

HUADE ELECTRIC

# SHENYANG HUADE HIGH TECHNOLOGY ELECTRIC CO., LTD.

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A LEADING SF<sub>6</sub>-FREE GREEN SWITCHGEAR MANUFACTURER



HUADE ELECTRIC

# COMPANY PROFILE

**SHENYANG HUADE HIGH TECHNOLOGY ELECTRIC CO., LTD.**

**A SUBSIDIARY OF SHENYANG HUALI ELECTRIC GROUP, ESTABLISHED IN 2009.**

Shenyang Huali Electric Group, established in 1992, is a corporate group consisting of Shenyang Huade High Technology Electric Co., Ltd., Shenyang Huali Energy Equipment Manufacturing Co., Ltd., and Huali Electric Power Installation Engineering Co., Ltd. The Group integrates product research and development, manufacturing, product testing, power engineering installation, and electric power property management services. Its power installation company holds a National Class-III Professional Contracting Qualification for Power Installation (including repair and testing), and is capable of undertaking 110kV transmission and substation projects. It provides comprehensive solutions, including design, construction, maintenance, energy-saving optimization, and management for projects of the same voltage level and enterprise users. C-GIS, medium-voltage environmentally friendly C-GIS, medium- and low-voltage AIS (Air-Insulated Switchgear), prefabricated substations, and core components of switchgear. Additionally, it offers wind power busbars, insulation products, as well as power property management, installation and construction services.

Shenyang Huade High Technology Electric Co., Ltd., founded in 2009, with a registered capital of RMB 165 million. The Company occupies an area of approximately 100,000 square meters, with a total building area of 70,000 square meters. Upholding the principles of green, low-carbon, energy-saving, and environmental protection, the Company specializes in the research, development, and manufacturing of high-tech, environmentally friendly, and intelligent gas-insulated metal-enclosed switchgear. The Company's independently developed and designed 12kV, 24kV, 40.5kV, and 72.5kV series environmentally friendly gas-insulated metal-enclosed switchgear (C-GIS and H-GIS) are pioneering products in China. These high-tech, environmentally friendly innovations have been recognized by the China Academy of Environmental Sciences as emission-reducing products and have received the China Environmental Labeling (Type II) Certification.





# COMPANY HONORS

Environmental  
protection



电器集团  
Electric Group

# DEVELOPMENT HISTORY

## 2009

In 2009, Shenyang Huade High Technology Electric Co., Ltd. was registered, adhering to the green, low carbon, focus on high-tech, intelligent environmental protection gas insulated metal closed switchgear and combined electrical appliances research and development and manufacturing.



**华德海泰电器**  
HUADE HIGH-TECH ELECTRIC



## 2013

In 2013, the company signed a contract with GE Canada to produce and export wind busbars, which became a new economic growth point for the enterprise.



## 2010

In 2010, the company started carbon footprint certification and was recognized by the British Standards Institute, becoming the first enterprise in China to obtain carbon footprint certification.

## 2015

In 2015, Green gas-insulated metal-enclosed switchgear (C-GIS) was listed in the catalogue of new technologies promoted by the National Development and Reform Commission. In the same year, the world's first high-voltage environmentally friendly gas combination electrical appliance HG6-72.5 (MTS) achieved a safe operation record under the extreme cold weather of -52 degrees Celsius.



## 2017

In 2017, 'the SF<sub>6</sub> Gas Emission Reduction Methodology' prepared by HUADE ELECTRIC was approved by the UN CDM Executive Committee (No. AM0119, 94th Session, Bonn).

## 2021

In 2021, the international first 12kV-4000A high-current environment-friendly gas-insulated metal closed switchgear was successfully developed.



Large-scale Methodology

SF<sub>6</sub> emission reductions in gas insulated metal enclosed switchgear

## 2020

In 2020, "Carbon Peak" and "Carbon Neutrality" The National Energy Administration invites us to participate in the formulation of emission reduction policies.

## 2023

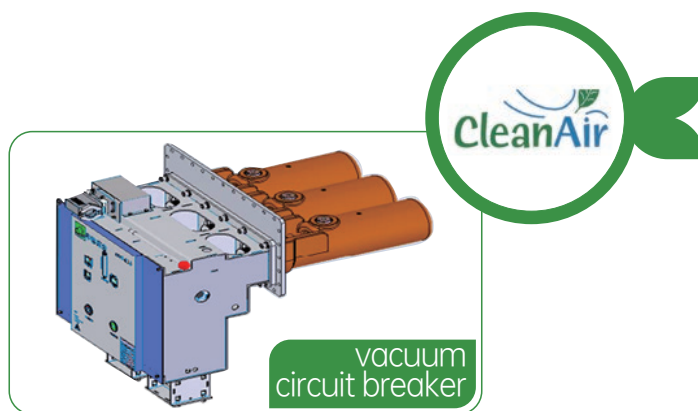
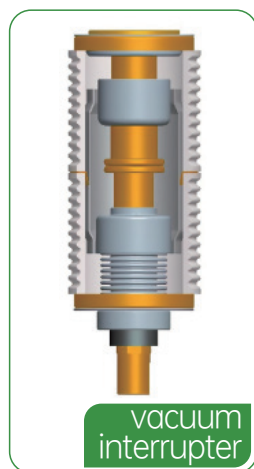
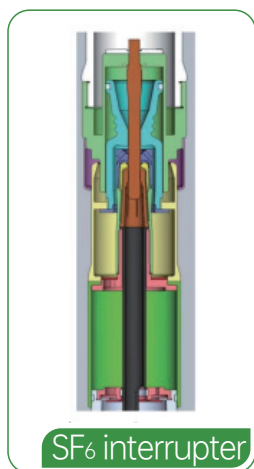
In 2023, Open up the international market and export "Chinese wisdom" -- Huade Electric signed a strategic cooperation agreement with the Middle East partners. Invited by the Ministry of Ecology and Environment, on behalf of China to participate in the United Nations Climate Change Conference, "green technology" to the world stage!

# CORE TECHNOLOGY

Professional  
technology

## SF<sub>6</sub>-free alternative technology

- Adopting vacuum interrupter for breaking, replacing the traditional high-voltage SF<sub>6</sub> free circuit breaker, SF<sub>6</sub> Free, and no decomposition of toxic substances.
- Insulating medium: Clean Dry Air. Insulated with clean air, no SF<sub>6</sub> gas used.
- Advanced nanomaterial application technology, effectively addressing switch temperature rise issues.
- Employs advanced processes and innovative design to ensure optimal switch performance.
- The switchgear is completely free of SF<sub>6</sub> gas usage and emission, achieving emission reduction and environmental protection purposes.



## Green switchgear features

01

No SF<sub>6</sub> gas usage and emissions, reducing green house gas emissions;

02

No toxic gas produced, harmless to people and the environment;

03

Compact design, half the size of traditional products;

04

Key components are sealed in a stainless steel gas tank, maintenance-free;

05

Suitable for high-altitude, humid, coastal corrosion-prone areas, as well as underground and indoor spaces;

06

Products for 12kV, 24kV, 36kV, 40.5kV, 72.5kV, 145kV.



# CERTIFICATES

Environmental  
protection

## CARBON FOOTPRINT CERTIFICATION

## CDM EMISSION METHODOLOGY



300<sup>+</sup> TYPE TEST  
REPORTS

40<sup>+</sup> INVENTION  
PATENTS



100<sup>+</sup> UTILITY MODEL  
PATENTS

# GREEN DEVELOPMENT

Emission  
reduction

Green  
safety

HUADE ELECTRIC, A FREQUENT INVITEE TO THE UN CLIMATE CONFERENCE, SHOWCASING CHINA'S INNOVATIONS IN SF-FREE SOLUTIONS AND EMISSION REDUCTION.

## REPRESENTING CHINESE COMPANIES AT COP28 UNITED NATIONS CLIMATE CHANGE CONFERENCE (DECEMBER 2023)



## REPRESENTING CHINESE COMPANIES AT COP29 UNITED NATIONS CLIMATE CHANGE CONFERENCE (DECEMBER 2024)





# PRODUCT RANGE

## HUALI ENERGY PRODUCT RANGE

No.	Voltage	Product	Ratings
1	0.4kV	MNS Low Voltage Withdrawable Switchgear	1600A、2500A 4000A、6300A
		GGD Low Voltage Fixed Switchgear	1500A、2500A
2	12kV	KYN28-12 Metal-Clad Withdrawable AC Metal-Enclosed Switchgear	630A、1250A、2500A、 3150A、4000A
3	40.5kV	KYN80-40.5 Metal-Clad Withdrawable AC Metal-Enclosed Switchgear	1250A、2500A

## HUADE ELECTRIC PRODUCT RANGE

No.	Voltage	Product	Ratings	Remark
1	12kV	HG4-12 Green Gas-Insulated Metal-Enclosed Switchgear (C-GIS)	1250A,2500A 3150A,4000A	The first 4000A model for 12kV C-GIS in world wide
		XGN118-12 Green Gas-Insulated Ring Main Unit (RMU)	630A	
		YB□-12 Prefabricated Substation	630kVA	Integrated Environmental Friendly Substation
		ZW68-12 Outdoor High-Voltage AC Vacuum Circuit Breaker	630A	
2	24kV	BGA24 Gas-Insulated Metal-Enclosed Switchgear (C-GIS)	1250A,2000A	
3	40.5kV	HG3-40.5 Green Gas-Insulated Metal-Enclosed Switchgear (C-GIS)	1250A,2500A, 3150A	The first Green model in China
		YB□-40.5 Prefabricated Substation	2000kVA - 11000kVA	Integrated Environmentally Friendly Substation
4	72.5kV	ZHN3-72.5 Gas-Insulated Metal-Enclosed Switchgear (C-GIS)	2500A	The first model in the world
		HG6-72.5 Separate Tank Green Gas-Insulated Metal-Enclosed Switchgear (HGIS)	2500A	The first Green model in the world
		ZH3A-72.5 Common Tank Green Gas-Insulated Metal-Enclosed Switchgear (HGIS)	1250A	The first Green model in the world
		YB□-72.5 Prefabricated Substation	22000kVA	Integrated Environmental Friendly Substation
5	126kV	ZF□-126 Mixed Gas-Insulated Metal-Enclosed Switchgear	3150A	

# GREEN MANUFACTURING

THE COMPANY HAS BEEN AWARDED THE TITLE OF "LIAONING PROVINCIAL GREEN FACTORY".

The company embraces the mission of "improving human living environments through technological innovation," dedicated to developing and producing environmentally friendly switchgear. We strive to lead the power industry in green technologies, setting an example for protecting our planet. By advancing green manufacturing, we implement source control, develop green products, adopt clean production technologies and processes, and establish green supply chain management, fully committed to building green factories and zero-carbon factories.



## WORLD-CLASS MODERN PROCESSING EQUIPMENT, PRODUCTION LINES AND ADVANCED TESTING LABORATORY



01 Germany imported TRUMPF laser cutting and laser welding equipment.



02 Japan imported Murata sheet metal flexible processing production line.



03 Germany imported HEDRICH epoxy resin automatic pressure gel production line.



04 Germany imported helium leak detection and gas filling equipment.



05 Fully shielded 350kv partial discharge-free power frequency test laboratory.



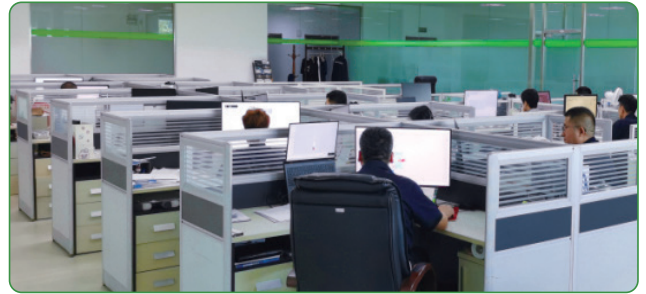
06 Circuit breaker characteristic comprehensive test device.



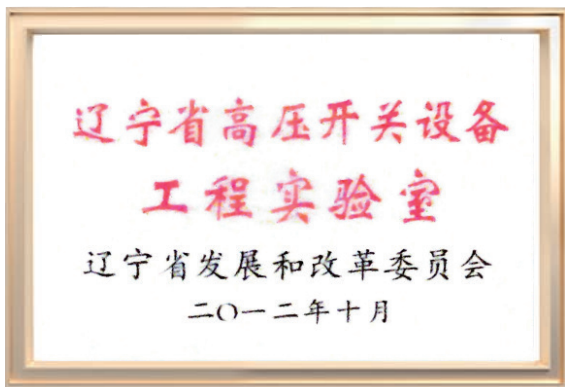
# INDUSTRY-LEADING R&D AND DESIGN CAPABILITY

## R&D TEAM

The Company has a highly skilled R&D team, comprising experts in high-voltage insulation, electrical design, mechanical design, simulation analysis, and other specialized fields. We have established strong partnerships with renowned universities and research institutions, including Shenyang University of Technology, Dalian University of Technology, and China Electric Power Research Institute, to advance the research and development of medium- and long-term projects.



# QUALITY CONTROL



- ✓ A comprehensive quality assurance system has been established, certified to ISO 9001.
- ✓ The system ensures control over all factors affecting product quality, keeping the production process under strict supervision.
- ✓ Stringent quality control measures are in place, with comprehensive incoming inspection, process inspection, and final inspection procedures to guarantee high-quality, compliant products.
- ✓ Advanced testing and inspection equipment support product validation and factory acceptance tests.
- ✓ The laboratory has been recognized as the Liaoning Province High-Voltage Switchgear Engineering Laboratory.



# KEY PRODUCT

No.	Product	Model	Voltage
1	Dry-Air GIS	HG4-12	12kV
2	Dry-Air GIS	HG9-14	24kV
3	Dry-Air GIS	HG3-36/40.5	36kV/40.5kV
4	Dry-Air GIS	HG6-72.5	72.5kV
5	Dry-Air GIS	ZHN3A-72.5	72.5kV
6	GIS	HG11-145	145kV
7	Dry-Air RMU	XGN118-12	12kV
8	Dry-Air RMU	HG12-17.5	11kV
9	YB□-12/0.4 PREFABRICATED SUBSTATION		
10	YB□-40.5 WIND POWER GENERATION COMBINED TRANSFORMER SUBSTATION		
11	Pole Mounted VCB	ZW68-12/T630-20	12kV
12	FTU	FTD301	AC220V±20%
13	DTU	HTD301	AC220V±20%



# HG4-12 GREEN CUBICAL TYPE GIS

## KEY FEATURES:

- Eco-Friendly Design
- Compact and Efficient
- Robust Construction
- Flexible Configuration
- Intelligent Control
- Reliable Operation



## TECHNICAL PARAMETERS

No.	Item			Unit	Technical parameters
1	Voltage			kV	12
2	Rated frequency			Hz	50, 60
3	Rated insulation level	Power frequency	Phase to phase, phase to earth	kV	42
		withstand voltage (1min)	Across the isolating distance open contact gap	kV	48
		Lighting impulse	Phase to phase, phase to earth	kV	75
		withstand voltage	Across the isolating distance open contact gap	kV	85
		Power frequency withstand voltage of auxiliary and control circuit (1min)		kV	2
4	Rated current			A	630,1250, 2500, 3150, 4000
5	Rated short-circuit breaking current			kA	25, 31.5, 40
6	Rated short circuit making current			kA	65, 82, 104
7	Rated short-time withstand current			kA /3s	25, 31.5, 40
8	Partial discharge			pC	≤20
9	Insulation gas				Clean air
10	Vacuum circuit breaker grade				M2 E2 C2
11	Internal arc fault IAC				AFLR
12	Overall dimension mm (LxWxH)			630A,1250A: 1600×600×2500	
				2500A: 1900×800×2500	
				3150A,4000A: 1950×1000×2500	

# HG9-24 GREEN CUBICAL TYPE GIS

## KEY FEATURES:

- Eco-Friendly Design
- Compact and Efficient
- Robust Construction
- Flexible Configuration
- Intelligent Control
- Reliable Operation



TECHNICAL PARAMETERS					
No.	Item			Unit	Technical parameters
1	Voltage			kV	24
2	Rated frequency			Hz	50, 60
3	Rated insulation level	Power frequency	Phase to phase, phase to earth	kV	65
		withstand voltage (1min)	Across the isolating distance	kV	79
		Lighting impulse	Phase to phase, phase to earth	kV	125
		withstand voltage	Across the isolating distance	kV	145
		Power frequency withstand voltage of auxiliary and control circuit (1min)		kV	2
4	Rated current			A	630, 1250, 2500
5	Rated short-circuit breaking current			kA	25, 31.5
6	Rated short-circuit making current			kA	65, 82
7	Rated short-time withstand current			kA /3s	25, 31.5
8	Partial discharge			pC	≤20
9	Insulation gas				Clean air
10	Vacuum circuit breaker grade				M2 E2 C2
11	Internal arc fault (IAC)				AFLR
12	Overall dimension mm (LxWxH)			630/1250A: 1450×600×2300	
				2500A: 1550 ×800×2300	

# HG3-36/40.5

## GREEN CUBICAL TYPE GIS

### KEY FEATURES:

- Eco-Friendly Design
- Compact and Efficient
- Robust Construction
- Flexible Configuration
- Intelligent Control
- Reliable Operation



### TECHNICAL PARAMETERS

No.	Item			Unit	Technical parameters	
1	Voltage			kV	36	40.5
2	Rated frequency			Hz	50, 60	
3	Rated insulation level	Power frequency	Phase to phase, phase to earth	kV	70	95
		withstand voltage (1min)	Across the isolating distance	kV	80	118
		Lighting impulse	Phase to phase, phase to earth	kV	170	185
		withstand voltage	Across the isolating distance	kV	195	215
		Power frequency withstand voltage of auxiliary and control circuit (1min)		kV	2	
4	Rated current			A	630,1250,2500,3150	
5	Rated short-circuit breaking current			kA	25, 31.5	
6	Rated short-circuit making current			kA	65, 82	
7	Rated short-time withstand current			kA /3s	25, 31.5	
8	Partial discharge			pC	≤20	
9	Insulation gas				Clean air	
10	Vacuum circuit breaker grade				M2 E2 C2	
11	Internal arc fault (IAC)				AFLR	
12	Overall dimension mm (LxWxH)			630A,1250A: 1850×800×2600		
				2500A: 1950×900×2600		
				3150A,4000A: 1950×900×2600		



# HG6-72.5 GREEN HYBRID GIS

## KEY FEATURES:

- Environment friendly
- Superior breaking capacity
- Outstanding economical efficiency
- Intelligent detection
- Excellent seismic resistance
- Standardized product series, easy and quick installation



## TECHNICAL PARAMETERS

No.	Item		Unit	Technical parameters
1	Rated voltage		kV	72.5
2	Rated frequency		Hz	50, 60
3	Rated current		A	1250~2500
4	Rated short-circuit breaking current		kA	31.5
5	Rated short-circuit making current		kA	80, 86
6	Power frequency withstand voltage (1 min)	Phase to earth, Phase to phase	kV	160
		Across the isolating distance	kV	160+42
7	Rated lighting impulse withstand voltage (Lighting impulse withstand voltage)	Phase to earth, Phase to phase	kV	380
		Across the isolating distance	kV	380+60
8	Clean air Gas pressure (20°C, relative pressure)	Rated pressure	Mpa	0.6
		Alarm pressure	Mpa	0.56
9	Annual leakage rate		≤0.1%	
10	Partial discharge (1.2 times the rated voltage)	Whole compartment	pC	≤5
		Insulation parts	pC	≤3
11	Interrupter technology		Vacuum	
12	Overall dimension mm (LxWxH)		3200×3600×4100(Double busbar) 3200×2900×4100(Single busbar)	

# ZHN3A-72.5 GREEN GIS (FOR NEW ENERGY)

## KEY FEATURES:

- Space-saving design
- Advanced technology
- High reliability
- Suitable for offshore operations



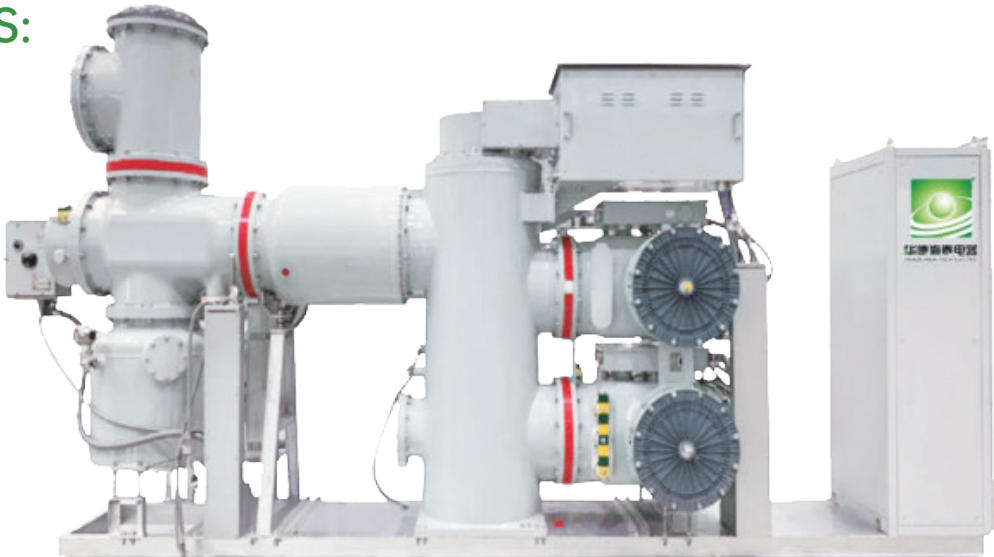
## TECHNICAL PARAMETERS

No.	Item		Unit	Technical parameters
1	Rated voltage		kV	72.5
2	Rated frequency		Hz	50, 60
3	Rated current		A	1250~2500
4	Rated short-circuit breaking current		kA	31.5
5	Rated short-circuit making current		kA	80, 86
6	Power frequency withstand voltage (1 min)	Phase to earth, Phase to phase	kV	160
		Across the isolating distance	kV	160+42
7	Lighting impulse withstand voltage	Phase to earth, Phase to phase	kV	380
		Across the isolating distance	kV	380+60
8	Clean air Gas pressure (20°C, relative pressure)	Rated pressure	Mpa	0.6
		Alarm pressure	Mpa	0.56
9	Annual leakage rate		≤0.1%	
10	Partial discharge (1.2 times the rated voltage)	Whole compartment	pC	≤5
		Insulation parts	pC	≤3
11	Interrupter technology		Vacuum	
12	Overall dimension mm (LxWxH)		1000×2400×2500	

# HG11-145 SF6 GIS

## KEY FEATURES:

- High reliability
- Enhanced safety
- Superior adaptability
- Compact and intelligent design



TECHNICAL PARAMETERS				
No.	Item		Unit	Technical parameters
1	Rated voltage		kV	145
2	Rated frequency		Hz	50, 60
3	Rated current		A	1250~3150
4	Rated short-circuit breaking current		kA	40
5	Rated short-circuit making current		kA	100, 108
6	Power frequency withstand voltage (1min)	Phase to earth, phase to Phase	kV	275
		Across the isolating distance	kV	315
7	Lighting impulse withstand voltage	Phase to earth, phase to Phase	kV	650
		Across the isolating distance	kV	750
8	SF6 vacuum interrupter Gas pressure (20℃, relative pressure)	Rated pressure	MPa	0.6
		Alarm pressure	MPa	0.55
9	Annual leakage rate		≤0.1%	
10	Partial discharge (1.2 times the rated voltage)	Whole compartment	pC	5
		Insulation parts	pC	3
11	Overall dimension mm (LxWxH)		5000×1000×2800	



# XGN118-12 GREEN GAS-INSULATED RMU

## KEY FEATURES:

- Eco-Friendly Design
- Compact and Efficient
- Robust Construction
- Flexible Configuration
- Intelligent Control
- Reliable Operation



## TECHNICAL PARAMETERS

No.	Item		Unit	Technical parameters	
				LBS Panel	CB Panel
1	Rated voltage		kV	12	
3	Rated frequency		Hz	50, 60	
2	Rated current		A	630	630
4	Rated short-time power-frequency withstand voltage (effective value)	Phase to earth, phase to Phase	kV	42	
		Across the isolating distance	kV	48	
	Rated lightning impulse withstand voltage (peak value)	Phase to earth, phase to Phase	kV	75	
		Across the isolating distance	kV	85	
5	Rated short-circuit breaking current		kA	/	20, 25
6	Rated short-circuit making current			52, 65	
7	Rated short-time withstand current		kA/3s	20, 25	
8	Closed-loop breaking current		A	630	-
9	Circuit breaker / Internal arc fault(IAC)			E3,M1	E2,M2,C2
10	Partial discharge		PC	≤20	
11	Insulation gas			Clean air	
12	Internal arc fault(IAC)			AFLR	
13	Overall dimensions mm (L×W×H)			850×420×2000	

# HG12-17.5 CLEAN AIR / SF<sub>6</sub> GAS-INSULATED RMU

## KEY FEATURES:

- Eco-Friendly Design
- Compact and Efficient
- Robust Design
- Flexible Configuration
- Intelligent Control
- Reliable Operation



## TECHNICAL PARAMETERS

No.	Item		Unit	Technical Parameters	
				LBS Panel	CB Panel
1	Rated voltage		kV	17.5	
2	Rated current		A	630	630
3	Rated frequency		Hz	50, 60	
4	Rated short-circuit breaking current		kA	/	25
5	Circuit breaker /Load switch Level			E3、M1	E2、M2、C2
6	Annual leakage rate		%	≤0.1	
7	Rated short-time power-frequency withstand voltage (effective value)	Phase to phase, phase to ground	kV	38	
		Across the isolating distance	kV	45	
	Rated lightning impulse withstand voltage (peak value)	Phase to phase, phase to ground	kV	95	
		Across the isolating distance	kV	110	
8	Protection level		PC	enclosure: IP54 gas-filled compartment: IP67	
9	Internal arc fault IAC		AFL	25kA/1s	
10	Overall dimension mm (LxWxH)			1410X1275X2100	

# YB□-12/0.4 PREFABRICATED SUBSTATION

## KEY FEATURES:

- High efficiency and energy-saving
- Eco-friendly (green and environmentally friendly)
- Factory prefabricated
- Automatic control system
- Emergency power backup
- Compact design
- Convenient for maintenance



## TECHNICAL PARAMETERS

No.	Item	Unit	High-voltage switchgear	Transformer	Low-voltage switchgear
1	Rated capacity	kVA	-	400, 500, 630	-
2	Rated voltage	kV	12	-	0.4
3	Rated current	A	630	-	800~1250
4	Rated short-circuit breaking current	kA	20	-	50
5	1min power frequency withstand voltage	kV	Earth 42 Isolating distance 48	35	2.5
6	Lighting impulse withstand voltage	kV	Earth 75 Isolating distance 85	75	-
7	Enclosure protection level		Enclosure IP33D, Inner compartment IP2XC		
8	Noise level	dB	≤55		
9	Enclosure level		10		
10	Internal arc level		IAC-AB 20kA 0.5s		
11	Overall dimensions mm (L×W×H)		3600×2200×2500		



# YB□-40.5

## WIND POWER GENERATION COMBINED TRANSFORMER SUBSTATION

### KEY FEATURES:

- Small size
- Light weight
- Easy Installation
- Low noise
- Low energy loss
- Sand protection
- Guard against theft
- Strong overload capacity
- Simple maintenance



### TECHNICAL PARAMETERS

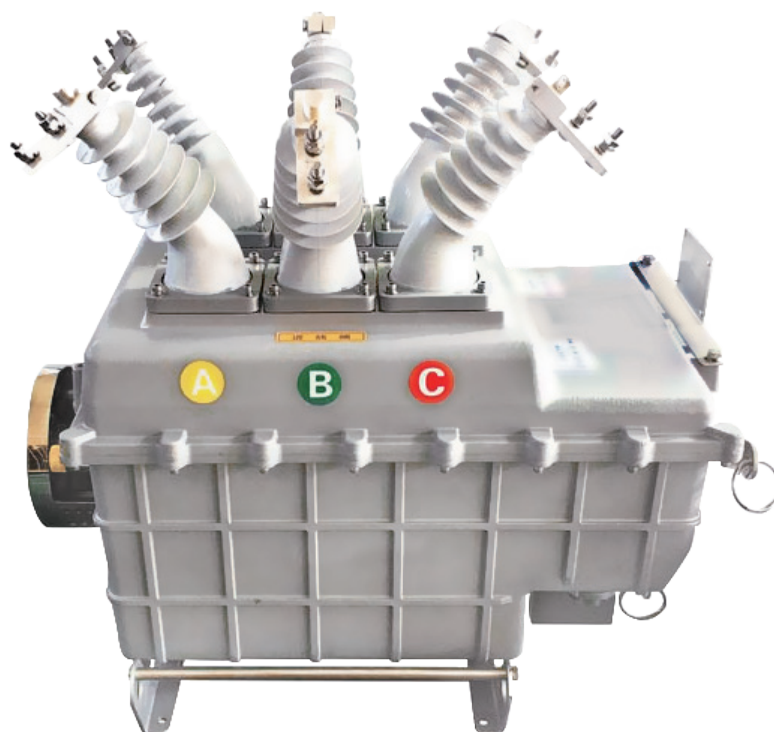
No.	Item		Unit	High-voltage switchgear	Transformer	Low-voltage switchgear
1	Rated voltage		kV	40.5	35	0.69/0.95/1.14
2	Rated capacity		kVA	-	600~11000	-
3	Rated frequency		Hz	50/60	-	50/60
4	Rated current		A	50~1250	-	2000~6300
5	Power frequency withstand voltage (1min)	Phase to phase, phase to earth	kV	95	85	5
		Isolating distance	kV	118	-	-
6	Lighting impulse withstand voltage	Phase to phase, phase to earth	kV	185	220	12
		Isolating distance	kV	215	-	-
7	Rated short-circuit breaking current (effective value)		kA	31.5	-	50
8	Rated short-time withstand current (effective value)		kA	31.5	-	50
9	Rated short circuit making current (Peak value)		kA	80		
10	Rated peak withstand current		kA	80		105
11	Internal arc level			IAC-AB 31.5 kA 0.5S		
12	Protection level			IP55		
13	Noise level		dB	≤55		

# ZW68-12/T630-20

## OUTDOOR HIGH-VOLTAGE AC VACUUM CIRCUIT BREAKER

### KEY FEATURES:

- Environment friendly
- Automatic safety features
- High reliability
- Strong flexibility
- Space-saving
- High breaking performance



### TECHNICAL PARAMETERS

No.	Item		Unit	Technical parameters
1	Rated voltage		kV	12
2	Rated insulation level	1min power frequency withstand voltage (phase-to-phase, phase-to-earth (wet test) / across isolating distance)	kV	42, 48
		Lightning impulse withstand voltage (phase-to-phase, phase-to-earth /across isolating distance)		75, 85
3	Rated frequency		Hz	50
4	Rated current		A	630
5	Rated short-time withstand current		kA	20
6	Rated peak withstand current		kA	50
7	Rated short-circuit current duration time		s	4
8	Secondary circuit 1min frequency withstand pressure		kV	2
9	Rated pressure		Mpa	0.02
10	Annual leakage rate		Year	≤1%

# FTD301 FEEDER TERMINAL UNIT (FTU)

## KEY FEATURES:

- **Mainly used for monitoring and data collection of distribution lines.**
- **Three-remote functions:** remote measurement, remote signaling, and remote control.
- **Protection Functions:** three-stage overcurrent protection, inverse time overcurrent protection, zero sequence current protection, reclosing, post acceleration, and closing inrush current protection.
- **Intelligent distributed logic function:** can quickly determine the nature of faults, achieve local fault clearance in sections, automatic fault isolation, and automatic power restoration of the non-fault section.
- **Power supply function:** Dual-circuit power supply switching. When AC power fails, it automatically switches to the backup power supply.
- **Communication function:** wireless GPRS/GSM, Ethernet interfaces, supporting MODBUS, IEC104 and other power communication protocols.



## TECHNICAL PARAMETERS

No.	Item			Unit	Technical parameters
1	Power Supply	Working Voltage		V	AC220V±20%.5
		Voltage Frequency		Hz	50±5%
2	Remote Measurement	A.C. voltage	Nominal Sampling Voltage	V	100V
		A.C. current	Nominal Sampling Current	A	5A, 1A
		Rated frequency		Hz	45~55
3	Remote Control	Contact capacity			DC27V,10A
		Input working voltage		V	AC220V
		Output Voltage		V	DC24V
4	Power Consumption	Power consumption of the whole equipment		VA	≤20VA
5	Backup Power Supply	Standard: super capacitor Optional: external lead-acid battery, rated voltage DC24V, single battery 7Ah.			



# HTD301

## DISTRIBUTION TERMINAL UNIT (DTU)

### KEY FEATURES:

- Mainly used in switching station, RMU, small substation.
- Three-remote functions, fault recording, fault detection and isolation functions.
- Three-stage overcurrent protection, zero-sequence current protection, loss of voltage protection, disconnection protection, reclosing, and reset functions.
- Intelligent power supply design, using AC three-phase power supply. In case of power supply line fails (one phase loss in three-phase, three-wire power supply), the AC power supply can still support normal terminal operation. Seamless switching between AC power supply and backup power supply is supported.
- Communication function: wireless GPRS, RS-232/RS-485 serial ports, Ethernet interface, supporting ModBus, IEC104 and other communication protocols.



### TECHNICAL PARAMETERS

No.	Item			Unit	Technical parameters
1	Power Supply	Working Voltage		V	AC220V±20%.5
		Voltage Frequency		Hz	50±5%
2	Remote Measurement	A.C. voltage	Nominal Sampling Voltage	V	100V
		Zero sequence voltage	Nominal Sampling Voltage	V	100V
		Three-phase current	Nominal Sampling Current	A	5A/1A
		Rated frequency		Hz	45~55
3	Remote Control	Contact capacity			AC 250V/5A or DC 110/0.5A pure resistive load.
		Input working voltage		V	AC220V
		Output Voltage		V	DC24V
4	Power Consumption	Power consumption of the whole equipment		VA	≤50VA
5	Backup Power Supply	Backup power supply rated voltage DC48V; maintenance-free valve-regulated lead-acid batteries, battery life is no less than 3 years.			

# TYPICAL PERFORMANCE

## POWER GENERATION FIELD

### 01

Goldwind Technology Changli 200MW wind-power Project -Hebei Province.

End-User	Henan Province Second Building Engineering Development Co.,Ltd.
Product Model	Combined substation/YB-40.5
Voltage (kV)	37
Q' ty	34



### 03

National UHV DC Transmission Supporting Project (Baiyinhua Power Plant Project) -Inner Mongolia.

End-User	CPIC Power Engineering Co.,Ltd.
Product Model	AIS/KYN28A-12
Voltage (kV)	10
Q' ty	149

### 05

100MW wind power project (annual production of 5 million kVAH lead carbon batteries and annual treatment of 200,000 tons of waste lead batteries comprehensive utilization) -Jilin Province

End-User	State Nuclear Power Planning and Design Institute Co.,Ltd.
Product Model	Combined substation/YB-40.5
Voltage (kV)	35
Q' ty	20



# TYPICAL PERFORMANCE

## 02

Yellow River Longyangxia Phase II 530MWp Photovoltaic Project (step-up station)  
-Qinghai Province.

End-User	China Power Investment Corporation (CPIC)
Product Model	GIS/HG3-40.5
Voltage (kV)	35
Q' ty	32



## 04

Gaoyazitan Gaotai County 10MW PV Grid-connected Power Generation Project  
-Qinghai Province.

End-User	Zhangye Jidian New Energy Co.,Ltd.
Product Model	Prefabricated substation/YB-40.5
Voltage (kV)	35
Q' ty	4

## 06

Sg Selangor Project-Malaysia.

End-User	Malaysia
Product Model	GIS/BGA24
Voltage (kV)	24
Q' ty	23



# TYPICAL PERFORMANCE

## POWER TRANSMISSION FIELD

### 07

Suzhou Huqiu Third Main Transformer 220kV Expansion Project-Jiangsu Province.

End-User	State Grid Jiangsu Electric Power Co.,Ltd.
Product Model	GIS/HG4-12
Voltage (kV)	10
Q' ty	19



### 09

The First Green 72.5kV GIS in China (Liaoning Yingchang Substation Project) - Liaoning Province.

End-User	Shenyang Electric Power Bureau Cable Engineering Co., Ltd.
Product Model	C-GIS/ZHN3-72.5
Voltage (kV)	66

### 11

Ningxia's First Fully Indoor 220 kV Transmission and Transformation Project (Ningxia Yin-chuan Diannong Project) - Ningxia.

End-User	State Grid Ningxia Electric Power Co.,Ltd.
Product Model	GIS/HG3-40.5
Voltage (kV)	35
Q' ty	12





# TYPICAL PERFORMANCE

## 08

State Grid's First Typical Pilot Project for Prefabricated Switchgear Cabins (Qinghai Haibei Caishitu Project) - Qinghai Province

End-User	State Grid Qinghai Electric Power Company Material Company
Product Model	Prefabricated substation, GIS/HG4-12,
Voltage (kV)	10
Q' ty	1,10



## 10

Water Transmission and Supply Project (Northwest Liaoning Water Supply Qinghemen Project) - Liaoning Province.

End-User	Liaoning Northwest Water Supply Co., Ltd.
Product Model	C-GIS/HG6-72.5
Voltage (kV)	66
Q' ty	5

## 12

National Key Project "West-Hunan Power Transmission" (Lhasa 500 kV Substation) - Tibet.

End-User	State Grid Tibet Electric Power Co., Ltd.
Product Model	GIS/HG4-12
Voltage (kV)	10
Q' ty	2



# TYPICAL PERFORMANCE

## INDUSTRIAL USERS

13

Petrochemical (CNOOC - Shandong Haihua Group Project)-Shandong Province.



15

Steel Plant (China Nonferrous Metals (Shenyang) Metallurgical Project)  
- Liaoning Province

## OTHER FIELDS

17

Rail Transit (Shenyang Metro Project)  
- Liaoning Province



# TYPICAL PERFORMANCE

14

Power Distribution(ShenGu Group-Large  
Enterprise Substation Project)  
- Liaoning Province.



16

Iron ore (Xinjiang Poly - Deep Blue Mining  
Project)- Xinjiang

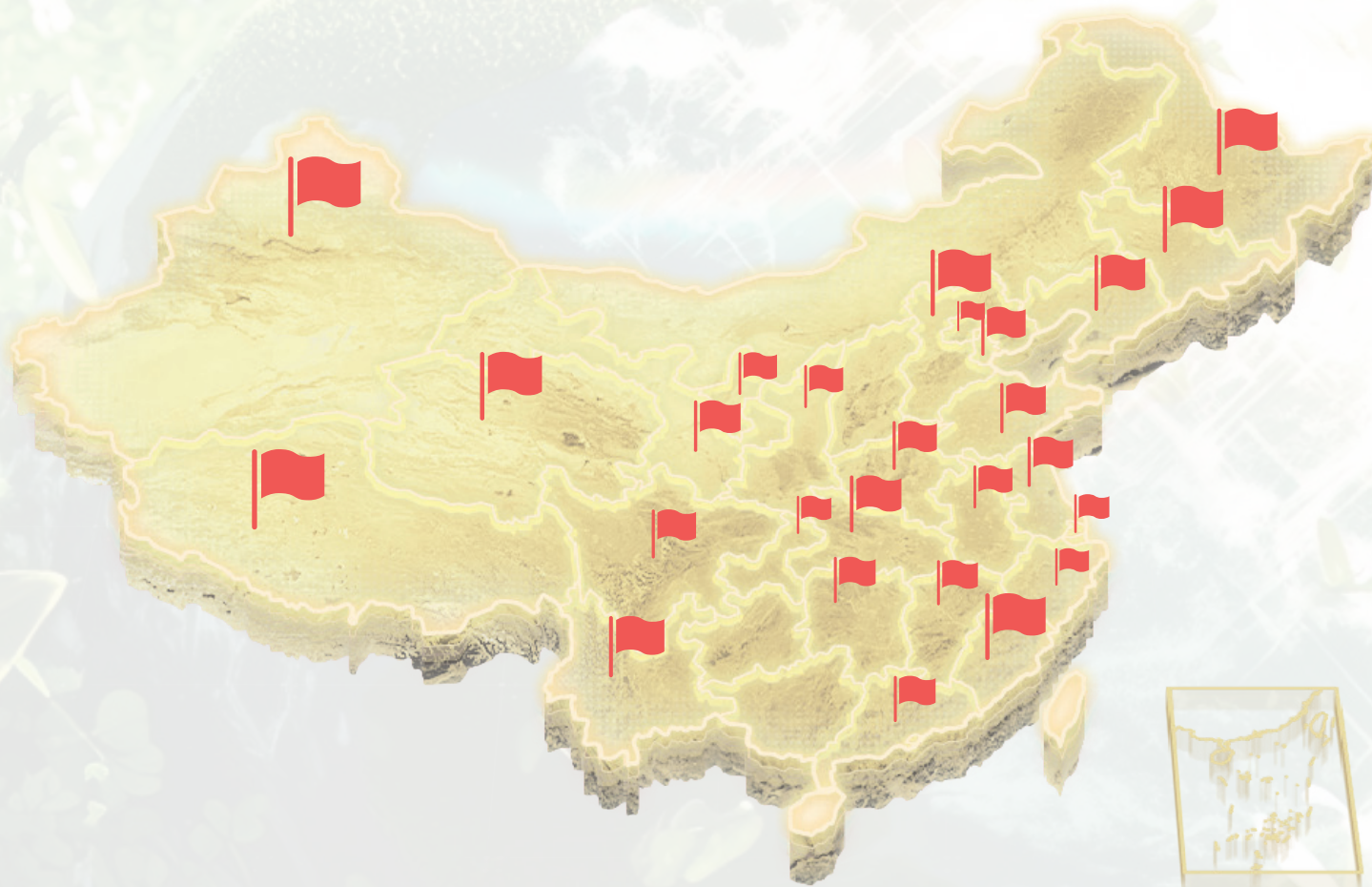
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Airport (Beijing Capital Airport Project) - Beijing





# DOMESTIC MARKET



Huade electric products are deployed in key projects across more than 30 provinces in China, serving power grids, large-scale wind power, photovoltaics, thermal power, rail transit, petrochemical industries, metallurgy, and other critical sectors, achieving application in all regions and under all operating conditions. The products can adapt to harsh environments such as extreme cold, high temperature, humidity, high altitude, and salt spray.



# STRATEGIC CLIENTS



国家电网  
STATE GRID



中国南方电网  
CHINA SOUTHERN POWER GRID



中国华能  
CHINA HUANENG



中国华电  
CHD



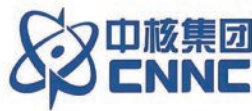
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CHN ENERGY



大唐集团公司  
CHINA DATANG



国家电投  
SPIC



中核集团  
CNNC



中国三峡  
China Three Gorges Corporation



中广核  
CGN



中国石油



中国石化  
SINOPEC



GOLDWIND  
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WE ARE A HIGH-QUALITY SUPPLIER TO THE STATE GRID

# GLOBAL MARKETING

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Dedicated to providing green switchgear solutions  
30 years experience of electrical equipment







HUADE ELECTRIC



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