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CEEPOWER

Integrated Power Transmission & Distribution Equipment

Product Manual

CEEPOWER

Stock Code: 300062

Energy Internet System Solution Provider

Ceepower Introduction

3 + Billion
RMB in Assets

1,000 +
Employees

200 +
Patents & Software Copyrights

30 +
Global Markets

Ceepower Co., Ltd. (Stock Code: 300062), founded in 1999 and listed on the Shenzhen Stock Exchange in 2010, is the first GEM(Growth Enterprise Market) company in Fuzhou, with total assets exceeding 3 billion RMB.

Guided by the mission of "Innovate in Energy, Serve Society through Industry", Ceepower has focused for over 26 years on power technology R&D and the production, sales, and service of intelligent transmission and distribution equipment. It operates multiple wholly owned and equity-holding subsidiaries, with business covering smart grid, rail transit, and renewable energy. Its products are exported to more than 30 countries and regions.

The company has established a modern headquarters integrating R&D and marketing functions, along with a smart manufacturing base covering an area of approximately 180,000 m². Ceepower holds over 200 patents and software copyrights, with contributions to both national and industry standards.

In response to global carbon reduction goals, Ceepower is developing intelligent power systems that support the integration of renewable energy and efficient grid upgrades. With continuous innovation and a growing global presence, Ceepower is committed to becoming a trusted provider of smart power solutions worldwide.

Manufacturing Strength

Lean Manufacturing System · Efficient Production Capability

Ceepower's large-scale Fuqing production base features an efficient lean manufacturing system with multiple advanced automated production lines. Equipped with a full range of cutting-edge domestic and international testing instruments, it delivers strong and reliable manufacturing performance.

180,000 m²
Site Area

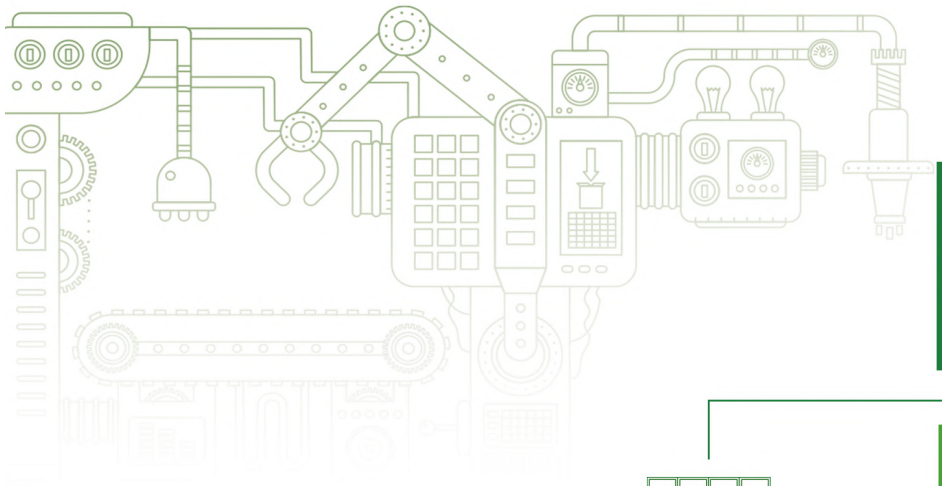
82,000 m²
Factory Area

900 +
Production & Testing Equipment

Certified Capability in Technology

Certified by Authorities · Built for Quality and Safety

Backed by outstanding R&D and lean intelligent manufacturing, Ceepower's complete product line has earned multiple authoritative certifications for its advanced design and reliable production quality.



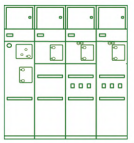
Product Series

MV & LV Switchgear System

With 26 years in the power and energy sector, Ceepower provides MV/LV integrated switchgear systems widely used in grids, metallurgy, mining, manufacturing, rail transit, commercial and residential projects.

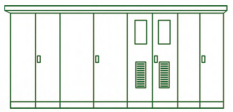
Main products include compact substations, combined transformers, indoor switchgear, Metro Environmental Control System (ECS) Cabinet, and MNS, GGD, GCK, GCS switchgears. Backed by full-chain capabilities and partnerships with brands like Schneider and Siemens, Ceepower has earned broad market trust and served many key projects.

MV Switchgear Systems *P7-12*



LV Switchgear Systems *P13-23*

Power Substation Series *P25-34*



Other Integrated Products *P35-36*

7 KYN28-12

9 XGN15-12

11 NXAirS LP

12 8DJH

13 GCS

15 MNS-G

17 GDF

19 GGD

21 GCK

23 SIVACON-8PT

25 Compact Substation

27 Indoor Integrated Substation

29 Prefabricated Substation

31 Trailer Substation

33 Skid-Mounted Mobile Substation

35 SVG

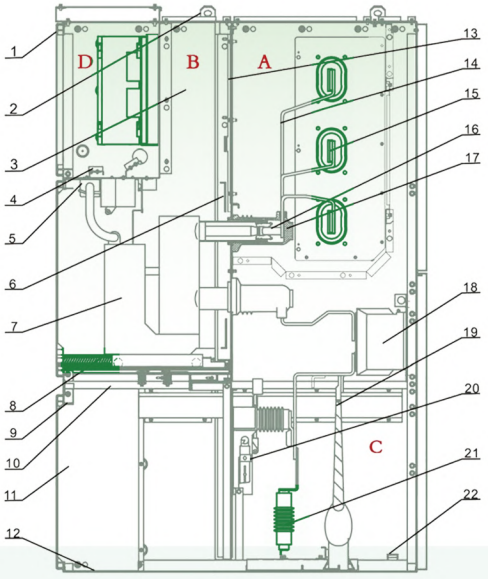
36 Distribution Box

36 Reactor

The KYN28-12 is a 3–12 kV, three-phase AC, 50 Hz indoor metal-clad switchgear. It is mainly used for power distribution and large motor starting and control in power plants, industrial and mining enterprises, and secondary (distribution) substations of power systems. The switchgear performs functions of circuit control, protection, and monitoring. This product has passed the type test conducted by the China High Voltage Electrical Apparatus Testing Center.

KYN28-12
Metal-Clad Withdrawable Switchgear

- CNC-formed Al-Zn steel enclosure delivers high mechanical strength and a clean finish
- Compatible with VD4, VS1 and other vacuum breakers for reliable, maintenance-free service
- Closed-door operation with full interlocks prevents breaker or isolator mis-operation and live-circuit access, protecting personnel and equipment
- Independently sealed compartments with front and rear viewing windows simplify status checks



A. Busbar Compartment
B. Circuit-Breaker Compartment
C. Cable Compartment
D. Low-Voltage (Relay) Compartment

1. Enclosure
2. Lifting Lug
3. Pressure-Relief Duct
4. Terminal Strip
5. Plug-in Secondary Module
6. Shutter
7. Breaker Truck
8. Truck Advancing Mechanism
9. Removable Horizontal Barrier
10. Earthing Switch Operating Mechanism
11. Control Wiring Trunking
12. Base Plate
13. Removable Partition
14. Branch Busbar
15. Main Busbar
16. Isolating Contact Assembly
17. Primary Contact Box
18. Current Transformer
19. Sealed Cable Termination
20. Earthing Switch
21. ZnO Surge Arrester
22. Main Earth Busbar

K Y N 28 - 12 / T 3150 - 40

- Rated Short-Circuit Breaking Current (kA)
- Rated Current (A)
- Spring-Operating Mechanism
- Maximum Operating Voltage (kV)
- Design Serial Number
- Indoor
- Withdrawable
- Metal-Clad

Specifications

Rated Voltage	12kV
Rated Current	630, 1250, 1600, 2000, 2500, 3150A
Rated Frequency	50Hz
Rated Short-Circuit Breaking Current	25, 31.5, 40kA
Rated Short-Circuit Making Current	63, 80, 100kA
Rated Short-Time Withstand Current / 4s	25, 31.5, 40kA
Rated Peak Withstand Current	63, 80, 100kA
Rated Power-Frequency Withstand Voltage (1 min)	42/48kV (break)
Rated Lightning Impulse Withstand Voltage	75/85kV (break)
Internal Arc Fault Test	IAC Class AFLR; Switch Compartment 20kA 1s, Cable Compartment 20kA 0.1s
Ingress Protection	Enclosure: IP4X; IP2X with partition and circuit breaker compartment door open

Working Environment

Ambient Temperature:

Maximum Temperature: +40°C
Minimum Temperature: –15°C
Daily Average Temperature: ⩽ +35°C

Ambient Humidity:

Daily Average Relative Humidity: ⩽ 95%
Monthly Average Relative Humidity: ⩽ 90%

Altitude: ⩽1000 m

Seismic Intensity: ⩽ Grade 8

Installation Site:

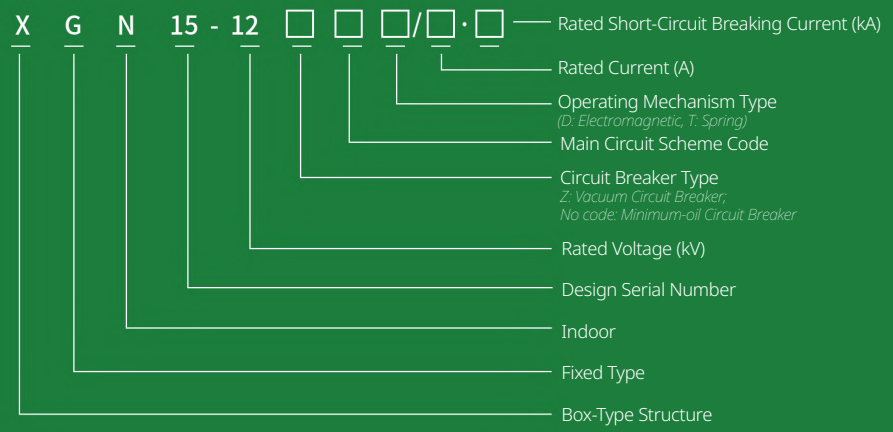
Free from significant pollution by corrosive or flammable gases. The site should not be subject to frequent or severe vibration, and must be free from fire hazards and explosion risks.

**Note: For special conditions, please consult Ceepower*

The XGN15-12 is a 12 kV, 50 Hz AC metal-enclosed ring main unit with a compact design, easy operation, and simple installation. It is ideal for urban residential areas, small substations, industrial sites, shopping malls, airports, metro systems, wind farms, railways, and tunnels.

XGN15-12
AC Metal-Enclosed Ring Main Unit

- Enclosure made of aluminum-zinc coated and cold-rolled steel plates—lightweight, strong, corrosion-resistant, and visually appealing
- Four isolated compartments: busbar compartment, switch unit, cable compartment, and control room for safe and flexible operation
- Rear pressure relief vents enhance safety and equipment reliability
- Supports various SF_6 switches, offering reliable performance and easy maintenance



Specifications

Rated Voltage	12 kV
Rated Frequency	50 Hz
Rated Current of Main Busbar	630 A
Rated Short-Circuit Making Current	50 kA
Rated Short-Time Withstand Current	20 kA / 3 s
Rated Peak Withstand Current	50 kA
Power Frequency Withstand Voltage	42 kV (phase-to-earth & between phases), 48 kV (across isolating distance)
Lightning Impulse Withstand Voltage	75 kV (phase-to-earth & between phases), 85 kV (across isolating distance)
Ingress Protection	IP3X

Working Environment

Ambient Temperature:

Maximum Temperature: +40°C
Minimum Temperature: –15°C
Daily Average Temperature: ⩽ +35°C

Ambient Humidity:

Daily Average Relative Humidity: ⩽ 95%
Monthly Average Relative Humidity: ⩽ 90%

Altitude: ⩽1000 m

Seismic Intensity: ⩽ Grade 8

The installation area should be free from significant pollution by corrosive or flammable gases. The site should not be subject to frequent or severe vibration, and must be free from fire hazards and explosion risks.

**Note: For special conditions, please consult Ceepower*

Designed by Siemens, NXAirS LP is a new generation of medium-voltage metal-enclosed switchgear tailored to meet diverse customer needs. It delivers high safety, reliability, and flexibility as a unified MV distribution solution.

Ceepower is an authorized technology partner of Siemens and a trusted manufacturer of NXAirS LP switchgear, recognized for its excellence and quality.

NXAirS LP
Metal-Enclosed Medium Voltage Switchgear

· Proven safety and reliability with complete type testing

· Disaster protection with proprietary pressure relief and absorption system

· Compact and flexible design for space efficiency

· Efficient and eco-friendly with rational air-insulated busbar layout

· Safe and standardized operation with comprehensive interlocking system

Rated Voltage	7.2 kV	12 kV
Rated Frequency	50 Hz	
Rated Short-time Power Frequency Withstand Voltage (phase-to-phase, to earth)	32kV, 42kV	
Rated Lightning Impulse Withstand Voltage (phase-to-phase, to earth)	60kV, 75kV	
Rated Short-Circuit Breaking Current (max)	40* kA	
Rated Short-Time Withstand Current (4s, max)	40* kA	
Rated Short-Circuit Making Current (max)	10C* kA	
Rated Peak Withstand Current (max)	100* kA	
Rated Busbar Current (max)	4000 A	
Feeder Current		
Circuit Breaker Cabinet	4000 A	4000 A
Contactor Cabinet	250 A	160 A
Disconnector Handcart Cabinet	4000 A	4000 A
Busbar Section Cabinet	4000 A	4000 A
Busbar Riser Cabinet	4000 A	4000 A

**Note: Applicable to switchgear other than contactor cabinets.*

8DJH
Gas-Insulated Switchgear

8DJH is a fully type-tested, SF_6 gas-insulated switchgear solution designed for safe and space-efficient indoor power distribution. Its metal-enclosed, single-busbar design ensures high reliability for three-phase systems. It is suitable for substations, distribution and switching stations in utility and industrial power systems.

Features

Excellent Environmental Adaptability

• Laser-welded stainless steel gas tank
• Immune to temperature and altitude variations
• Hermetically sealed—no moisture ingress, excellent anti-condensation performance

Space-Saving Design

• Efficient use of distribution room space
• Reduced civil engineering costs and land use

High Safety and Reliability

• Internal arc classification: IAC A FLR 21kA / 1s
• Comprehensive interlock system with full "Five-Prevention"* functions
• Resistant to seismic shocks and vibrations
• Designed with low fire load characteristics

**Prevention of incorrect circuit breaker operation, switching disconnectors under load, grounding switch closing when live, entry into energized compartments, energizing when grounding switch is not closed.*

GCS low-voltage withdrawable switchgear offers high breaking and making capacity, excellent dynamic and thermal stability, flexible electrical design, easy combination, practical series, innovative structure, and high protection level. It suits power plants, petroleum, chemical, metallurgy, textile, high-rise buildings, and similar distribution systems. Designed according to ***IEC 60439-1, GB7251.1, JB/T9661*** standards.

GCS
Withdrawable Switchgear

G C S □ □

- Auxiliary Circuit Scheme Code
- Main Circuit Scheme Code
- Electrical System
- Withdrawable Type
- Enclosed Switchgear

- Safe and reliable with clear, secure separation between functional units and compartments, preventing interference
- Stable horizontal busbar layout resists electrodynamic forces, ensuring dynamic and thermal stability
- Flexible installation with 8MF steel columns featuring 20mm and 100mm modular mounting holes for easy internal assembly
- Supports mixed assembly of withdrawable and fixed partition units as needed

Specifications

Rated Voltage – Main Circuit	AC 380 V (400 V), (660 V)
Rated Voltage – Auxiliary Circuit	AC 220 V, 380 V (400 V); DC 100 V, 220 V
Rated Frequency	50 Hz (60 Hz)
Rated Insulation Voltage	660 V (1000 V)
Rated Current	Horizontal Busbar ＜ 6300 A; Vertical Busbar (MCC) ＜ 2000 A
Rated Short-Time Withstand Current of Busbar (1 s)	50 kA, 65 kA, 100 kA
Rated Peak Withstand Current of Busbar (0.1 s)	105 kA, 143 kA, 220 kA
Power-Frequency Withstand Voltage (1 min)	Main Circuit 2500 V; Auxiliary Circuit 2000 V
Busbar System	Three-phase four-wire A.B.C.PEN; Three-phase five-wire A.B.C.PE.N
Ingress Protection	IP30, IP40

Working Environment (Indoor)

Ambient Temperature:
Maximum Temperature: +40°C
Minimum Temperature: –5°C
Daily Average Temperature: ⩽ +35°C

** Note: If exceeded, derating is required based on actual conditions*

Ambient Humidity:
Relative Humidity at +40°C: ⩽ 50%
Higher humidity allowed at lower temperatures, e.g. at +20°C: ⩽ 90%

**Note: Consider condensation due to temperature changes*

Altitude: ⩽2000 m

Installation Inclination: ⩽ 5° (the entire switchgear lineup should remain level to ensure safe and stable operation)

Installation Site:
No significant vibration, fire/explosion risk, severe pollution, or corrosive gases

**Note: For special conditions, please consult Ceepower*

The MNS-G modular low-voltage switchgear features a compact design, high component compatibility, and flexible assembly. It meets diverse power supply and distribution needs and is widely used in low-voltage distribution systems for power plants, substations, industrial and mining enterprises, commercial buildings, hotels, and municipal projects.

MNS-G
Modular Low-Voltage Switchgear

Technical Standards

MNS-G is a type-tested assembly (TTA) low-voltage switchgear, compliant with IEC 60439-1 and GB 7251.1-2005 standards. Its installation and wiring conform to IEC 364 and DIN VDE 0105 standards.

High Flexibility	Compact & Standardized	Economical, Safe & Reliable
· Maintenance-free after assembly; · Compatible with various standard components for diverse applications; · Modular design with optional protection levels for different environments	· Space-saving cabinet structure · Cabinets can be arranged back-to-back · Fully standardized series for easy engineering integration	· Cost-efficient circuit layout · Easy system upgrades and component replacement · High operational reliability and continuity · Enhanced safety for operating personnel

Specifications

Standard		Type-Tested Assemblies (TTA*) GB7251.1-2005, IEC 60439-1
Electrical Parameters		
Rated Insulation Voltage (Ui)		1000V AC
Rated Operational Voltage (Ue)		690V AC
Rated Impulse Withstand Voltage (Uimp)		12kV
Overvoltage Category		IV
Pollution Degree		3
Rated Frequency		Up to 60Hz
Main Busbar	Rated Current (Ie)	Up to 6300A
	Rated Peak Withstand Current (Ipk)	Up to 220kA
	Rated Short-Time Withstand Current (Icw)	Up to 100kA
Distribution Busbar	Rated Current (Ie)	Up to 1200A (2000A)
	Rated Peak Withstand Current (Ipk)	Up to 110kA (176kA)
	Rated Short-Time Withstand Current (Icw)	Up to 50kA (80kA)
Structural Parameters		
Dimensions	Cabinet & Support Structure	DIN41488
	Recommended Height	2200 mm
	Recommended Width	400, 600, 800, 1000, 1200 mm
	Recommended Depth	600, 800, 1000, 1200 mm
	Module Pitch	E = 25 mm (per DIN43660)
Internal Separation Form		Up to Form 4b
Ingress Protection		IP30 to IP54 (per IEC529 or DIN41050)

**TTA refers to a type-tested low-voltage switchgear and controlgear assembly that matches previously verified designs without any performance-impacting differences.*

Working Environment

Ambient Temperature:
Short-Term Maximum Temperature: +40°C
Minimum Temperature: –10°C
Daily Average Temperature: ⩽ +35°C

** Note: If exceeded, derating is required based on actual conditions*

Ambient Humidity:

Relative Humidity at +40°C: ⩽ 50%

**Note: Ventilation or heating may be applied inside the switchgear to prevent condensation in moisture-prone environments*

Altitude: ⩽2000 m

** Note: If exceeded, derating is required based on*

Installation Site:

Indoor installation by default; for other environments, protection level can reach up to IP54

The GDF fixed partition switchgear is suitable for three-phase AC 50 or 60 Hz systems, supporting a range of rated voltages and currents, as well as three-phase three-wire and four-wire configurations. It is widely used in power plants, substations, industrial facilities, high-rise buildings, and broadcasting and communication centers for power distribution (PC) and motor control (MCC), making it an ideal solution for upgrading low-voltage integrated switchgear systems.

GDF
Fixed-Partition Switchgear

01
Compact & High Reliability

Plug-in devices are mounted in dedicated fixed compartments; components and wiring have independent spaces, making installation and maintenance safe and convenient.

02
Modular Assembly

Highly standardised, serial-modular design minimises storage and shipping footprint. Factory-made modules snap together on site—no special tools required.

03
Wide Applicability & Safety

Rated up to 660 V, 50/60 Hz, the switchgear is suited to generation, transmission, distribution, and end-use loads across a broad range of power and industrial applications. Automatic shutters isolate each functional unit from the pressure-relief duct to contain faults, while high-strength, flame-retardant plastics maximise operator and equipment safety.

Specifications

Rated Insulation Voltage	800 V
Rated Operating Voltage	380 V / 660 V
Frequency	50 Hz
Rated Current of Main Busbar (InA)	400 A – 4000 A
Rated Current of Feeder Cabinet Distribution Busbar (Inc)	200 A – 800 A
Rated Current of Control Cabinet Distribution Busbar (Inc)	200 A – 1000 A
Rated Short-Time Withstand Current of Main Busbar (Icw)	30 kA – 80 kA
Rated Short-Time Withstand Current of Feeder Busbar (Icw)	30 kA
Rated Short-Time Withstand Current of Control Busbar (Icw)	30 kA – 50 kA
Enclosure Ingress Protection	IP41 / IP42

Working Environment

Ambient Temperature:
Maximum Temperature: +40°C
Minimum Temperature: –5°C
Daily Average Temperature: ⩽ +35°C

Ambient Humidity:
Relative Humidity at +40°C: ⩽ 50%

**Note: Higher humidity is permitted at lower temperature*

Altitude: ⩽2000 m

Storage & Transport Temperature: –25°C to +55°C (short-term up to +70°C)

**Note: For offshore platforms or nuclear power plant applications, a separate technical agreement is required. For special conditions, please consult Ceepower*

Technical Standards

IEC 60439-1:1999: Low-voltage switchgear and controlgear assemblies, Part 1: Type-tested and partially type-tested assemblies
GB 7251.1-2005: Low-voltage switchgear and controlgear assemblies, Part 1: Type-tested and partially type-tested assemblies
JB/T 9661-1999: Low-voltage fixed-partition switchgear

The GGD AC low-voltage switchgear is a newly designed solution based on principles of safety, economy, rational layout, and reliability. It is suitable for power generation plants, substations, and industrial or mining enterprises. Operating at 50–60 Hz and up to 380 V/3150 A, it is used in power distribution systems for power conversion, distribution, and control of electrical energy for motors, lighting, and other loads

GGD
AC Low-Voltage Switchgear

01
Modular Design & Flexible Configuration

· The cabinet adopts a standardized 8MF cold-formed steel structure, allowing for prefabrication and high interchangeability
· Rotary hinges ensure easy installation and removal
· Removable top cover facilitates on-site assembly and maintenance

02
Modern Structure with Enhanced Practicality

· Designed with balanced proportions and optimized layout to ensure both aesthetic appeal and functional performance
· Ventilation is fully considered to improve heat dissipation and protection level
· All internal mounting parts are connected to the frame via knurled screws, forming a complete grounding circuit

Specifications

Model	Rated Voltage	Rated Current	Rated Short-Circuit Breaking Current	Rated Short-Time Withstand Current	Rated Peak Withstand Current
GGD1	380V	A: 1000A B: 600A (630A) C: 400A	15kA	15kA	30kA
GGD2	380V	A: 1500A (1600A) B: 1000A C: 600A (630A)	30kA	30kA	63kA
GGD3	380V	A: 3150A B: 2000A (2500A) C: 1600A	65kA	65kA	105kA

Working Environment

Ambient Temperature:

Maximum Temperature: +40°C
Minimum Temperature: –5°C
Daily Average Temperature: ⩽ +35°C

Ambient Humidity:

Relative Humidity at +40°C: ⩽ 50%

**Note: Higher humidity is permitted at lower temperature*

Altitude: ⩽2000 m

Installation inclination with respect to vertical: ⩽ 5

Installation Site: Indoor installation in locations free from severe vibration, fire/explosion risk, heavy pollution, or corrosive gases.

**Note: For special conditions, please consult Ceepower*

Technical Standards

IEC 60439-1: Low-voltage switchgear and controlgear assemblies, Part 1: Type-tested and partially type-tested assemblies

GB 7251.1: Low-voltage switchgear and controlgear assemblies, Part 1: Type-tested and partially type-tested assemblies

GCK low-voltage withdrawable switchgear is suitable for three-phase AC 50 Hz systems with a rated voltage of 380–660 V. It supports incoming, outgoing, bus coupling, motor control, lighting, and power compensation, integrating both PC and MCC functions. Widely applied in power plants, substations, industrial facilities, high-rise buildings, airports, hospitals, and communication centers.

GCK
Low-Voltage Withdrawable Switchgear

Safe Operation & High Reliability

· Fabricated with high-quality, eco-friendly steel profiles and components for a clean appearance and reliable grounding

· Equipped with well-known brand circuit breakers as main switches—easy and safe to operate

· Main switches feature instantaneous, short-time delay, and overload protection; users can select protection modes as needed

· Motor control circuits include protections such as instantaneous, overload, undervoltage, phase failure, and phase loss to ensure safe operation

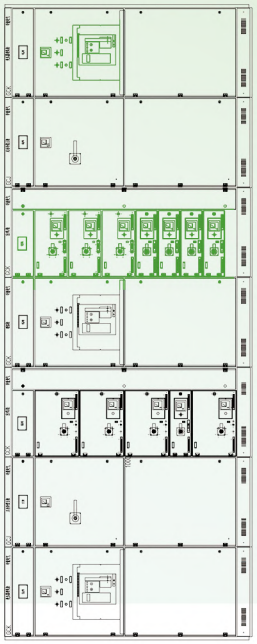
Advanced Structure with High Flexibility

· Highly universal structure and modular design, adaptable to various configurations and protection requirements

· Functional units of the same specifications are interchangeable. Faulty units can be withdrawn and replaced quickly, reducing downtime

· Cabinet can be configured as a hybrid of fixed and withdrawable types, combining the simplicity of fixed cabinets with the flexibility of withdrawable units

· Natural ventilation cover installed at the top without reducing enclosure protection level



Working Environment

Ambient Temperature:

Maximum Temperature: +40°C
Minimum Temperature: –5°C
Daily Average Temperature: ⩽ +35°C

Ambient Humidity:

Monthly Average Humidity: ⩽ 90%
Relative Humidity at +40°C: ⩽ 50%

**Note: Higher humidity is permitted at lower temperature*

Altitude: ⩽2000 m

Installation inclination with respect to vertical: ⩽ 5

Installation Site: Indoor installation in locations free from severe vibration, fire/explosion risk, heavy pollution, or corrosive gases.

**Note: For special conditions, please consult Ceepower*

Technical Standards

IEC 60439-1: Low-voltage switchgear and controlgear assemblies – Part 1: Type-tested and partially type-tested assemblies

GB 7251.1: Low-voltage switchgear and controlgear assemblies – Part 1: Type-tested and partially type-tested assemblies

JB/T 9661: Low-voltage withdrawable switchgear assemblies

GB 7251.12: Low-voltage switchgear and controlgear assemblies – Part 2: Power switchgear and controlgear assemblies

Specifications

Rated Operating Voltage		380 V
Rated Frequency		50/60 Hz
Power Frequency Withstand Voltage (1 min)		2500 V
Rated Current	Horizontal Busbar	1250, 2000, 2500 A
	Vertical Busbar	630, 800, 1000 A
	Main Circuit Plug-in	200, 400 A
	Auxiliary Circuit Plug-in	10 A
Rated Short-time Withstand Current		50 kA
Rated Peak Withstand Current		105 kA
Ingress Protection		IP30

SIVACON-8PT is a next-generation low-voltage switchgear system authorized by Siemens, with a maximum rated current of up to 6300 A. It is widely applied in petrochemical industries, large-scale industrial and mining facilities, commercial complexes, airports, and urban rail transit projects. After intelligent integration, it can be used in metro environmental monitoring systems and smart power distribution systems.

SIVACON-8PT
Low-Voltage Switchgear

Flexible Configuration & Application

Available in fixed-mounted, withdrawable, and plug-in configurations
Modular design allows flexible application for diverse project needs
Horizontal busbars positioned at the top; current capacity up to 6300 A
Large device compartment depth supports various installation requirements

Certified Safety & Reliable Performance

All standard configurations are type-tested to IEC/GB standards
Uses high-quality Siemens switching devices—compact, safe, and reliable
Patented technology passes internal arc-fault tests, ensuring personnel and equipment safety

Optimized Integration & Communication

Dedicated communication terminal blocks and exclusive secondary wiring channels ensure high-quality data transmission

MV & LV Switchgear System Applications

Fuzhou–Xiamen High-Speed Railway
Guiyang–Nanning High-Speed Railway
Malaysia East Coast Railway Project
Lanzhou–Xinjiang Railway
Qinghai–Tibet Railway
Beijing–Kowloon Railway
Hangzhou–Wenzhou Railway
Fuzhou Metro
Shanghai–Hangzhou High-Speed Railway
Xiamen Metro
Guangzhou Metro
Hefei–Fuzhou High-Speed Railway
Xiamen–Shenzhen Railway
Fuzhou–Pingtan Railway
Shanghai–Suzhou–Huzhou Railway
Guangzhou–Shenzhen Railway Renovation
Beijing–Tianjin Intercity High-Speed Railway
Yinchuan–Kunming Expressway
Beijing Daxing International Airport
Fuzhou Changle International Airport
Guangtong–Dali Railway Project
Jinan Station North Concourse Expansion Project
Liubin Expressway (Guangxi) E&M Project
Guigang West Outer Ring Expressway Project
Xi'an–Yan'an Railway (Xi'an North Connecting Line)
Zibo–Boshan Railway Renovation Project
Beijing Sub-Center Station Integrated Transport Hub Project
Supporting Facilities for Golmud Railway
Salaqi–Baotou Automatic Block Line Renovation (Tangbao Line)
Lanzhou Zhongchuan International Airport Loop Railway
Hangzhou Bay Cross-Sea Bridge
South-to-North Water Diversion Project
Wuhan Military World Games
Haichen Energy Storage Chongqing Manufacturing Base
Lufeng Nuclear Power Plant
Xiamen University
Yongchun Country Garden
Yamutang Hydropower Station
Tianjin Launch Vehicle Industrial Base
Fuzhou Strait Olympic Sports Center
Fuzhou Shenglong Huijin Center
Ningkang Hospital, Nanping City
Bailian Tower, Fuzhou
Ma'an Hydropower Station, Jian'ou City
Xitieshan 50MW Wind Power Project, Haixi Prefecture
Jiaxiang Everbright Waste-to-Energy Project
Fujian Changfu Dairy Co., Ltd.
PLA 50MW Wind Tunnel Research & Test Base
Fujian Yongrong Holding Group
Jinhui Huai'an Peninsula
Fuzhou Xiangxin Group
Taizhou South Logistics Base
Wuhan Dream Times Plaza
Zhicheng College, Fuzhou University
Shimen North Apartment Renovation Project
Kashgar Substation 35kV Switchgear
Sichuan Installation – AVIC Chengdu Aircraft Plant No.17180 Construction Project
Rongxi Area Resettlement Housing and Supporting Facilities Project
Fujian Great Wall Huaxing Glass Co., Ltd. Photovoltaic Power Project

The YBP (T/M) 8A series compact substation is an integrated power distribution unit that combines a high-voltage load switch, transformer, and low-voltage switchgear into one compact system. It is designed for use in construction sites, industrial facilities, public infrastructure, and residential communities. Operating at 50 Hz with a rated voltage of 12 kV/0.4 kV and a capacity of up to 1600 kVA, it functions as a complete solution for power reception, voltage transformation, and the supply of 380/220 V for both power and lighting.
This series complies with standards ***GB/T 17467*** and ***DL/T 537-2002***.

YBP (T/M) 8A Series
Compact Substation

- Available in integrated or modular configurations for ground or tunnel applications
- Optional RTU integration enables remote signaling, metering, and control
- Fully assembled, compact design with strong thermal insulation and anti-corrosion properties
- Internal compartments strictly divided into high-voltage, transformer, and low-voltage sections for enhanced safety

Working Environment

Ambient Temperature:

Indoor Maximum Temperature: +45°C
Minimum Temperature: -25°C
Daily Temperature Variation: 25°C

Indoor Relative Humidity: ⩽95% at 25°C (condensation may occur)

Atmospheric Condition: >90 Thunderstorm Days/Year (heavy lightning-prone area)

Altitude: ⩽2000 m

Pollution Level: ⩽Class III

Seismic Resistance

Designed for Seismic Intensity of 8 Degrees
Horizontal acceleration: 0.3g (sine wave, 3 cycles)
Vertical acceleration: 0.15g (sine wave, 3 cycles)
Peak Ground Acceleration (PGA): 0.1g
Characteristic Period: 0.35s

Technical Standards

GB/T 17467-2010 High-voltage/Low-voltage Compact Substations
DL/T 537-2002 Guidelines for Selection of High-voltage/Low-voltage Compact Substations
GB 3906-2006 3.6kV–40.5kV AC Metal-enclosed Switchgear and Controlgear
GB 3804-2004 3.6kV–40.5kV High-voltage AC Load Switches
GB/T 11022-2011 Common Technical Requirements for High-voltage Switchgear and Controlgear Standards
GB 16926-2009 AC High-voltage Load Switch–Fuse Combinations
JB/T 6450-2010 Dry-type Power Transformers
GB 14048 Low-voltage Switchgear and Controlgear
GB 4208-2008 Degrees of Protection Provided by Enclosures (IP Code)
GB 3096-2008 Environmental Quality Standard for Noise
JB/DQ 2080 Rainproof Test Method for High-voltage Switchgear

**Note: The latest version of each standard shall prevail if updated.*

The Indoor Integrated Substation is a modular 10kV power distribution unit specifically designed for railway applications. It provides both primary and backup power for signal, communication, and lighting systems, minimizing the risk of power failures in tunnels or trackside environments and enhancing the stability and reliability of railway infrastructure.

Indoor Integrated Substation

- High-voltage cabinet, low-voltage cabinet, and transformer are mounted on a shared channel rail and can be transported separately
- All components are prefabricated; no secondary wiring is required on site—plug-in connectors enable quick integration
- Ready for testing and operation upon placement, minimizing on-site installation and commissioning time

Ceepower's substation solutions are widely used in urban grid upgrades, residential communities, high-rise buildings, commercial complexes, airports, railways, and expressways, across both indoor and outdoor applications.

Substation Applications

Representative Projects

Lixiang Railway

Fuzhou–Xiamen High-Speed Railway

Chengdu–Kunming Railway

Shanghai–Kunming Railway

Zhengzhou–Jinan Railway

Nanning–Kunming Railway

Guangxi Coastal Railway

Chengdu–Guiyang Railway

Beijing–Shanghai High-Speed Railway

Qianjiang–Zhangjiajie–Changde Railway

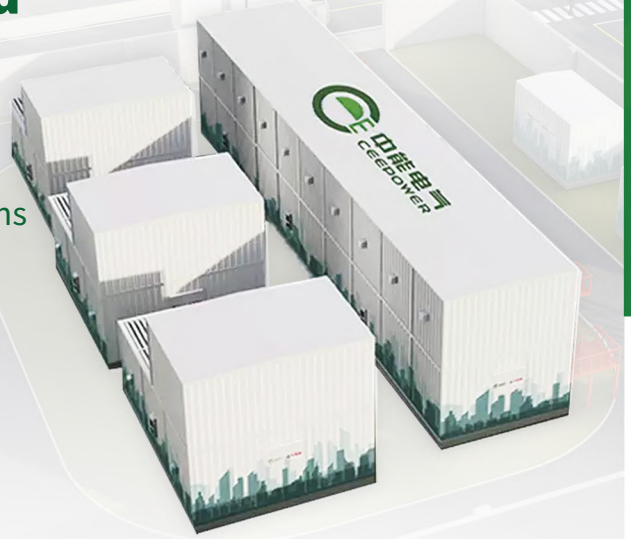
Shantou–Shanwei High-Speed Railway

Changjing–Huangshan High-Speed Railway

To meet the rapid demands of smart grid construction and the shift toward intelligent energy, Ceepower adopts a strategy of standardized design, factory prefabrication, and modular construction in developing prefabricated substations. These solutions offer high levels of integration, efficiency, and customization.

Prefabricated Substation

Modular Prefabricated Substations up to 220kV



Modular Structure & Factory Testing

Flexible block-type layout enables maximum factory prefabrication, reducing on-site installation work and construction complexity. Overall project costs can be reduced by 5–10%.

High Reliability & Fast Commissioning

Each cabin is dustproof, waterproof, corrosion-resistant, fire-resistant, and earthquake-resistant, allowing for maintenance-free operation. Commissioning is possible within one month of delivery.

Compact Footprint & Short Construction Period

Vertical layout reduces land use by 20–30% compared to conventional substations. Construction takes 3–6 months, 20–50% faster than traditional models.

0.4 kV – 35 kV Switchgear Cabin

Configurable Based on Project Needs

110 kV – 220 kV GIS Cabin

Fully Enclosed Indoor Operating Environment

110 kV – 220 kV Transformer & GIS Integrated Cabin

Representative Projects

Since 2020, Ceepower has been developing intelligent new products and technologies. The company launched a prefabricated smart substation for renewable energy applications, which has been widely adopted in rail transit, power systems, petrochemicals, and more. Successful deployments include the 500kV Heping Substation living cabin, 110kV Qingquan Substation expansion project, five 110kV living cabins for Chuxiong Power Supply Bureau, 35kV Xueshan transmission project, 220kV Guojia'ao expansion project, and the Hailong 110kV prefabricated substation (Xicheng Railway).

110kV Xicheng Railway Prefabricated Substation

110kV Xiahe Prefabricated Substation

35kV Shitou Transmission & Transformation Project, China Southern Power Grid

Substation load transfer is hindered by limited space, safety risks from aging equipment, prolonged outages due to complex retrofits, inability to transfer load via obsolete lines, and long construction durations tied to main works and equipment installation.

Trailer Substation

The trailer mounted substation is designed to meet the needs of temporary power supply on construction sites, substation maintenance and emergency power supply.

Complete Functional Assembly

· HV/LV distribution equipment
· Mobile trailer
· Transformer

High Reliability

· Core components selected from high-reliability products
· Optimized switchgear structural design

Mobile Design

· Reinforced movable structure
· Compact layout for easy relocation

Integrated System

· Integrated primary and secondary systems
· Enhanced overall performance

Working Environment (Outdoor)

Ambient Temperature:

Maximum Day Temperature: 40 °C (higher temperature optional)
Minimum Day Temperature: –40 °C (lower temperature optional)
Maximum Daily Temperature Difference: 30 °C

Seismic Resistance:

Ground-level Acceleration: 0.5 g (horizontal and vertical)
Safety Coefficient for Three Sine Resonance Cycles (≥): 1.67

Altitude: ≤95 m

Solar Radiation Intensity: 0.1 W/cm²

Maximum Ice Thickness: 10 mm

Pollution Level: II

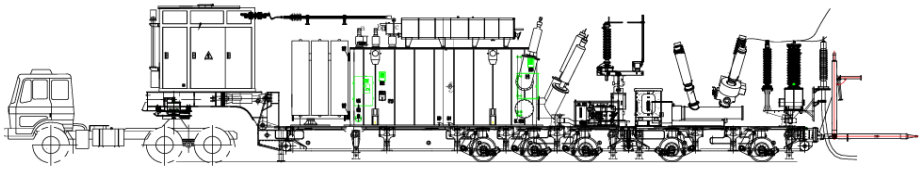
Maximum Wind Speed: 35 m/s (lasting 10 minutes, measured at 10 m above ground)

Humidity:

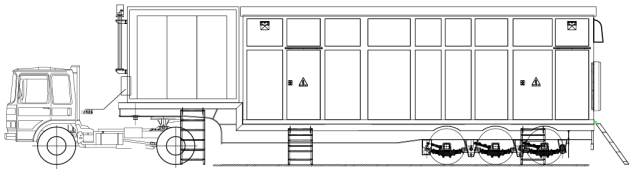
Daily Average Relative Humidity (≤): 95%
Monthly Average Relative Humidity (≤): 90%

Structure

The 110 kV trailer substation is composed of two trailers: the first carries a 110 kV HGIS module, a transformer module, and a 17.5 kV distribution module, while the second carries a 17.5 kV prefabricated switching substation; the first trailer, including the HGIS, can also be split into two independent trailers.



Substation Trailer

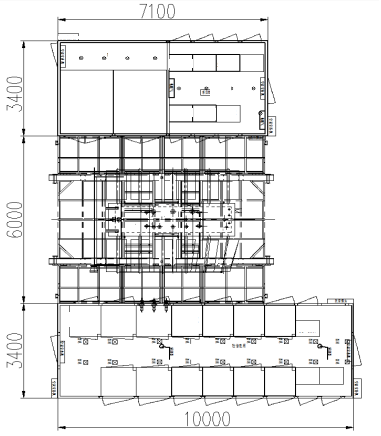


Distribution Trailer

- Modular structure design: the two trucks for the 110 kV and 17.5 kV parts can be operated separately, with all equipment highly integrated and installed on a pullable flatbed chassis.
- The THP hybrid gas-insulated switchgear offers a high safety margin, is reliable, and requires no maintenance.
- The special anti-vibration oil-immersed transformer is designed for safe transportation and adopts anti-vibration technology.
- The hydraulic gooseneck combined with the flat-bed trailer provides flexible and convenient transportation.
- The 17.5 kV high-voltage unit adopts an integrated welded structure with high mechanical strength for stable transportation, and uses imported circuit breakers with a fixed anti-vibration structure.
- Equipped with a maintenance work platform for easy operation of the facilities, with multiple options available for incoming and outgoing line connections.

Skid-Mounted Mobile Substation

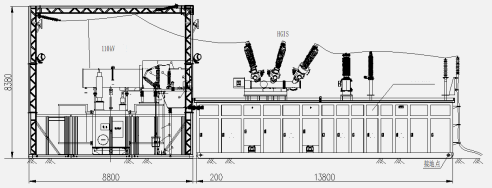
Designed for 110 kV substation refurbishment, equipped with 110 kV HGIS, transformer, 35/10 kV prefabricated modules, and reactive compensation. Secondary systems include transformer protection/control, metering, SCADA/communication, AC/DC power panels, battery system, and line protection. Fully equipped with mechanical and microcomputer five-interlock systems for safe, reliable, and easy operation. Four grounding points are provided on the module base frame, connected to all internal protective grounding; users only need to link them to the station grounding grid for quick installation.



Compact Footprint	Fast Installation	Flexible and Cost-effective
Primary and secondary equipment are integrated inside the prefabricated module with a compact layout.	The transformer uses a steel base and frame, requiring no separate foundation; side cable exits also eliminate the need for cable trenches or additional foundations.	To meet non-temporary power needs, the equipment is customizable and supplied with full-cycle warranty to ensure reliability and safety, with 24-hour after-sales support.

110kV / 10kV Mobile Substation System

The 110 kV skid-mounted mobile substation integrates the transformer, HGIS, GIS equipment, and intelligent secondary systems on a towable base. It provides standardized, modular, prefabricated, and intelligent construction with high mobility, fast commissioning, compact design, high reliability, and strong environmental adaptability.



35kV / 10kV Mobile Substation System

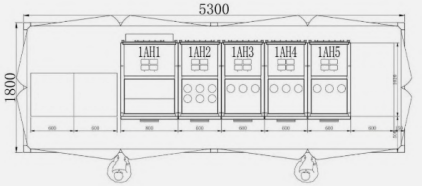
Compact, flexible modules with high protection for heavy-pollution environments; boat-shaped skid and wear-resistant base enable towing on gravel roads.

35 kV Mobile Switching Station

Reliable 35 kV switchgear with full five-interlock protection; no trenches, structures, or foundations needed, and supports unmanned, plug-and-play operation.

10 kV Mobile Switching Station

Symmetrical 10 kV switchgear with up to 14 feeders, equipped with a reliable five-interlock system for safe, fast, and flexible operation.



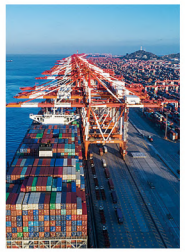
Compact Equipment

(Prefab Substation, Grounding Transformer, Reactive Compensation)

Factory-installed primary and secondary equipment in a sealed, moisture-proof, corrosion-resistant enclosure, achieving system integration, modular assembly, and simplified on-site work.

The SVG (Static Var Generator) cabinet uses PWM (Pulse Width Modulation) control to inject or absorb reactive power—operating in capacitive or inductive mode as needed. It is used to improve the power factor of the distribution system, enhance energy efficiency, reduce electricity costs, and stabilize grid voltage and transmission capacity.





SVG Cabinet
Static Var Generator

Utilizes multi-level bridge converter or PWM technology, reducing reliance on large capacitor banks and avoiding complex impedance calculations

Compact design enables fast and seamless bidirectional (capacitive and inductive) reactive power compensation

Distribution Box Series

The distribution box serves as the control center for the efficient allocation of power across various components in electrical circuits. It reliably connects to the power supply, manages load distribution, and plays a key role in ensuring power quality and user satisfaction. Featuring compact size, easy installation, independent configuration, and stable operation, it is widely used in railway power supply and system integration projects involving traction power and auxiliary systems.

Reactor Series

Ceepower's reactor series includes bidirectional reactive power compensation devices, dynamic compensation units, sectional switching reactor packages, and integrated outdoor quality compensation systems. These products enable rapid response to reactive power fluctuations in the grid, enhance power quality, and effectively improve grid stability and reliability.