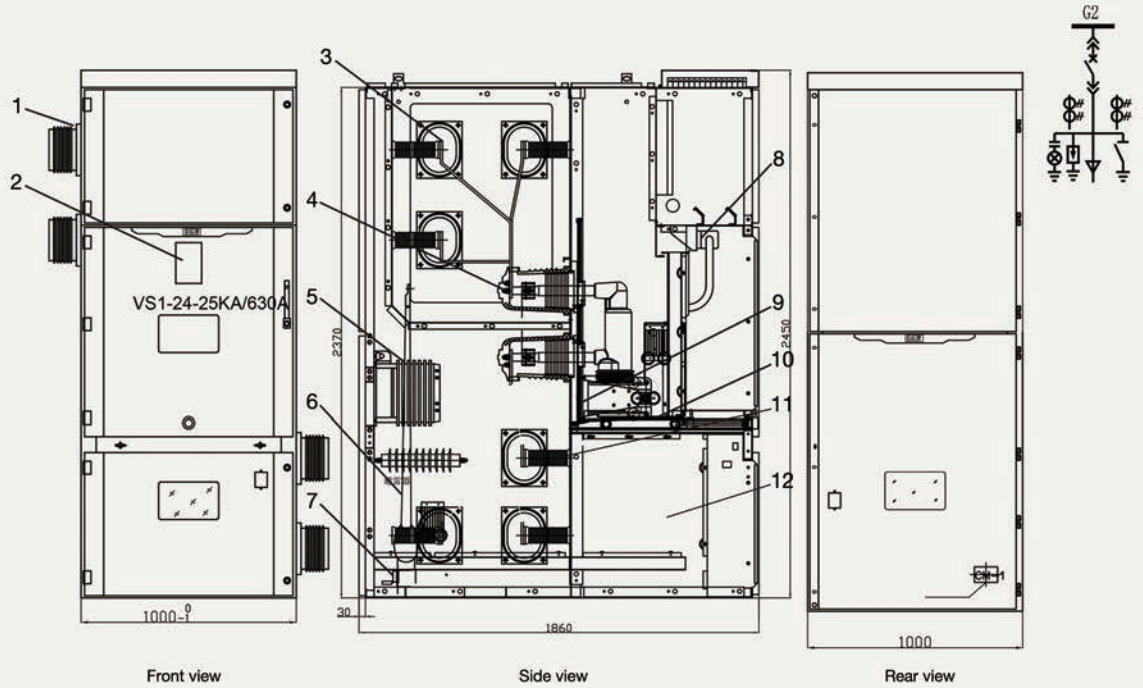
Product structure performance characteristics

1. Switchgear of 24kV with compact volume

Structure of this product is similar to that of mid-set switchgear of 12kV, the product is applicable to systems of 20kV and doesn't need composite insulation or interphase separator, bringing outstanding insulation performance.

2. Safe structure, flexible installation

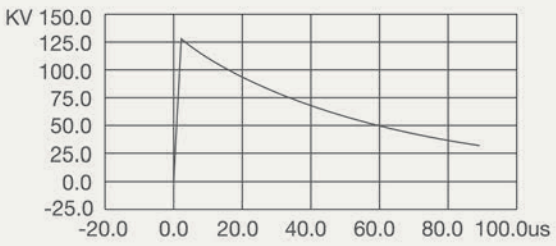
This switchgear is composed of two parts: cabinet body and mid-set withdrawable part (ie. handcart). The cabinet body is divided into four separate compartments, protection degree of the enclosure is IP4X, and it is IP2X when compartment doors and circuit breaker chamber door are opened. It has overhead incoming and outgoing line, cable incoming and outgoing lines and other function schemes, it can become a power distribution unit of different schemes and forms after permutation and combination. This switchgear can be installed, debugged and maintained from the front side, so it can be arranged in duplex by means of back-to-back or arranged against the wall, which not only improves its safety and flexibility, but also reduces the floor space.



Structure of drawing of switchgear

1. Wall bushing
2. Analog primary diagram
3. Main busbar
4. Contact box
5. Current transformer
6. Primary cable
7. Earthing busbar
8. Secondary interlocking assembly
9. Valve mechanism
10. Handcart of circuit breaker
11. Insulator
12. Framework of cabinet body

3. Lightning impulse resistant capacity



Upk=125.33kV
T1=1.11us
T2=45.45us

Full wave of lightning impulse of positive polarity

4. Various handcarts, convenient operation

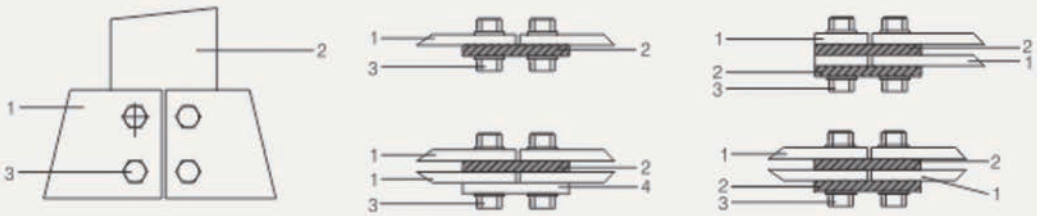
The frame of the handcart is also made of thin steel plate and assembled after being processed by CNC machine. The handcart is insulated with the cabinet, and the mechanical interlock is safe, reliable and flexible. According to the same purpose, handcart can be divided into circuit breaker handcart, voltage transformer handcart, isolation handcart, the same
specifications of the car can be replaced.

The handcar has a disconnect position, a test position and a working position in the cabinet body, and each position has a positioning device to ensure the reliability of interlocking. It must be operated according to the interlocking anti-misoperation procedure. All kinds of handcarts can be drew in and out by screw. The operation is easy and flexible for operators. When the cabinet needs to be removed by hand, a special transfer handcart can be used to conveniently take it out for various inspection and maintenance; and it adopts mid-set type, the size is small, with convenient inspection and maintenance.

Circuit breaker

Isolation handcart

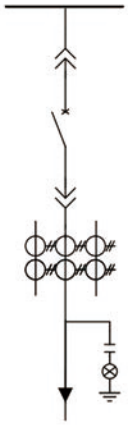
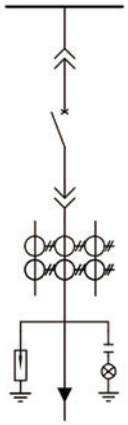
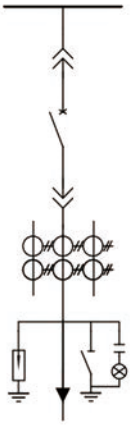
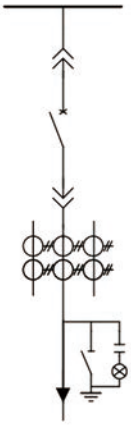
Voltage transformer handcart

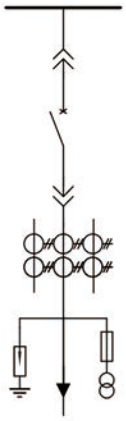
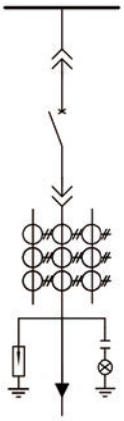
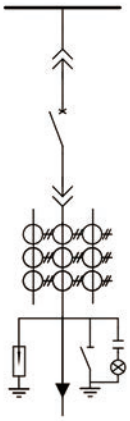
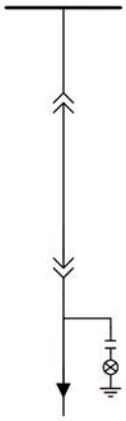


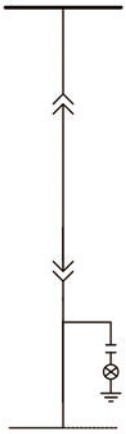
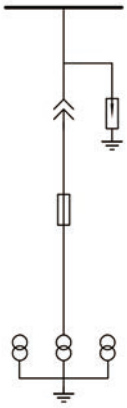
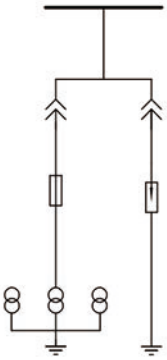
Connection mode between busbar and branch busbar

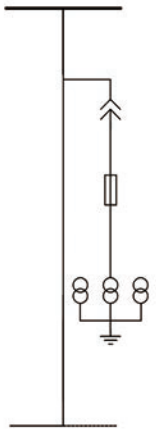
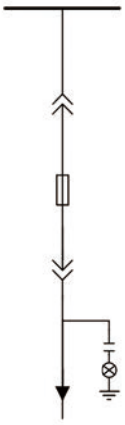
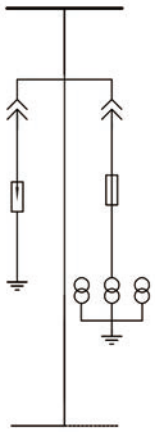
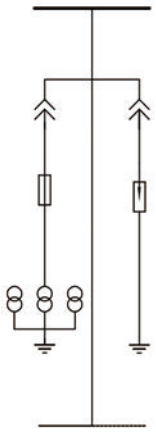
1 Main bus 2 Small branch bus 3 Bolt 4 Cushion block

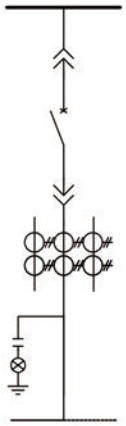
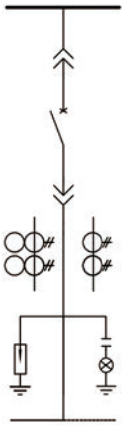
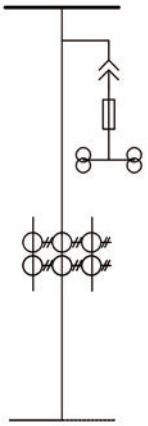
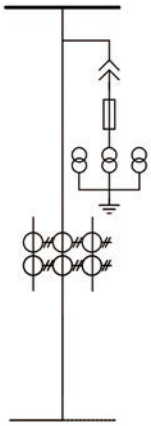
The main circuit scheme diagram

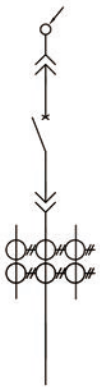
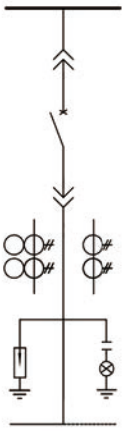
Scheme number		01	02	03	04
Primary wiring diagram					
Dimension (W×D×H) mm		1000×1820×2300	1000×1820×2300	1000×1820×2300	1000*1820*2300
Main electrical components	Rated current (A)	630-3150A			
	Vacuum circuit breaker	1	1	1	1
	Current transformer	2-3	2-3	2-3	2-3
	Voltage transformer				1
	High-voltage fuse				
	Earthing switch			1	1
	Lightning arrester			3	
Application		Power receiving & feeding	Power receiving & feeding	Power receiving & feeding	Power receiving & feeding
Remark					

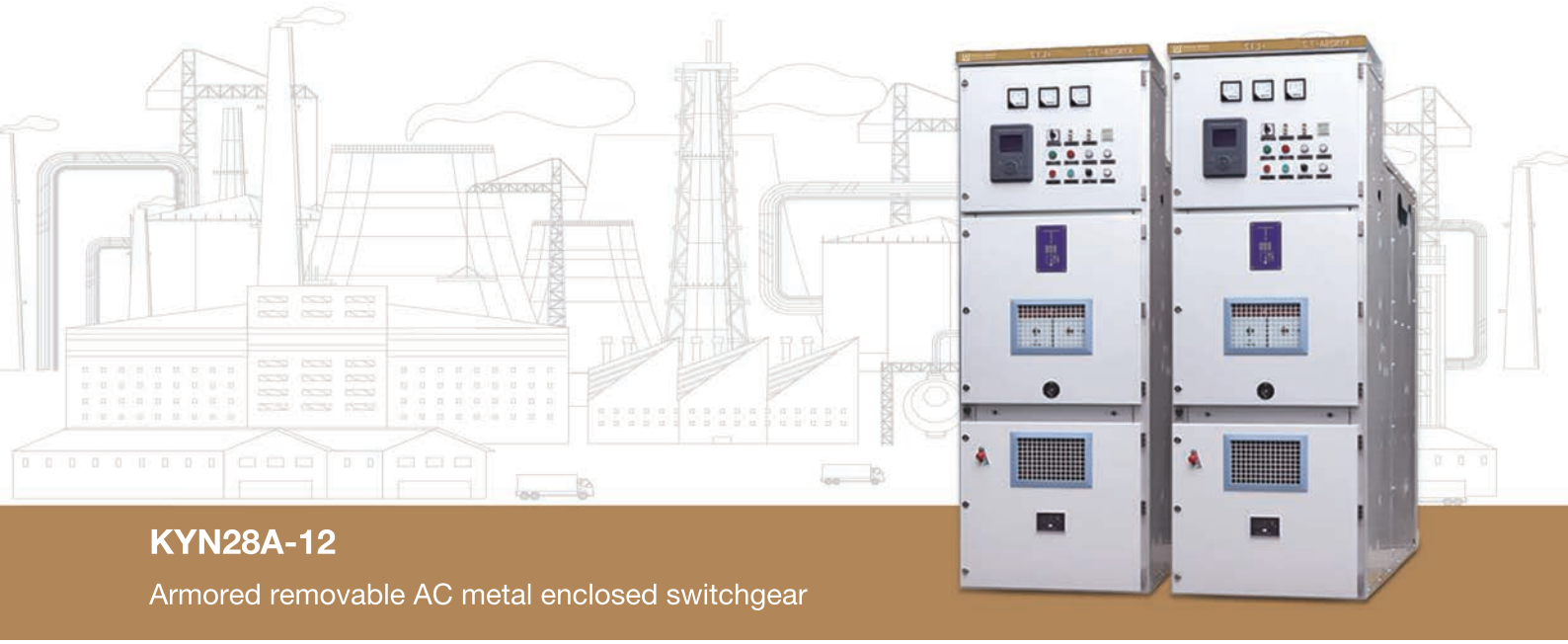
Scheme number		05	06	07	08
Primary wiring diagram					
Dimension (W×D×H) mm		1000×1820×2300	1000×1820×2300	1000×1820×2300	1000*1820*2300
Main electrical components	Rated current (A)	630-3150A			
	Vacuum circuit breaker	1	1	1	
	Current transformer	3	3	3	
	Voltage transformer	1			
	High-voltage fuse	2			
	Earthing switch			1	
	Lightning arrester	3	3	3	
Application		Power receiving & feeding	Power receiving & feeding	Power receiving & feeding	Isolation
Remark					

Scheme number		09	10	11	12
Primary wiring diagram					
Dimension (W×D×H) mm		1000×1820×2300	1000×1820×2300	1000×1820×2300	1000*1820*2300
Main electrical components	Rated current (A)	630-3150A			
	Vacuum circuit breaker				
	Current transformer				
	Voltage transformer		2-3	3	2-3
	High-voltage fuse		3	3	3
	Earthing switch				
	Lightning arrester				3
Application		Buscouple isolation	Voltage measurement	Voltage measurement	Voltage measurement
Remark					

Scheme number		13	14	15	16
Primary wiring diagram					
Dimension (W×D×H) mm		1000×1820×2300	1000×1820×2300	1000×1820×2300	1000*1820*2300
Main electrical components	Rated current (A)	630-3150A			
	Vacuum circuit breaker				
	Current transformer				
	Voltage transformer	3		3	3
	High-voltage fuse	3	3	3	3
	Earthing switch				
	Lightning arrester			3	3
Application		Measurement +liaison	Fuse	Measurement +liaison	Measurement +liaison
Remark					

Scheme number		17	18	19	20
Primary wiring diagram					
Dimension (W×D×H) mm		1000×1820×2300	1000×1820×2300	000×1820×2300	1000*1820*2300
Main electrical components	Rated current (A)	630-3150A			
	Vacuum circuit breaker	1	1		
	Current transformer	2-3	2-3	3	3
	Voltage transformer			2	3
	High-voltage fuse			3	3
	Earthing switch				
	Lightning arrester		3		
Application		Liaison	Liaison	Liaison+metering	Liaison+metering
Remark					

Scheme number		21	22	23	24
Primary wiring diagram					
Dimension (W×D×H) mm		1000×2150×2300	1000×2150×2300		
Main electrical components	Rated current (A)	630-3150A			
	Vacuum circuit breaker	1	1		
	Current transformer	2-3	3		
	Voltage transformer				
	High-voltage fuse				
	Earthing switch				
	Lightning arrester		3		
Application		Liaison	Overhead incoming line		
Remark					



KYN28A-12

Armored removable AC metal enclosed switchgear

Overview

This device is an indoor metal armored withdrawable switchgear (hereinafter referred to as switchgear), and it is a complete power distribution device for 3.6-12 kV three-phase AC 50Hz single busbar and single busbar segmental system. It is mainly used in power plants, small and medium-sized generators for power transmission, and power distribution for industrial and mining enterprises, and power reception and transmission of secondary substations in electrical systems, as well as starting of large high-voltage motors, etc. It is used for control, protection and monitoring.

This switchgear complies with standards like GB3906, GB/T 11022, and IEC62271. It features an interlock function that can prevent the circuit breaker handcart from being moved in or out while under load, avoid the circuit breaker's incorrect opening and closing, stop the circuit breaker from closing when the grounding switch is closed and the power is on, keep people from accidentally entering the live compartment, and preclude the grounding switch from being wrongly closed when powered. It can be fitted with either a VSI vacuum circuit breaker or ABB' s VD4 vacuum circuit breaker. Overall, it's a high-performance power distribution device.

Structure introduction

The switchgear is designed according to the armored metal - enclosed switchgear in GB3906 - 91. The switchgear body is composed of two parts: the cabinet body and the central withdrawable part (handcart), as shown in Figure 1. The cabinet is divided into four separate compartments. The protection level of the outer shell is IP4X, and it is IP2X when the doors of each small compartment and the circuit breaker door are opened. With overhead incoming and outgoing lines, cable incoming and outgoing lines and other functional schemes, it can form power - distribution units in various configurations through arrangement and combination. The switchgear can be installed, debugged and maintained from the front. So, it can be arranged in a double - row back - to - back configuration or installed against the wall, which improves the safety and flexibility of the switchgear and reduces the floor space.

Environmental conditions

a Ambient air temperature: upper limit +40°C, lower limit -15°C;

b Altitude:≤1000m;

c Relative humidity: the daily average relative humidity is not more than 95%, and the monthly average relative humidity is not more than 90%;

d Earthquake: the magnitude does not exceed 8;

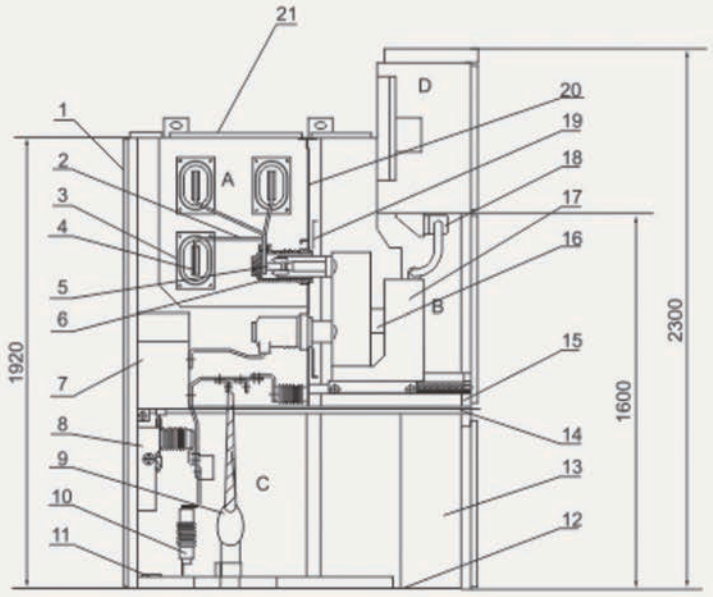
e The surrounding air should not be polluted by corrosive or combustible gases, water vapor, etc;

f There is no serious pollution and frequent severe vibration, and the severity design meets the requirements of category 1 under severe conditions.

The main technical parameters

Name	Unit	Data	
		Matched circuit breaker	
		ZN63A-12(VS1)	VD4
Rated voltage	KV	12	12
1min power frequency withstand voltage	kV	42	42
Rated impulse withstand voltage(peak)	kV	75	75
Rated frequency	Hz	50	50
Rated current	A	630、1250、1600、2000、2500、3150、4000、5000	
Rated current of branch busbar	A	630、1250、1600、2000、2500、3150、4000、5000	
Rated short-time withstand current (virtual value)	kA	16、20、25、31.5、40、50	16、20、25、31.5、40、50
Rated peak withstand current	kA	40、50、63、80、100、125	40、50、63、80、100、125
Rated short circuit duration	S	4	
Protection level		The sell is IP4X and it is IP2X when the compartment door and handcart door is opened	
Weight	kg	700-1200	700-1200

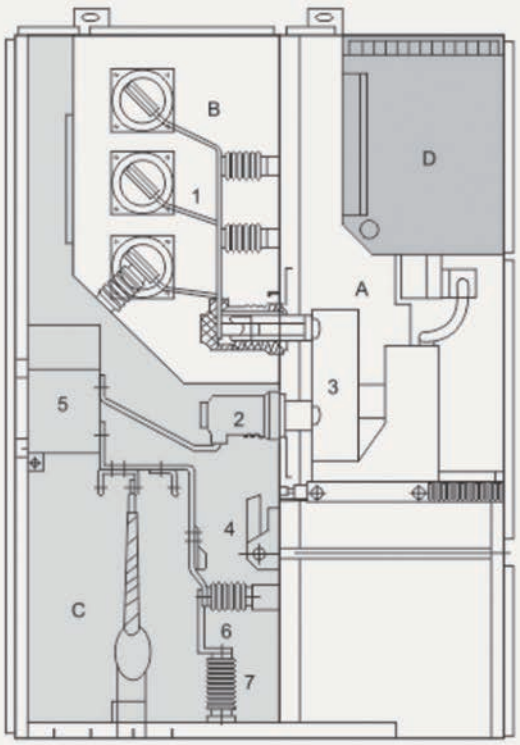
Switchgear structure diagram



- A Busbar room
- B Circuit breaker handcart room
- C Cable room
- D Relay instrument room

1. Shell
2. Branch small busbar
3. Busbar bushing
4. Main busbar
5. Static contact device
6. Contact box
7. Current transformer
8. Earthing switch
9. Cable
10. Lightning arrester
11. Earthing main busbar
12. Baseplate
13. Control small busbar
14. Earthing switch operating mechanism
15. Withdrawable horizontal partition
16. Heating device
17. Circuit breaker handcart
18. Secondary plug
19. Partition (valve)
20. Detachable partition
21. Pressure release channel

Switchgear Boundary Dimensions



A Hand cart

B Busbar chamber

C Cable chamber

D Relay instrument chamber

E Pressure release device

A. Handcart

The frame of the handcart is made of thin steel plates processed by CNC machine tools and then riveted and welded. According to the application, handcarts can be divided into circuit breaker handcarts, voltage transformer handcarts, isolation handcarts, metering handcarts, etc. Handcarts of the same specification can be replaced. The handcart has an isolation position, a test position and a working position in the cabinet, and each position is equipped with a positioning device to ensure that the handcart cannot be moved casually when it is in the positions mentioned above, and the interlock must be released when the handcart is moved.

B. Busbar chamber

The busbar is led from one switchgear to another, and fixed by the branch busbar and the static contact box. The flat branch busbar is connected to the static contact box and the main busbar by bolts, without any other clamp or insulator connection. When the user and project have special needs, the connecting bolts on the busbar can be encapsulated with insulation and end caps. When the busbar passes through the partition of the switch cabinet, fix it with the busbar bushing. If an internal fault arc occurs, it can limit the accident from spreading to adjacent cabinets and ensure the mechanical strength of the busbar.

C. Cable chamber

Current transformers, grounding switches, lightning arresters and cables can be installed in the chamber, and a detachable aluminum plate with slots can be prepared at the bottom to ensure convenient construction on site.

D. Relay instrument chamber

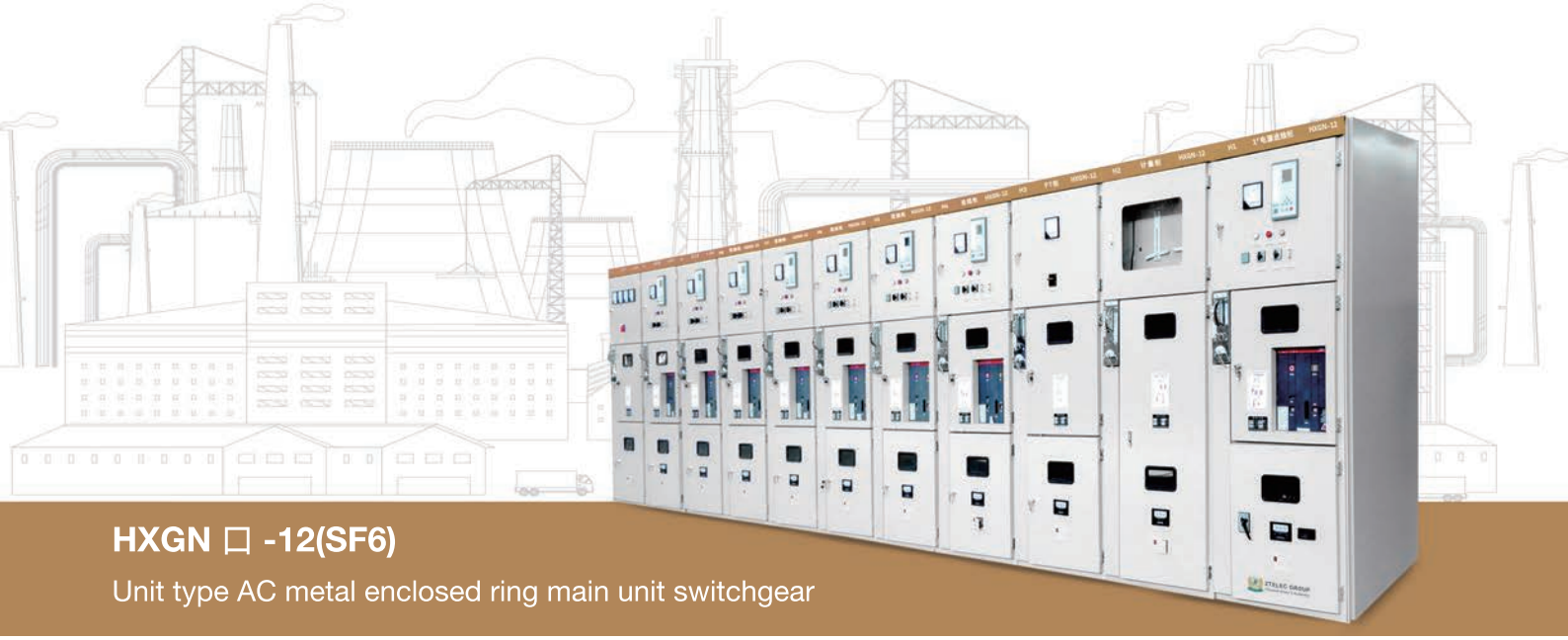
The relay instrument chamber is used to install various components such as relays, instruments, signal indicators, and operation switches. In addition, a small busbar room can be added on the top of the instrument room according to users' requirements, and sixteen control small busbars can be laid.

E. Pressure relief device

Current transformers, grounding switches, lightning arresters and cables can be installed in the chamber, and a detachable aluminum plate with slots can be prepared at the bottom to ensure convenient construction on site.

Lock device

The connection between the middle door and the cabinet body adopts a lock structure, and is equipped with a lifting mechanism, which makes the opening of the middle door more convenient. When the middle door is closed, the connection strength between it and the cabinet body is better, which enhances the ability to effectively combat internal arcing faults.



HXGN □ -12(SF6)

Unit type AC metal enclosed ring main unit switchgear

Overview

HXGN □ -12(SF6) Unit type AC metal enclosed ring main unit (hereinafter refer to as ring network cabinet) is a new generation of high-voltage electric appliance product designed and developed independently by our company according to the requirement of the domestic agricultural electricity and the city net transformation after introduction of overseas advanced technology. Each technical performance index completely reaches the IEC62271 and GB3906 standard.

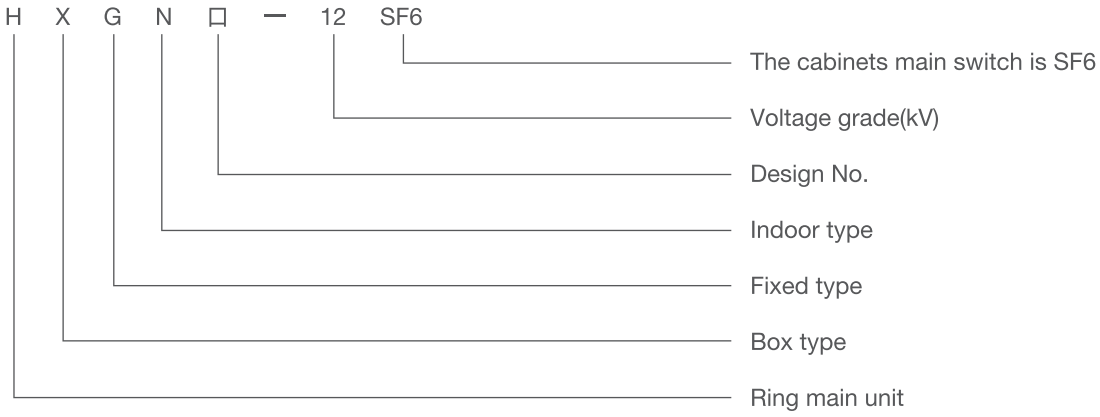
The main switch, operation mechanism and components of ring main unit is made of the ABB Corporation original parts or the SFL-12/24 switch equipment imported overseas and assembled at home. We can also install the ABB Corporation original parts of HAD/US type SF according to the request of users. The operation of circuit breaker or VD 4-S vacuum circuit breaker is divided into two modes: manual and electrical operation.

The cabinet body is riveted after processed by CNC machine tool with reliable mechanical interlocking and misoperating prevention function. The protection level reaches IP3X. This product has the remarkable characteristics such as the small volume, light weight, attractive appearance, simple operation, long life, high parameter with no pollution and maintenance-free.

Application

HXGN □ -12 (SF6) unit type AC metal ring-network switchgear is suitable for AC 50Hz, 12Kv, serving as device of receiving and distribution of electrical energy.

Type description



Environmental conditions

a Surrounding air is free from corrosive gas or flammable gas, steam and other obvious pollution;

b Relative temperature: the daily average value ≤95%, the monthly average value≤90%;

c The altitude should not exceed 2000m;

d Without frequent vibration;

e Surrounding air temperature：-15℃ ~+40℃ .

Structutal features and working principle

This ring network type cabinet makes air as the insulating medium and it is mainly assembled with ZFN 口 -10/630 type vacuum load switch. And there are two cabinet schemes-incoming cabinet and outgoing cabinet.

1. Incoming cabinet scheme

There is a ZFN 口 -10/630 type vacuum load switch on the main circuit inside the cabinet with isolating knife, and grounding knife. They are all installed in one machine stand and they are interlocked, realizing the connection of three working stations of busbar, isolation and grounding. Inside the cabinet, components such as CT, PT can be installed flexibly.

2. Outgoing cabinet scheme

There is a ZFN □ -10/630 type vacuum load switch, fuse with striker (used as isolating switch) and grounding knife on the main circuit inside cabinet, and the operation of three working stations can be realized. Inside the cabinet the components such as CT/PT and ZNO arrester can be installed flexibly, so the metering cabinet can be removed. Inside the incoming cabinet and outgoing cabinet, there is insulating protection baffle interlocked with grounding switch. And inside the cabinets, the mechanical interlocks are adopted between each switch and baffle as well as the cabinet door with the requirement of “five-prevention” and IP2X of the protection degree of the cabinet enclosure.

Maintenance and repair

1 After the cabinet is opened, check all of the insulation parts and disassemble the damp insulation parts, put them into 70-80℃ drying box, and take them out for debugging again after 48 hours drying.

2 If the product is damp or rusty during the storage, please clean it at once and protect it well.

3 Maintenance and inspection should be done regularly on ring network cabinet during operation.

(1) Vacuum degree of vacuum arc-extinguishing room;

(2) Contact abrasion degree;

(3) Whether the fastening pieces are loose or not;

(4) Mechanical electric parameter such as opening range, overrun;

(5) Whether the running is flexible or not;

(6) Whether the interlock is reliable or not;

(7) Whether all parts are clean,especially the insulation fittings.

4 Conduct overall examination and debugging to ring network cabinet in following conditions:

(1) Routine examination and cleaning once a year;

(2) After every 2000 times operation of load switch.

Storage

Ring network cabinet should be stored in the dry and ventilated warehouse with temperature of -15℃ ~+40℃ .

Accompanying documents

1 Certificate of quality

2 Installation and operation instruction

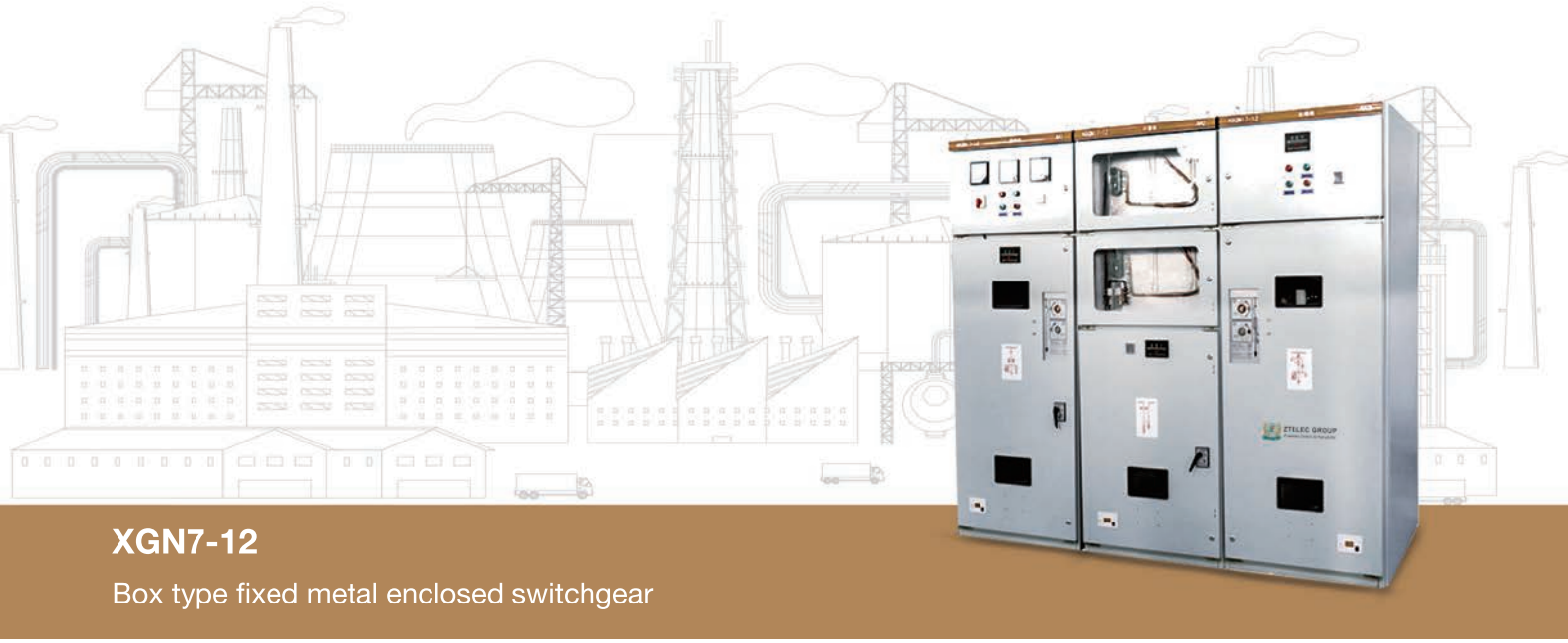
3 Packing list

4 Appending accessories list

5 Secondary connection diagram

The main technical parameters

Item	Unit	Parameters
Rated voltage	kV	12
Rated frequency	Hz	50
Rated current of main busbar /Max rated current of fuse	A	630/125
Rated short time withstand current of main circuit and earth circuit	kA/s	20/3
Rated peak withstand current of main circuit and earth circuit	kA	50
Rated short-circuit making current of main circuit and earth circuit	kA	50
The opening times of the load switch with full capacity	次	100
Fuse breaking current	kV	31.5&40
Rated closed loop breaking current	A	630
Rated transfer current	A	1600
Mechanical life	次	2000
1min power frequency withstand voltage (peak value) between phases, phase and earth / phase and isolation fracture	kV	42/48
Lighting impulse withstand voltage (peak value) between phases, phase and earth / phase and isolation fracture	kV	75/85
Secondary loop 1min power frequency withstand voltage	kV	2
Protection level	IP3X	



XGN7-12

Box type fixed metal enclosed switchgear

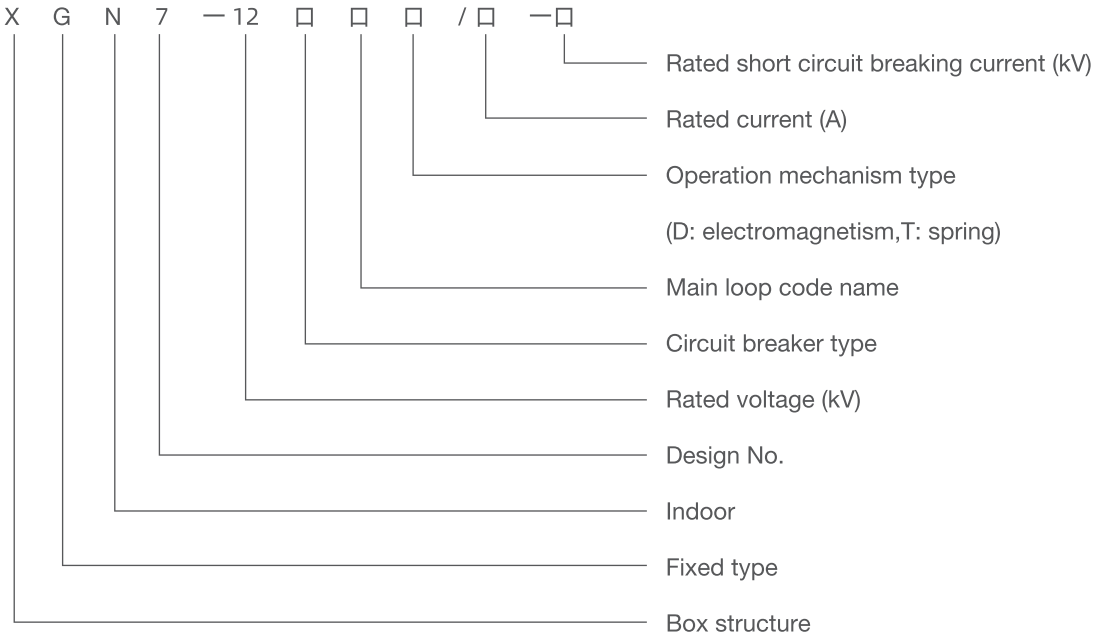
Overview

The XGN7-12 box fixed-type metal-enclosed switchgear (switch cabinet for short) is used to receive and distribute electrical energy in 3.6kV, 7.2kV and 12kV three-phase AC 50Hz systems, especially in the frequent operation occasions. Its busbar system is a single busbar system (it can be extended to a single busbar with branches or a double busbar structure).

This switch cabinet conforms to the requirements of national standard GB 3906-91 3-35kV AC Metal-enclosed Switchgear and the international standard IEC62271, and has the function of “five prevention”.

The main switch of this switch cabinet adopts ZN28A-12 or ZN22-12 series vacuum circuit breakers, and is equipped with CD17A electromagnetic operating mechanism and CT19B spring operating mechanism. The disconnecting switch adopts GN30-12 rotary type and GN22-10 heavy current series products.

Type description



Environmental conditions

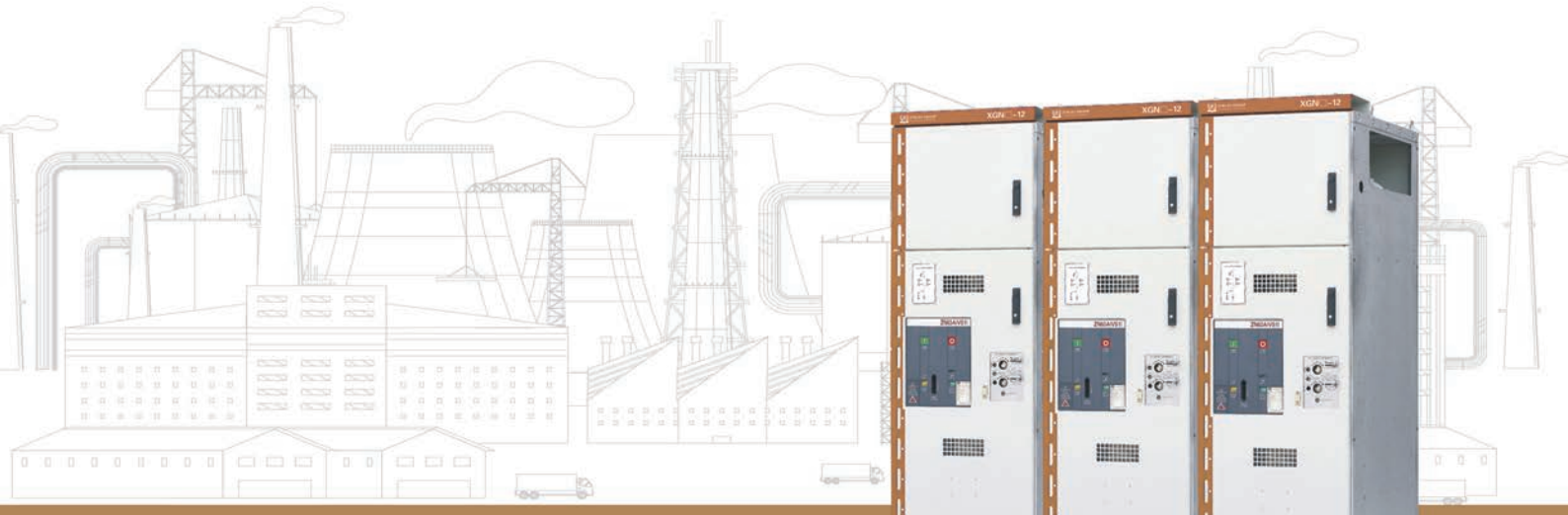
a Ambient temperature：-15℃ ~+40℃ ;

b Altitude ≤ 1000m;

c Relative environment humidity：The daily relative humidity average ≤95%; The monthly relative humidity average ≤ 90%;

d The earthquake magnitude ≤ 8;

e Places free of fire, explosion, chemical corrosion and fierce vibration and the pollution grade not beyond 3 level.



XGN □ -12

Fully sealed fully insulated inflatable ring main unit switchgear

Overview

XGN □ -12 series fully insulated and enclosed ring network switchgear is SF6 gas insulated metal common box closed switchgear, which is composed of load switch unit, load switch and fuse combination electrical unit, vacuum circuit breaker unit, busbar incoming line unit and other modules. It uses a range of advanced technologies and materials, and has excellent electrical properties and mechanical properties .The performance is slightly affected by the environment and climate. It is small and compact, easy for operation, no aintenance and has flexible combination. Clear and intuitive design ensures easy and direct operation. It has a large feeder wiring capacity and is suitable for a variety of wiring systems.

Type description

XGN □ 12/24 CFV

- CFV — Combination scheme
- 12/24 — Voltage level (kV)
- □ — C-GIS fully insulated switchgear
- XGN — Enterprise code

Four core competitiveness

1 Operational safety. Through the following security measures, we can provide users with special security guarantee:

(a) Integrated three-position load switch;

(b) The circuit breaker with a load - switch replacing the isolation switch is safer and more reliable;

(c) Primary-side fully enclosed design provides protection against accidental contact;

(d) Mechanical interlock to meet the requirements of five-prevention;

(e) Charged display can provide instructions for electrification on the incoming and outgoing lines.

2 Reliable operation. Fully sealed design, all 10kV switches and busbar charged bodies are sealed in the air box welded with 3mm stainless steel plate; equipped with silicone rubber cable plug to realize the cable head sealed, so that it is not affected by dust, moisture, small animals and other external environment:

(a) Spring energy storage operating mechanism, can be manually or electrically operated;

(b) Panel model line diagram provides switch position indication;

(c) Cabinet is made of galvanized sheet, electrostatic spraying on the surface to enhance corrosion resistance;

(d) The pressure gauge monitors the safe pressure range of SF6 gas in the box.

3 Economy:

(a) Maintenance-free;

(b) High reliability;

(c) Service life up to 20 years.

4 The program is flexible:

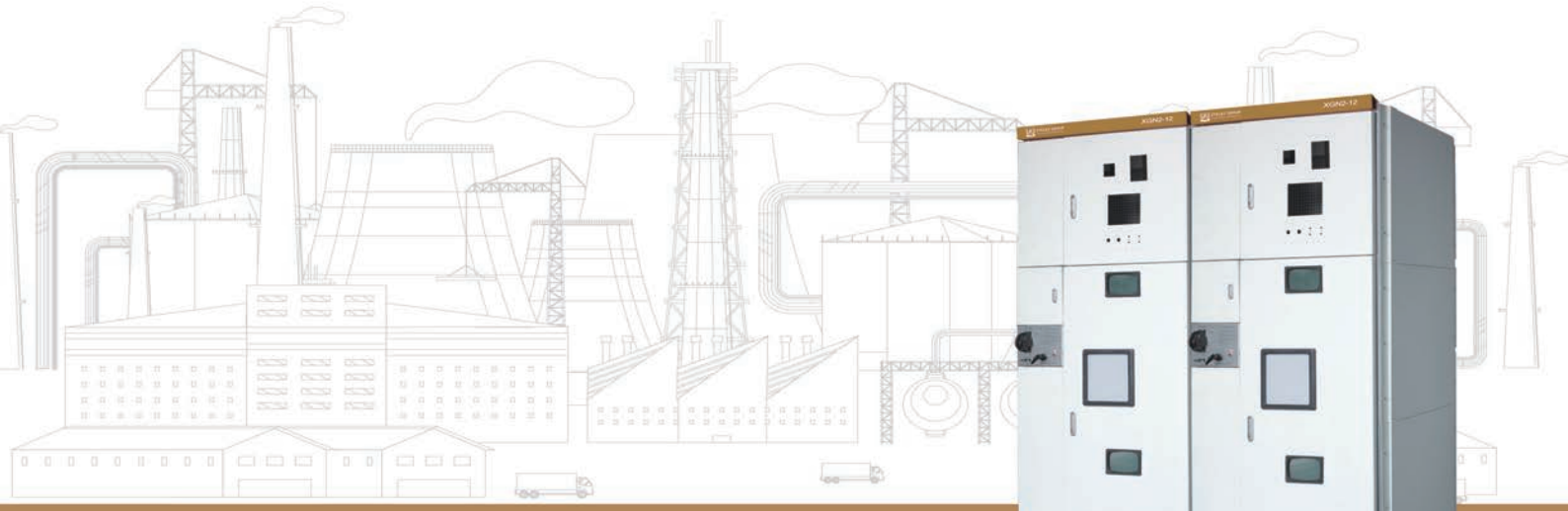
(a) Multiple incoming ways from left, right, up or front;

(b) Multiple combinations, any combination between the units can be achieved;

(c) Insulation busbars can be used to combine front and back cabinets or left and right cabinets;

(d) Flexible design;

(e) Optional arrangement of spring mechanism and permanent magnet mechanism.



XGN-12

Intelligent solid insulation cabinet

Overview

XGN-12 series solid fully insulated and closed ring network switchgear is a kind of solid insulation vacuum switchgear with full insulation, full seal and maintenance-free. All high-voltage live parts are cast and moulded using epoxy resin material with excellent insulating property, which organically integrates the vacuum arc extinguishing chamber, main electric circuit and insulation support, and the functional units are connected by fully insulated solid busbars. Therefore, the whole switchgear is not affected by external environment, which can ensure the reliability of equipment operation and the safety of operators.

The ring network cabinet has the characteristics of simple structure, flexible operation, reliable interlocking and convenient installation. It is suitable for 50Hz and 12kV power systems and is widely used in industrial and civil cable ring networks and distribution network terminal engineering, as the receiving and distribution of electric energy. And it is especially suitable for power distribution in urban residential areas, small substations, opening and closing stations, cable branch boxes, box-type substations, industrial and mining enterprises, shopping malls and airports, subways, windpower generation, hospitals, stadiums, railways, tunnels and other places.

Because the product has the advantages of full insulation, full sealing and full shielding, it is especially suitable for the places with high altitude, high temperature, damp heat, severe cold and severe pollution.

Type description

XGN -12

- -12 — Rated voltage (kV)
- XGN — Fixed type

Category

According to switches type, it is divided into load switches with grounding assembly (C module for short), load switches without grounding assembly (CB module for short) and circuit breakers with grounding assembly (V module for short), circuit breaker without grounding assembly (VB module for short), circuit breaker interconnection switch (VZ module for short), load switch+fuse combination electrical switch assembly (F module for short) and isolating switch assembly (G module for short).

Environmental conditions

a Ambient temperature : -15°C to +45°C;

b Humidity : Maximum average relative humidity, with a daily average of 95% or below and a monthly average of 90% or below;

c Altitude : below 1000 meters;

d Seismic resistance : 8 degree;

e Protection level : live body seal IP67, fuse barrel IP67, switch cabinet shell IP3X.

Application fields

+ Low temperature and cold areas: there is no application of SF6 gas, so it can run normally at -15℃ without considering the low temperature operation of SF6.

+ Plateau area: it is unnecessary to consider the influence of plateau atmospheric pressure on insulation performance.

+ Strong sandstorm area: the safety protection level of the solid insulation ring network cabinet body is IP67, and the control loop room adopts special treatment to ensure long-term operation in strong sandstorm areas.

+ Coastal wet area: sealed with epoxy resin, resistant to moisture and salt spray corrosion, ensuring long-term use in coastal areas.

+ Areas with high environmental protection requirements: The influence of SF6 gas on atmospheric warming has been paid great attention to, and SF6 gas has been eliminated in solid ring network cabinets, thus causing no pollution and harm to the environment and people.

+ In the smart grid: since the main switch and isolating switch can be electrically operated, remote control, telemetry, and telecommunication of switching equipment and substation sites can be realized, which can not only carry out decentralized control, but also facilitate centralized control.

The main technical parameters

Projects	Unit	Parameters
Conventional		
Rated voltage	kV	12
Rated frequency	Hz	50
Power frequency withstand voltage	kV/min	42/48
Lightning impulse withstand voltage	kV	75/85
Arc duration	S	≥0.5
Protection grade of primary components (except metering cabinet)		IP67
Cabinet protection level		IP4X
Protection level between compartments		IP2X
Operating supply voltage	V	DC24、48、110、220
		AC110、220
Busbar system		
Rated current	A	630(1250)
Rated short-time withstand current	kA/s	20/4(25/4)
Rated peak withstand current	kA	50(63)
Load switch unit		
Rated current	A	630
Rated short circuit making current	kA	50
Rated short-time withstand current	kA/s	20/4
Mechanical life of load switch	times	
Electrical life of load switch	times	E3
Partial discharge	PC	≤5
Circuit breaker unit		
Rated current	A	630(1250)
Rated short circuit breaking current	kA	20(25)

The main technical parameters

Projects	Unit	Parameters
Rated short circuit making current	kA	50(63)
Rated short-time withstand current	kA/s	20/4(25/4)
Mechanical life of circuit breaker	times	20000
Circuit breaker electrical life	times	E2
Rated operating sequence		O-0.3s-CO-180s-CO
Partial discharge	PC	≤5
Load switch-fuse combination electric unit		
Rated current(maximum)	A	200
Rated short circuit breaking current	kA	31.5
Rated short circuit closing current	kA	80
Partial discharge	PC	3150
Isolating switch		
Rated current	A	630/1250
Rated short-term withstand current	kA	20/25
Rated short time duration	s	4
Rated withstand current peak	kA	50/63
Mechanical life	times	3000
Earthing switch		
Rated current	A	630/1250
Rated short-term withstand current	K	20/25
Rated short time duration	s	4
Rated peak withstand current	K	50/63
Rated short-circuit making current (peak value)	kA	50
Rated short-circuit making current (times)	times	2
Mechanical life	times	3000

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ZTELEC is a top brand group company strongly supported by our own R&D team.

Low-voltage switchgear

GCK

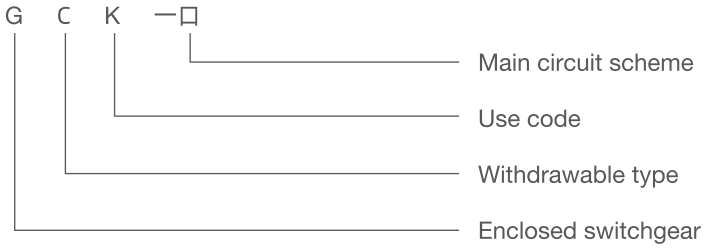
low voltage withdrawable switchgear

Overview

GCK LV withdrawable switchgear is applicable to the low voltage distribution system with AC 50Hz, rated working voltage of 380V. It contains power center (PC) and motor control center (MCC) functions. Each technical parameter meets national standards. With characteristics of advanced structure, attractive appearance, high electric performance, high protection level, reliable and safe, and easy to maintain, it is the ideal distribution device for low voltage power supply systems in metallurgy, petroleum, chemical, power, machinery and light weaving industries, etc.

The product accords with standards IEC61439, GB7251.1.

Type description



Features

+ GCK1 and GCJI are assembled-type combined structures. The basic framework is assembled by adopting special bar steel;

+ Cabinet framework, component dimensions and hole sizes change according to basic modulus E=25mm;

+ In the MCC project, cabinet is divided into five zones (compartments): the horizontal busbar zone, the vertical busbar zone, the function unit zone, the cable compartment, and the neutral earthing busbar zone. Each zone is isolated mutually for the circuit's normal running and effectively prevents fault expansion;

+ All structures of the framework are connected and fastened by bolts, so this method avoids the welding distortion and stress, and improves the precision;

+ Components have strong universality, good applicability and a high degree of standardization;

+ Insertion and extraction of the function unit (drawer) adopts lever-operated mechanism, which is easy and reliable, especially with the application of rolling bearing.

Environmental conditions

a Altitude above sea level should not exceed 2000m;

b Ambient air temperature: -15℃ ~+40℃ and the average temperature ≤+35℃ in 24h;

c Atmospheric condition: air is clean, relative humidity is lower than 50% at +40℃ , and higher relative humidity is allowed at lower temperatures, eg. 90% at +20℃ ;

d Places without fire, explosion risk, serious pollution, chemical corrosion, and fierce vibration;

e The installation gradient should not exceed 5°;

f The control center is suitable for transportation and storing at the following temperatures: -25℃ ~+55℃ , in short time (within 24h), it should not exceed +70℃ .

The main technical parameters

Projects	Parameters
Protection level	IP40, IP30
Rated working voltage	AC, 380 (V)
Frequency	50Hz
Rated insulation voltage	660V
Working conditions	
Environment	Indoors
Altitude	≤2000m
Ambient temperature	-5℃ ~+40℃
The min. temperature under store and transportation	-30℃
Relative humidity	≤90%
Capacity of control motor (kW)	

Projects		Parameters
Rated current（A）		
Horizontal busbar		1600, 2000, 3150
Vertical busbar		630, 800
Control connector of main circuit		200, 400
Feeding circuit		1600
Max. current	PC cabinet	630
Power receiving circuit	MCC cabinet	1000, 1600, 2000, 2500, 3150
Rated short time withstand current (kA)		
Virtual Value		50, 80
Peak value		105, 176
Power frequency withstand voltage (V/1min)		2500

GCS low-voltage
withdrawable switchgear

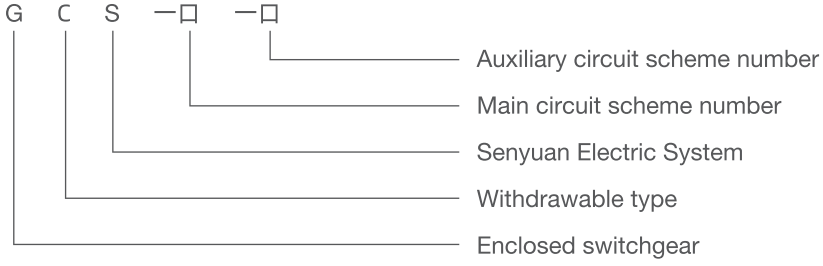
Overview

The GCS LV withdrawable switchgear (hereinafter referred to as the device) was developed according to the requirements of the industry's competent department, numerous electric users and the design unit by the original state mechanical department and the united design group of the power department. It conforms to national conditions and has a higher technical performance index, and adapts to the demands of power market development and is able to compete with available imported products.

The device is applicable to the distribution systems of power stations, petroleum, chemical engineering, metallurgy, weaving, and high-rise building industries. In the places that have high automaticity and need computers to join, such as large-scale power stations and petrochemical industry systems, it is the low-voltage complete distribution device that is used in the generating and power supply systems with three-phase AC 50(60) Hz, rated working voltage of 380V, rated current of 4000A and below for distribution, motor central control, and reactive power compensation.

The device complies with standards IEC61439 and GB 7251.1.

Type description



Features

+ The main framework adopts 8MF profile steel. Both sides of the profile steel are punched with ϕ9.2mm mounting holes, with a modulus of 20mm and 100mm respectively. Inner installation is flexible and easy.

+ There are two types of assembly form design for the main framework, full assembly structure and partial (side frame and cross rail) welding structure for users to select.

+ Each function compartment of the device is isolated. There are three parts: function unit compartments, busbar compartments, and cable compartments. Each compartment has a relatively independent function.

+ Horizontal busbar is arranged horizontally in the back of the cabinet, to increase its ability to resist electrodynamic force. It is the basic measure to obtain high short-circuit strength capacity for the main circuit.

+ The cable compartment design makes it convenient for cable incoming and outgoing from upper and lower part.

Environmental conditions

a Altitude above sea level should not exceed 2000m;

b The installation gradient should not exceed 5°;

c Ambient air temperature: -15℃ ~+40℃ and the average temperature should not exceed +35℃ in 24h;

d At maximum temperature, relative humidity should not exceed 50%. Higher relative humidity is allowed at lower temperatures, eg. 90% at +20℃ . But in view of the temperature change, it is possible that moderate condensation will be produced casually;

e The installation gradient should not exceed 5°;

f There is no dust, corrosive gases, or rainwater indoor.

The main technical parameters

Items		Parameters
Rated voltage of main circuit		AC 380 (400), (660)
Rated voltage of auxiliary circuit (V)		AC 220, 380 (400) DC 110, 220
Rated frequency (Hz)		50 (60)
Rated insulation voltage(V)		660 (1000)
Rated current(A)	Horizontal busbar	≤4000
	Vertical busbar	1000
Busbar rated short-time withstand current(kA/1s)		50, 80
Rated peak withstand current of busbar(kA/0.1s)		105, 176
Power frequency withstand voltage(V/1min)	The main circuit	2500
	Auxiliary circuit	2360
Busbar	Three-phase four-wire	A.B.C.PEN
	Three-phase five-wire	A.B.C.PE.N
Protection level		IP30, IP40

MNS

low-voltage withdrawable switchgear

Overview

The MNS LV withdrawable switchgear (hereinafter referred to as the device) is manufactured with standard modules through referring to the MNS series low voltage switchgear of the Swiss ABB Company and synthetically optimized. The device is intended as a control device for various power generation, transmission, distribution, and power consumption devices in systems with AC 50Hz and rated working voltages up to 660V. It is widely used in the low voltage distribution systems of various mining enterprises, tall buildings and hotels, municipal constructions, etc. Apart from being used on land, it can also be used in marine drilling platforms and nuclear power stations after special treatment.

The device complies with international standard IEC61439 and national standard GB7251.1.

Structural features

The device's basic framework is an assembled structure. Zinc-plated cabinet structural parts are connected and fastened into a basic framework with self-tapping screws or 8.8 grade square corner screws.

Furthermore, according to the change of the scheme, corresponding gate, closing board, baffle plate, installation support, and bus bar, and function units can be assembled together with the basic framework to form a complete device.

Modulus is adopted for interior components and compartment dimensions (modulus unit = 25mm).

Features

+ Compact design: more function units are contained in less space.

+ Structure has strong versatility and flexible assembly. C type bar section of 25mm modulus can meet the demands of various structures and types, protection level and operational environments.

+ Adopt standard module design, which can be combined into standard units such as protection, operation, transfer, control, regulation, measurement, indication, etc. The user can choose assembly according to requirements at will. More than 200 components can be combined into various cabinet structures and drawer units.

+ Good security: adopt high-strength flame-retardant type engineering plastic parts in large quantities to effectively enhance the protective safety performance.

+ High technical performance: the main parameters reach advanced level in domestic.

Environmental conditions

a The temperature range is -15℃ to +40℃ , and the average temperature in 24 hours is no higher than +35℃ .

b Atmospheric conditions: air is clean, relative humidity is lower than 50% at +40℃ , and higher relative humidity is allowed at lower temperatures, eg. 90% at +20°C. But in view of the temperature change, it is possible that moderate condensation will be produced casually.

c Altitude above sea level should not exceed 2000m.

d The device is suitable for transportation and storing at the following temperatures: -25℃ ~ +55℃ , it can reach +70°C in a short time (within 24 hours). Under the limiting temperature, it can work well under normal conditions if it doesn't suffer damage that can't be recovered.

e If above working conditions cannot be met, the user should negotiate with manufacturer.

f If the device is to be used in marine petroleum drilling platform or nuclear power, another technical agreement needs to be signed.

Rated working current of vertical busbar

Withdrawable type MCC with single side or double sides operation: 800A. MCC with 1000mm depth and single side operation: 800-2000A.

The main technical parameters

Rated working voltage (V)	Rated insulation voltage (V)	Rated working current (A)		Rated short time withstand current effective value/peak (IS)		IP30,IP40 protection level of shell
		Horizontal busbar	Vertical busbar	Horizontal busbar	Vertical busbar	Boundary dimension (H*W*D)
380,660	660,1000	630-5000	800-2000	50-100/105-250	60/130-150	2200*600 (800,1000) *800 (1000)

GGJ

low-voltage reactive power intelligent compensation device

Overview

The GGJ low-voltage reactive intelligent compensation device employs microcomputer control by adopting computer-aided design (CAD), and carries out intelligent tracking compensation for reactive power. With reasonable structure and advanced technology, it is widely used in the low-voltage power grid, to enhance power factor, to reduce reactive loss and to improve power supply quality. As a new generation power-saving product, it is specially used for the 130-600kVA three-phase transformer for reactive power compensation.

Type description

GGJ □ □ — 0.38 —□ —□

- —□ Auxiliary circuit scheme number
- —□ Rated capacity (kva)
- — 0.38 System rated voltage (kv)
- □ H mixed compensation, F split phase compensatior, three-phase compensation (empty)
- □ D dynamie compensation, static (empty)
- GGJ Reactive power compensation device

Features

+ Controlled by intelligent controller, full-featured. Reliable performance, automatic compensation; can increase the power factor to 0.9 even higher.
+ Real-time display of grid power factor and range: lag (0.00-0,99), ahead (0.00-0.99).
+ With over-voltage, over-harmonic, over-compensation, system failure, lack of phase, overload and other comprehensive protection.
+ The parameters which have been set will not lose after power failure, and it automatically enters into running mode after power grid becoming normal without operators watching over.
+ According to the grid load balance, take phase compensation or mixed compensation.
+ Strong anti-interference ability, can withstand the interference pulse with an amplitude of 2000V directly input from the grid, which is higher than the national professional standards.

Environmental conditions

a Altitude:≤2000m

b Installation environment: free of harmful gases and steam, conductive or explosive dust and serious mold.

c Relative humidity:≤90% at 20℃

d Ambient temperature:-15℃ ~ +40℃

Distribution network detection function

a Real-time measurement and hourly record of three-phase voltage, current, frequency, active power, reactive power, power factor, active energy and reactive energy at transformer's LV side; voltage and current overall distortion rate and 2-25 subharmonic capacity.

b RS-232 and RS-485 interfaces are equipped to handle computer data transcription. Also, it can achieve wireless meter reading, device testing, parameter setting, real-time data measurement and the reading of recorded data functions through remote communication.

c Data analysis function: carry out analysis and processing, as well as statistical query on operating load data; comprehensively analyze power supply quality, calculate voltage qualification rate, power supply load rate, reliability, and maximum load rate; inspect power factor, active power and reactive power at different periods of time; draw the diagrams of voltage, current, and power factor for each phase; print the comprehensive analysis and statistics report.

The main technical parameters

Rated voltage	0.38-0.66 (kV)
Rated frequency	50 (Hz)
Rated capacity	1-600 (kvar)
Applicable voltage range	(0.85~1.1) times of rated voltage
Maximum allowable current	1.3 times of rated current
Control circuit	loop 1-16
Switching time	1-150s/times, adjustable
Operation mode:	automatic, continuous operation

GGD

AC low-voltage fixed type switchgear

Overview

GGD AC LV fixed type switchgear is applicable to the distribution system with an AC frequency of 50Hz, a rated working voltage of 380V, and a rated current of up to 3150A in power stations, substations, industrial plants, etc., used for power transfer, distribution, and control of power, lighting, and distribution devices.

Type description

G G D

- D — Power cabinet
- G — Fixed wiring
- G — Low voltage distribution cabinet

Features

+ Fully consider the heat dissipation during cabinet running, heat dissipation slots of different quantities are punched accordingly on the top and bottom of the cabinet.

+ The body of GGD AC LV power distribution cabinet has a universal cabinet design. The framework is assembled with 8MF cold-bent profile steel through partial welding. Framework components and special mating components are provided by the assigned profile steel manufacturer to ensure the precision and quality of the cabinet. Components of the universal cabinet are designed according to the module principle with mounting holes based on a 20-modulus system and high universality. The cabinet door is connected to the framework with a rotating-axis-type movable hinge, which makes installation and disassembly convenient.

+ An E-type rubber strip is installed in the edge fold of the door. The filler rod between the door and the framework has a certain compression stroke when the door is closed. It can prevent the door from colliding with the cabinet directly and it also improves the protection level of the door.

+ Connect the meter gate set with electrical components to the framework with multistrand soft copper wire. Connect the mounting pieces inside the cabinet with the framework with knurled screws. The whole cabinet constructs a complete earthing protective circuit.

+ The top cover of the cabinet can be disassembled if necessary for convenient assembly and adjustment of main busbar on site. Four corners of cabinet are equipped with lifting lugs for hoisting and shipping. Protection level of the cabinet: IP30. The user can choose from IP20-IP40 according to environmental requirements.

Environmental conditions

a Ambient air temperature: -5℃ ~+40℃ and the average temperature ≤+35°C in 24h.

b Installed and used indoor. Altitude above sea level for operation site 2000m.

c Relative humidity should not exceed 50% at max temperatures +40℃ . Higher relative humidity is allowed at lower temperature, eg. 90% at +20°C. But in view of the temperature change, it is possible that moderate condensation will be produced casually.

d Installation gradient should not exceed 5°.

e Installed in places free of fierce vibration and impact and where electrical components wouldn't be eroded.

Any specific requirements, please consult with manufacturer.

The main technical parameters

Type	Rated voltage (V)	Rated current (A)	Rated short circuit breaking current (kA)	Rated short time withstand current (kA)	Rated peak withstand current (kA)
GGD1	380	1000 600 (630) 400	15	15(1S)	30
GGD2	380	1500 1600 1000	30	30(1S)	63
GGD3	380	3150 (2500) 2000	50	50(1S)	105

XL-21

Power distribution cabinet

Overview

The XL-21 type low voltage power distribution cabinet is applicable to power stations and industrial and mining enterprises and used for power distribution in three-phase four-wire or three-phase five-wire systems with an AC voltage of 500V and below. It is installed indoors and against the wall. It can be repaired in front of the panel. The shell is made of bending steel plate. The knife switch operation handle is installed at the upper part of the right column in the front of the cabinet, and can be used for switching power. Users can choose different types of circuit breakers with different current grades to meet their specific requirements.

Type description

X L —21— □

- Scheme No.
- Design No.
- Power
- Control box

The main technical parameters

Items 项目	Unit	Parameters
Rated working voltage	V	AC380, AC660
Rated frequency	Hz	50/60
Rated short time withstand current （1s）	kA	50
Rated peak withstand current	kA	105
Dielectric strength	V/1min	2500
Rated insulation voltage	V	660
Protection level		IP30/IP40
Boundary dimension (WxDxH)	mm	600(800,1000)*350(400,600)*1600(1800)

JP integrated distribution box

(compensation/control/terminal/lighting)

Overview

JP series outdoor integrated power distribution boxes are integrated power distribution devices with the functions of metering, power distribution and reactive power compensation. They have the functions of short circuit, overload, over-voltage, leakage protection and so on. They have the advantages of small size and beautiful appearance, economy and practicability, and are installed on the pole of the outdoor pole-mounted transformer, and are a new generation of ideal distribution products for urban and rural power grid transformation.

Environmental conditions

a Environmental temperature:-15 ℃ ~+40 ℃ ;

b Air relative humidity: daily average value ≤90%, monthly average value90%;

c Elevation: ≤2000m;

d Installed in the sites free of severe vibration, impact and corrosive gas.

Structural features

The structure of the box includes vertical and horizontal types. The shell is constructed of 2mm high quality stainless steel plate, adopting multi-fold flanging process (or stainless steel double sandwich plate with honeycomb structure, with the performance of flame retardancy, environmental protection, heat insulation and anti-condensation). By adopting special stainless steel welding technology, the box has high overall strength. The surface is as smooth and clean as a mirror, without leaving a trace of the welding seam. The internally installed beam (plate) adopts hot-dip galvanized process to ensure that there is no corrosion within twenty years. The design of the front and back doors of the box body is convenient for the user to operate, inspect and repair. The door is surrounded by a high-elasticity and aging-resistant sealing strip. Each door is equipped with two locks: a common lock and an anti-theft lock, and the common lock is provided with an anti-blocking and rust-proof rainproof cover. The metering chamber is fully enclosed with a lead sealing device. The side of the box is equipped with incoming cable sleeves to prevent rainwater and foreign objects from entering. The bottom is punched with ventilation holes and cable outlet holes. The top has a ventilation channel and wire mesh with waterproofing, dust-proofing, anti-dust and anti-foreign matter functions. Protection level: IP54.

The main technical parameters

Serial number	Name	Unit	Parameter
1	Transformer capacity	kVA	30-400
2	Rated working voltage	V	AC400
3	Auxiliary circuit operating voltage	V	AC220, AC380
4	Rated frequency	Hz	50
5	Rated current	A	≤630
6	Rated leakage action current	mA	30~300 Adjustable
7	Protection level		IP54

Order Information /

Normal use conditions for the product

a Environment temperature: highest temperature 40℃ , lowest -15℃ .

b Elevation: no more than 2000m.

c Relative humidity: daily average≤95%, monthly average≤90%.

d Maximum wind speed (outdoor): 35m/s (10m above the ground and average value over 10 min).

e Anti-earthquake performance (with stand): 8.

Order Information

In order to provide you with better service, the following data are required when ordering.

+ Specification and type
+ High voltage
+ Low voltage
+ Coil material
+ Phases
+ Tapping range
+ Rated frequency
+ Vector group
+ Insulation grade
+ Noise

Note: Please specify your requirements for special products.

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