

CEEG-Delivering High-Quality Power to the World



# SUBSTATIONS AND SWITCHGEARS FAMILY PRODUCTS



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## About CEEG

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

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

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



## Why CEEG

### Strategy

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

### Purpose

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

### Advanced Technology

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

### Safety

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

### Sustainability

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





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## Industrial Base

CEEG, a rapidly growing electrical equipment manufacturer, has strategically established three major industrial bases: the Yangzhong Factory, the Binjiang Transformer Factory, and the Jurong Factory. The Yangzhong Factory, with its 40 hectares and a construction area of 180,000 square meters, stands as one of the largest transformer factories globally. It is now employing over 1,000 skilled professionals. On a strong industrial basis, we hope that our belief in excellence and innovation continues to drive the transformer industry forward.

### CEEG Yangzhong Factory



### CEEG Binjiang Transformer Factory



### CEEG Jurong Factory



## Introduction

CEEG has one of the largest transformer industrial bases in the world. The main products include transformers, substations, switchgears, etc. As an electrical equipment manufacturer with over 30 years of manufacturing experience, each type of equipment has its own family of products.

Our substation products include ZGS series, YB series, wind power prefabricated substations, combined substations for photovoltaic power generation, grid-connected photovoltaic inverters, underground substations, containerized substations, energy storage step-up converters, etc. Our switchgear products include L.V switchgears, ring main unit switchgears, centrally installed switchgears, 35kV switchgears, etc.

This brochure mainly introduces some types of substations and switchgears.





## Prefabricated Substation (European Type)

### Product Introduction

The YB-12 and YB-40.5 prefabricated substations is a unit of indoor or outdoor power transmission and distribution, which consist of the H.V room, the transformer room, and the L.V room.

The enclosure is welded with structural steel or assembled with steel plates. The outer frame is covered with a special coating that has strong mechanical properties, weather fastness and corrosion resistance. This prefabricated substation has a thermal insulation layer at the top to prevent condensation, which derives from abrupt changes in temperature inside the cabinet in hot and cold areas.

### Benefits

- Complete ventilation function
- Designed for customer needs
- Reliable and safe operation

### Features

- Automatic temperature control devices are in the transformer room and the L.V room
- The reactive power compensation capacity is generally 15–30% of the transformer capacity
- Reliable function of anti-misoperation interlock system
- Various types of high-voltage switches for options
- Dry-type or oil-immersed type transformers for options
- Walk-in and non-walk-in enclosures of L.V room for options

### Applications

It can be widely used in industries, utilities, infrastructure, and many fields that need power transmission and distribution, etc.

### Environmental conditions

Installation altitude:  $\leq 1,000\text{m}$

Ambient temperature:  $-25^{\circ}\text{C}\sim+40^{\circ}\text{C}$

Relative humidity: do not exceed 90% ( $+25^{\circ}\text{C}$ ), allow to reach 100% in a short time

Installed in a site without fire, explosion, chemical corrosion, and violent vibration

For some special conditions, please contact and negotiate with us.

### Achievements

Beijing Olympics Qingdao International Sailing Centre, State Grid Smart Grid Research Institute, The National Anti-Doping Laboratory, China Railway 14th Bureau Group, Sinopec Corp. Wuhan Company, etc.





## Prefabricated Substation (American Type)

### Product Introduction

The ZGS-12 prefabricated substation (American Type) is a unified design of transformer, oil-immersed load switch, safety fuse, and other devices that is placed in a completely sealed conservator tank. This type of substation has reliable power supply and reasonable structure, which can be widely used in industrial parks, residential communities, business centers, high-rise buildings, and other places of power transmission and distribution.



### Benefits

- Small size
- High level of reliability
- Maximum safety
- Easy installation and operation
- Cost effective

### Features

- CT, PT, protection, and communication devices can be installed on the high-voltage side
- An LED display screen can be installed on the surface of the shell to scroll all kinds of information
- It can realize fully intelligent data acquisition and analysis

### Applications

It can be widely used in industries, utilities, infrastructure, and many fields that need power transmission and distribution, etc.

### Environmental conditions

Installation Altitude:  $\leq 1,000\text{m}$

Ambient temperature:  $-30\text{ }^{\circ}\text{C} \sim +45\text{ }^{\circ}\text{C}$

Daily maximum temperatures:  $+30\text{ }^{\circ}\text{C}$

Daily minimum temperatures:  $+20\text{ }^{\circ}\text{C}$

Daily mean relative humidity  $\leq 95\%$ , monthly mean relative humidity  $\leq 90\%$

Wind speed:  $\leq 35\text{m/s}$

Seismic intensity scale: 8 degrees

If the requirements exceed the environmental conditions above, please contact and negotiate with us.

### Achievements

Beijing Gongke Feida Transportation Engineering Development Co., Ltd., Inner Mongolia Xilin Gol Baiyinhua Coal and Electricity Company, Jiangsu Huaxi Group Corporation, China Gezhouba Group Electrical Power Co., Ltd., Qinghai Huanghe Hydropower Development Co., Ltd., etc.



# YB-40.5KV Prefabricated Substation

## Product Introduction

The YB-40.5 kV prefabricated substation is an H-shaped substation that consists of the H.V room, the transformer, and the L.V room. These three parts of the substation are all independent and connected together by bus-bars or cables. The transformer is installed in an open area between the H.V room and the L.V room, and there are substation fences around the area to ensure safety and protection.



## Benefits

- A compact design with small footprint
- Reliable crafts with minimal maintenance
- Highest level of safety
- Lower-cost

## Features

- Corrosion-resistant and rust-resistant enclosure
- Advanced automatic operation

## Applications

It can be widely used in industries, utilities, infrastructure, and many fields that need power transmission and distribution, etc.

## Environmental conditions

Installation altitude:  $\leq 1,000\text{m}$  (the plateau type will be chosen if it is above 1,000m.)

Ambient temperature:  $-25\text{ }^{\circ}\text{C} \sim +40\text{ }^{\circ}\text{C}$

Relative humidity  $\leq 85\%$

Wind speed:  $\leq 34\text{m/s}$  (Wind Pressure: under 700Pa)

Pollution Degree: 1, 3

IP degree of protection: IP33D

Slope angle:  $\leq 5^{\circ}$

Installed in site without fire, explosion, chemical corrosion, and violent vibration





# Mining Mobile Substations

## Product Introduction

The KY-YB-35(10)/6(0.4) mining mobile substation has two basic types: the on-wheels type and the skid-mounted type. The mobile substation on wheels is a combination of the H.V room, the transformer room, the M.V and L.V room, and special flatbed trucks. It can be towed by trailers, which offers the maximum flexibility for mining power distribution. The mining skid-mounted substation is built on a specially strengthened steel skid. This type of substation is perfectly suitable for mining to ensure an efficient and fast power supply.



## Benefits

- Modular design
- Flexible installation
- Easy traction and operation
- Cost effective
- High quality with long lifetime

## Features

- Reliable component suppliers: some components, auxiliaries, and accessories are made by leading companies
- Different types of transformers for options
- Optional automatic system for customer needs
- Capable of withstanding the harshest environments

## Applications

Industries: mining farms, etc.

## Environmental conditions

Installation altitude:  $\leq 1,000\text{m}$

Ambient temperature:  $-25\text{ }^{\circ}\text{C} \sim +40\text{ }^{\circ}\text{C}$

Relative humidity: do not exceed 95% ( $+25\text{ }^{\circ}\text{C}$ ); allow to reach 100% in a short time

Installed in a site without fire, explosion, chemical corrosion, and violent vibration;

For some special conditions, please contact and negotiate with us.





# Compact Substation for New Energy

## Product Introduction

The ZGS series compact substation is a new product for renewable energy power generation. It can increase the voltage generated by the solar panel or wind turbine from 0.315–0.8 kV to 10 kV or 35 kV and then be connected to the grid to generate power. This product is the best supporting facility for a new energy power generation system.

## American Type

### Benefits

- Compact structure and excellent heat dissipation mechanism.
- Superior rust-resistance crafts.
- Advanced automatic monitoring system for options.

### Features

- Consist of three parts: the H.V room, the L.V room, and the transformer.
- The high-voltage side adopts an oil-immersed load switch and a safety fuse for full range of protection.
- The load switch and fuse are installed in the conservator tank of the transformer, and the insulating liquid of the transformer is used for insulating and dissipating heat.
- The enclosure is made of steel plate welding with high protection from rust resistance and sealing crafts.



## Chinese Type

### Benefits

- Stable operation when ambient temperature is close to 40 °C
- Strong salt spray resistance, humidity resistance, and corrosion resistance
- Complete anti-misoperation interlock system to ensure reliable operation
- Safety protection: without pollution and explosion risk, high insulation level, small size, easy to install

### Features

- Consist of three parts: the H.V room, the L.V room, and the transformer
- Excellent thermal insulation: the top of the switching station has double-layers
- The transformer will be installed outside the rooms
- The structure of the enclosure is welded with structural steel, this strong structure ensures the substation withstands the harshest environments
- Advanced automatic monitoring system of L.V room for options





# Grid-Connected Photovoltaic Inverters

## Product Introduction

The grid-connected photovoltaic inverter, which integrates inverters, transformers, high- and low-voltage switchgear, and enclosures, etc. is a 0.4–35 kV three-phase AC 50 Hz integrated equipment. It can increase the voltage generated by the solar panel or wind turbine from 0.315–0.8 kV to 10 kV or 35 kV and then be connected to the grid to generate power. This product is capable of achieving DC power distribution, inverter grid-connected, voltage increasing, AC power distribution, intelligent communication monitoring in photovoltaic power stations, and many other functions. The product can replace the traditional mode of "MW inverter room + photovoltaic prefabricated substation" and is widely used in distributed and centralized photovoltaic power stations.



## Benefits

- Easy to install: an integrated design of photovoltaic inverter, transformer, and switchgear, saving the installation time
- Higher adaptability: can be installed in various environments
- High-quality thermal insulation crafts
- Excellent air ventilation design
- Safety operation: the cast epoxy resin dry-type transformer is non-flammable because of its self-extinguishing
- Cost effective: the investment will be reduced by 15%-20%
- Flexible solutions: the product can be designed for customer needs

## Features

- Strong corrosion resistance: the enclosures are made of weathering steel, which has increased resistance to atmospheric corrosion.
- Structural optimization: reduced some connection cable and two low-voltage switchgears.

## Applications

It can be widely used in industries, utilities, infrastructure, and many fields that need power transmission and distribution, etc.

## Environmental conditions

Installation altitude:  $\leq 1,000\text{m}$

Ambient temperature:  $-25\text{ }^{\circ}\text{C} \sim +40\text{ }^{\circ}\text{C}$

Daily mean relative humidity  $\leq 95\%$ , monthly mean relative humidity  $\leq 90\%$

Installed in a site without fire, explosion, chemical corrosion, serious pollution, and violent vibration

For some special conditions, please contact and negotiate with us.



# Containerized Substation

## Product Introduction

The containerized substation is composed of HV and LV switchgear and a transformer fitted integrally. It is suitable for three-phase AC rated voltage 3~12kV, rated frequency 50Hz power system, and can be equipped with various types such as high-voltage ring main unit type, terminal type, and dual power supply type, etc.

This product has perfect functions for delivering electrical power and superior performance for controlling, protecting, and monitoring circuits. The high-voltage side distribution units have a wide range of choices: XGN15-12 sulfur hexafluoride ring main unit, HXGN2-12 ring main unit, and XGN66-12 AC metal-enclosed switchgear, etc. There are also GGD, GCK, MNS, GCS, etc. as low-voltage side units for options.



## Benefits

- Advanced enclosures: stable structure, dust-proof and animal-proof, easy maintenance.
- Safety and reliable operation

## Features

- Optional enclosures: tile board, aluminum alloy, steel plate, or stainless steel, etc.
- Complete anti-misoperation interlock system, the high-voltage room adopts load switches or vacuum circuit breakers.
- Optional automatic reactive power compensation assembly: dynamic or static hybrid compensation for options.
- Excellent thermal insulation design: the top of the switching station has double-layers, which are filled with plastic foam.
- Excellent air ventilation system: normally use natural draught ventilation and can be equipped with forced ventilation systems.
- The substation can be transported by ocean shipping

## Applications

It can be widely used in industries, utilities, infrastructure, and many fields that need power transmission and distribution, etc.

## Environmental conditions

Installation altitude:  $\leq 1,000\text{m}$

Ambient temperature:  $-25\text{ }^{\circ}\text{C}\sim +40\text{ }^{\circ}\text{C}$

Relative humidity  $\leq 90\%$

Wind speed:  $\leq 35\text{m/s}$

Slope angle:  $\leq 5^{\circ}$

Installed in a site without fire, explosion, chemical corrosion, and violent vibration

For some special conditions, please contact and negotiate with us.



# KYN61 Metal-clad Removable Indoor AC Metal-enclosed Switchgear

## Product Introduction

KYN61 metal-clad removable indoor AC metal-enclosed switchgear is a unit of distribution equipment for 40.5 kV three-phase AC 50Hz sectionalized single bus-bar systems. It has proven techniques around the world, and is also strictly manufactured according to IEC298 standards, etc.

The main switch adopts composite insulating and operating mechanisms. There are many types of switches: ZN85-40.5 circuit breaker, VBG-40.5 vacuum circuit breaker, as well as ABB VD4-40.5 vacuum circuit breaker or HD4-40.5 sulfur hexafluoride circuit breaker, which have a compact structure, superior performance, and high reliability.



## Benefits

- Designed using reliable anti-misoperation Interlock systems
- Complete solutions for customer needs
- Reasonable layouts with stable and strong structures
- Strong scalability

## Features

- Advanced techniques that can be equipped with different types of circuit breakers

## Applications

It can be widely used in industries, utilities, infrastructure, and many fields that need power transmission and distribution, etc.

## Environmental conditions

Installation site: Indoor

Installation altitude:  $\leq 1,000\text{m}$

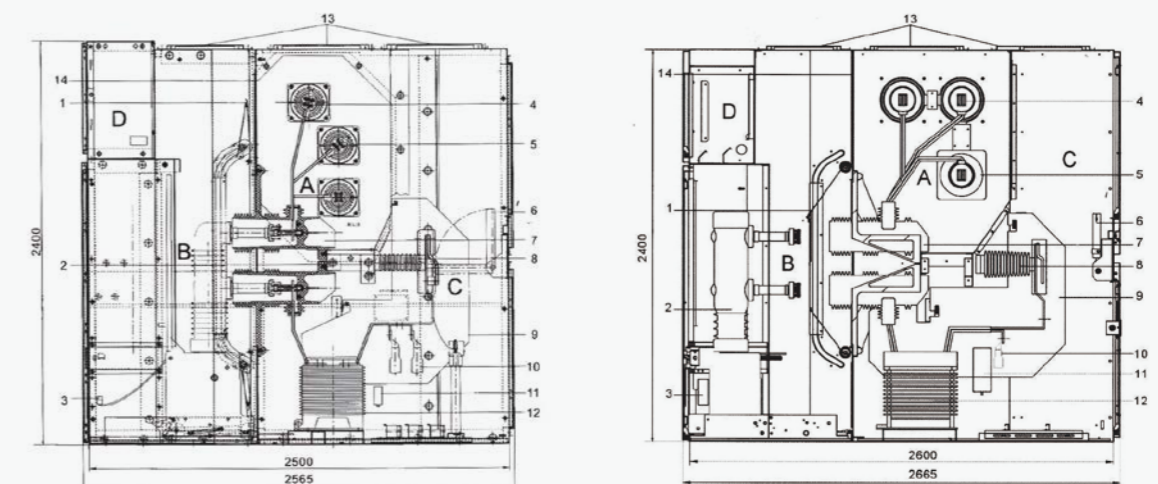
Ambient temperature:  $-25\text{ }^{\circ}\text{C} \sim +40\text{ }^{\circ}\text{C}$

Daily mean relative humidity  $\leq 95\%$  ( $25\text{ }^{\circ}\text{C}$ ), monthly mean relative humidity  $\leq 90\%$  ( $25\text{ }^{\circ}\text{C}$ )

Seismic intensity scale: 8 degrees

Installed in a site without fire, explosion, chemical corrosion, and violent vibration

For some special conditions, please contact and negotiate with us.





# KYN28 Indoor Metal-clad Withdrawable Switchgear

## Product Introduction

The KYN28(GZS1)-12 type indoor metal-clad withdrawable switchgear is a unit of high-performance distribution equipment for 12 kV three-phase AC 50Hz single bus-bar and sectionalized single bus-bar systems.

This switchgear complies with the IEC-298 standards, with an anti-misoperation interlock system to provide maximum user safety. It can be equipped with ABB VD4 vacuum circuit breakers or VBG vacuum circuit breakers.



## Benefits

- Safety interlocking system to prevent some mistaken operations
- Excellent performance of power distribution

## Features

- Designed using high-performance circuit breakers to provide safe operation
- Advanced techniques that can be equipped with different types of circuit breakers
- Highly control, protect, and monitor power generation, transmission, and distribution

## Applications

It can be widely used in industries, utilities, infrastructure, and many fields that need power transmission and distribution, etc.

## Environmental conditions

Installation altitude:  $\leq 1,000\text{m}$

Ambient temperature:  $-25\text{ }^{\circ}\text{C} \sim +40\text{ }^{\circ}\text{C}$

Daily mean relative humidity  $\leq 95\%$  ( $25\text{ }^{\circ}\text{C}$ ), monthly mean relative humidity  $\leq 90\%$  ( $25\text{ }^{\circ}\text{C}$ )

Seismic intensity scale: 8 degrees

Installed in a site without fire, explosion, chemical corrosion, and violent vibration

For some special conditions, please contact and negotiate with us.

## Achievements

China CEMC Engineering Co., Ltd., Mengniu Dairy (Chabei) Co., Ltd., Guizhou Shuicheng

Mining Co., Ltd., Offshore Oil Engineering (Zhuhai) Co., Ltd., ChinaCoal Pingshuo Coal Industry Co., Ltd., etc.





# XGN15 AC Metal-enclosed Ring Main Unit Switchgear

## Product Introduction

The XGN15-12 AC metal-enclosed ring main unit switchgear is a successful self-designed switchgear that has absorbed advanced technology from all over the world. This product complies with the IEC 298 standard and has strong performance. The XGN15-12 AC metal-enclosed ring main unit switchgear is suitable for the AC 50 Hz, 10 kV transmission network.



## Benefits

- Small size and low physical weight
- Simple operation, easy maintenance
- Safe and reliable operation

## Features

- Comply with IEC298 standards
- Reliable function of anti-misoperation interlock system

## Applications

It is applicable to the construction and renovation of urban power grids

## Environmental conditions

Installation altitude:  $\leq 2,000\text{m}$

Ambient temperature:  $-25\text{ }^{\circ}\text{C} \sim +40\text{ }^{\circ}\text{C}$

Daily mean relative humidity  $\leq 95\%$ , monthly mean relative humidity  $\leq 90\%$

IP degree of protection: IP3X

Installed in a site without corrosive gases, flammable gases, water vapor and violent vibration





# MNS Low-voltage Withdrawable Switchgear

## Product Introduction

The MNS low-voltage withdrawable switchgear is a safe and reliable new type of switchgear. It has advanced performance, such as compact design, strong structural versatility, standard module design.



## Benefits

- Compact design with small footprint, capable of accommodating multiple functional units
- Highly breaking capacity
- Excellent dynamical thermal stability
- High IP degree of protection

## Features

- Easy assembly: No need for special complex tools
- Higher flexibility: C-channel steel beams with 25mm modulus to fulfill different requirements
- Flexible electrical solutions: standard modular design with more than 200 components to consist of various configuration schemes
- Safety: a large number of high-strength flame-retardant plastic components to effectively enhance protection

## Applications

It can be widely used in industries, utilities, infrastructure, and many fields that need power transmission and distribution, etc.

## Environmental conditions

Installation altitude:  $\leq 1,000\text{m}$

Ambient temperature:  $-25\text{ }^{\circ}\text{C}\sim+40\text{ }^{\circ}\text{C}$

Daily mean relative humidity  $\leq 95\%$  ( $25\text{ }^{\circ}\text{C}$ ), monthly mean relative humidity  $\leq 90\%$  ( $25\text{ }^{\circ}\text{C}$ )

Seismic intensity scale: 8 degrees

Installed in a site without fire, explosion, chemical corrosion, and violent vibration

For some special conditions, please contact and negotiate with us.

## Achievements

Beijing Guodian Power Engineering Installation Co., Ltd., Beijing Guodian Tongfang Electric Engineering Co., Ltd., Tongcheng State Grid Electrical Equipment Co., LTD., Zhongzi Taike Traffic Engineering Co., Ltd, Jointown Pharmaceutical Group Co., Ltd., etc.



**CEEG 中电电气**

**WALK WITH GIANTS,  
SYNCHRONIZE WITH  
THE WORLD!**

