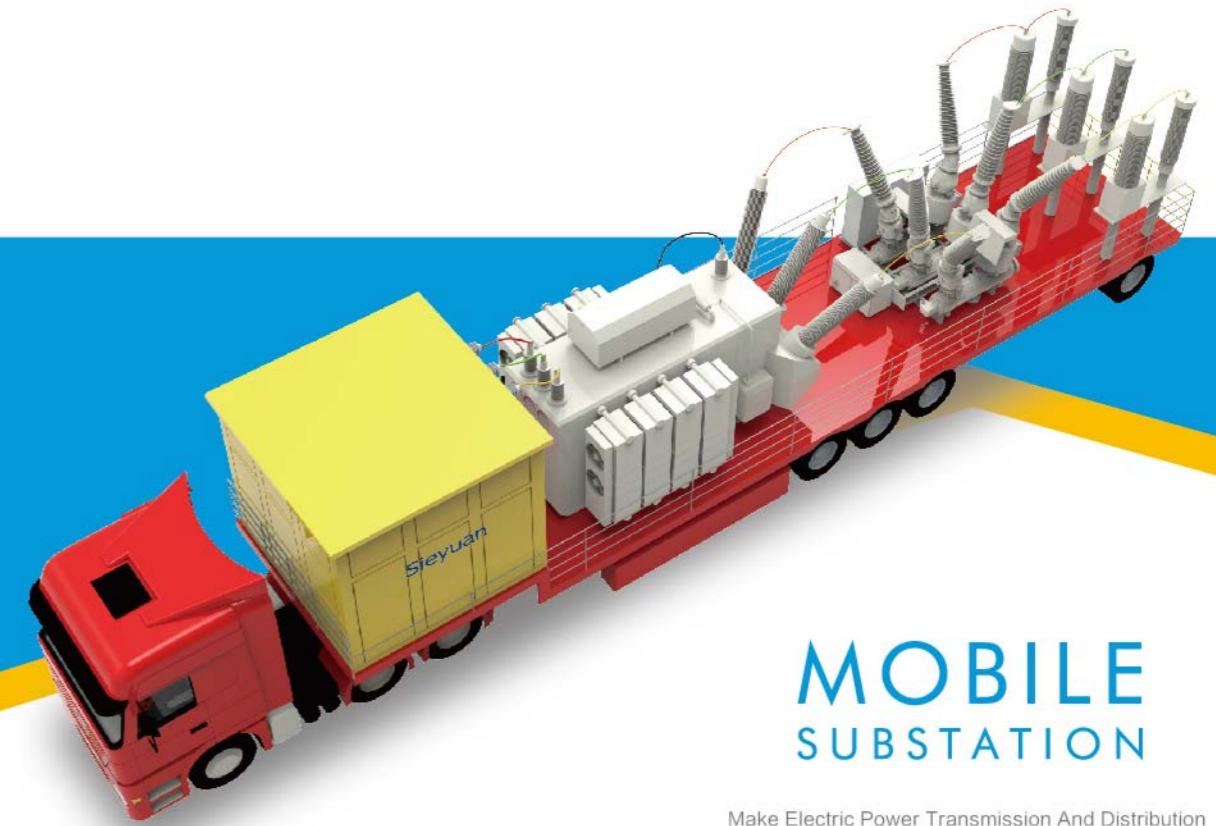


Sieyuan



MOBILE SUBSTATION

Make Electric Power Transmission And Distribution
Safer, More Controllable And More Efficient

Sieyuan

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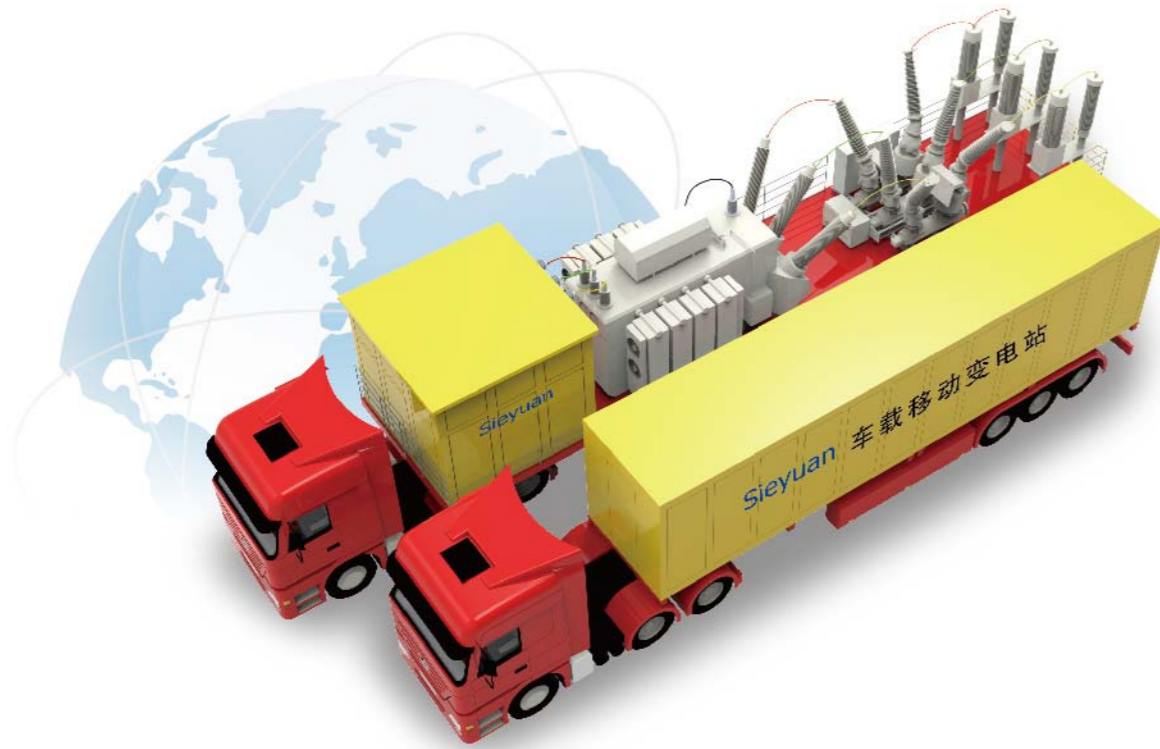


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SIEYUAN ELECTRIC CO.,LTD.

MOBILE SUBSTATION OVERVIEW

- small Compact structure and small volume
- fast No need for construction approval, in-plant commissioning, quick on-site installation
- flexible Flexible
- save Small area, Save construction time



Mobile substation is mainly composed of 5 modules, including HGIS module, main transformer module, substation box-type integrated automation room module, medium-voltage distribution module and equipment transportation module.

The concept of "mobile" means embodied in the form of semi-trailer (which can be installed on the mobile skid mounted platform). The overall design is compact and highly mobile. Semi-trailer is usually in the state of mobile waiting for operation.

All equipment in the factory assembly, commissioning, substation construction factory to achieve the prefabrication, on-site installation only car body positioning, cable connection between the car body, cable connection, protection fixed value verification, and other commissioning work, greatly shorten the entire substation from installation to operation time.

Mobile substation is an important part of incident emergency power system. When a major natural disaster, launched the emergency rescue preplan, first priority is to ensure power supply, due to the mobile substation is faster than the conventional power station construction, the natural disasters, such as emergency equipment accident emergency can quickly replace a conventional substation to restore power, It can also cope with the shortage of regional power supply capacity.

When a major natural disaster occurs When emergency power supply is needed

When suffering from natural disasters such as snow and rain, typhoons, earthquakes, floods and mudslides, mobile substations can quickly replace conventional substations to restore power supply



Emergency rescue for power equipment failure breakdown

In case of sudden power equipment accident, there is no need for whole-process power failure operation. Mobile substation can quickly replace the equipment or the accident interval and improve the reliability of power supply



Substation refurbishment and upgrade

Mobile transformer is suitable for the transition construction of all kinds of live power transformation in substations, to ensure uninterrupted power supply operation, to buy time for maintenance and adjustment of the original equipment, and to provide a good on-site solution for the upgrade and transformation of the power grid



Field temporary power supply

Mobile substations can provide temporary power supply for large field projects and avoid the risks brought by large investment in the construction of above-ground substations



Temporary power supply and unplanned emergency power supply demand during high load season

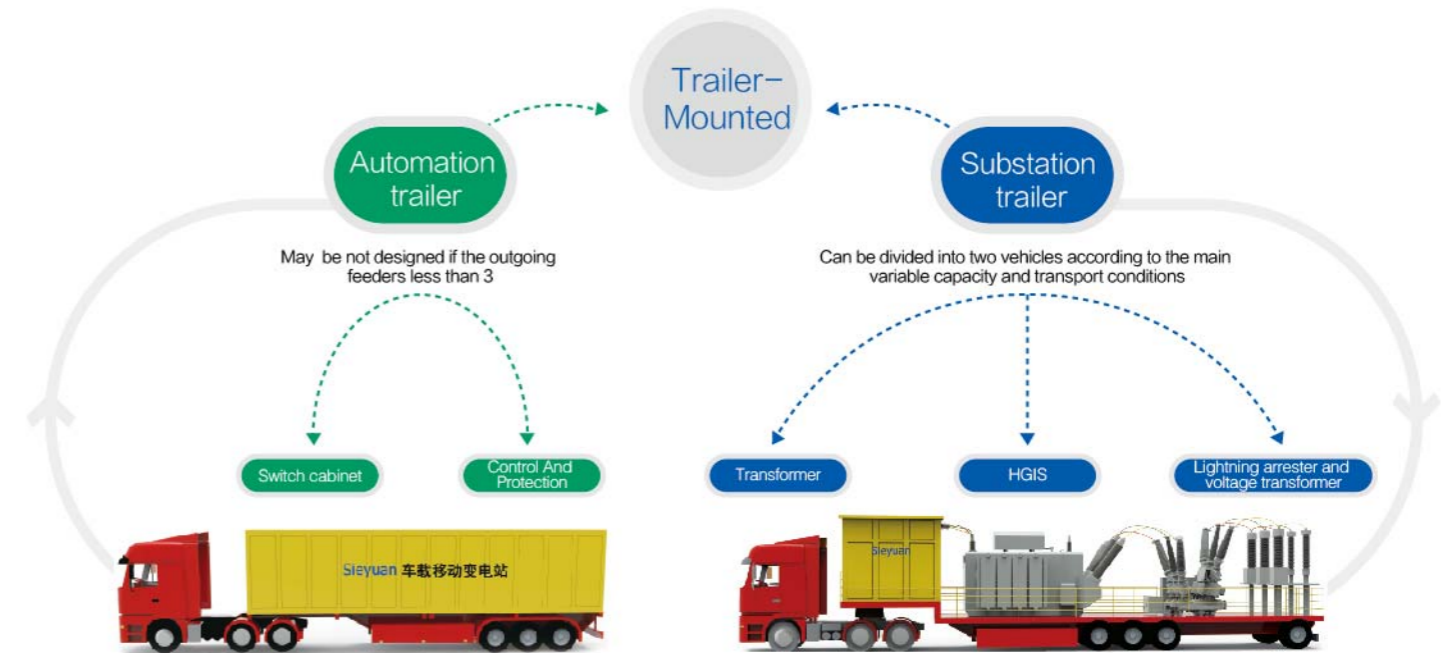
Mobile substations can be put into operation in high load seasons to temporarily solve the problem of regional power shortage



The planning, examination and approval, land acquisition, tendering, construction and other cycles of above-ground stations are long and the investment is large. In areas where the demand for power grows rapidly and exceeds the pre-planned power construction, mobile substations can be put into operation as temporary substations to alleviate the situation of power supply tension



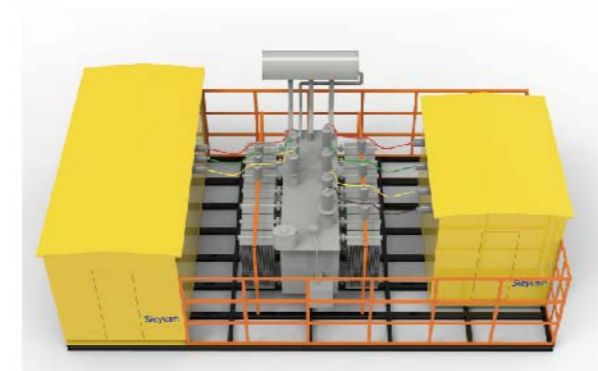
TYPICAL CONFIGURATION TRAILER-MOUNTED



Sieyuan electric co, Ltd is committed to providing first-class electrical equipment and services to customers all over the world, helping customers use and maintain power safely, reliably and efficiently. The product line covers the professional fields of primary and secondary equipment of power transmission and distribution. The company's leading products and core technologies are at the advanced level in the world, and it also provides the general contracting service of power transmission and transformation engineering. Sieyuan electric co, Ltd mobile substation solution integrates the company's own transformer, HGIS, control and protection products, gives full play to the advantages of equipment manufacturers research and development, in view of the characteristics of small, fast, smart mobile substation, independently developed complete functions, high reliability of supporting products to meet customer requirements to the maximum. Sieyuan electric co, Ltd has strong EPC design and project execution ability, and can provide complete turnkey engineering solutions.

Sieyuan electric's mobile substation portfolio is flexible, can be customized according to customer needs, suitable for a variety of temporary power supply scenarios, according to the combination type can be divided into vehicle-mounted (110kV mobile substation usually adopts this kind of scheme) and skid-mounted (35kV usually adopts this scheme) two. Vehicle-mounted mobile substation is usually composed of tram and distribution vehicle. The main transformer module and HGIS module are installed on the substation. The transformer module and HGIS module on the distribution vehicle can be separately transported according to the traffic conditions or used according to the application scenarios. The skid-mounted mobile substation can realize the baseless station construction mode. The complete set of equipment is prefabricated in the factory. There is no need for civil construction on the site. Mobile substation will be convenient and flexible for the perfect interpretation.

Sieyuan electric's mobile substation solution, covers voltage range from 33kV~245kV , the main transformer capacity up to 150MVA, according to the need and requirement of the project, provide trailer-mounted or skid-mounted .



TYPICAL CONFIGURATION SKID-MOUNTED

Provide first-class electrical equipments and services to global customers, and help them use and maintain the electric power safely, reliably and efficiently.

SIEYUAN SOLUTION FEATURES

Small size

Transformer through optimizing the heat dissipation device layout scheme, improve the heat dissipation efficiency, make the structure of the whole machine more compact.

The octagonal structure design of oil storage tank can reduce the height of transformer and facilitate transportation.

The integrated HGIS combination electric appliance developed by Shanghai Sieyuan High Voltage Switchgear Co., Ltd is enabled to reduce the length of the vehicle.

Light weight

Provide lighter quality transformer, special can provide aluminum tank transformer, greatly reduce the overall weight.

The voltage transformer of Jiangsu Sieyuan Hertz Instrument Transformer Co., Ltd can be integrated into the transformer station, which can reduce the space and weight of the equipment.

Large capacity and low noise

Changzhou Sieyuan Toshiba Transformer Co.Ltd.owned by Sieyuan, has rich experience in design and supply of large-capacity and low-noise mobile transformers, providing complete and perfect solutions of 150MVA and below capacity mobile transformers.Optimize transformer core design and improve assembly process.

Complete control protection solution

Shanghai Sieyuan Hongrui Automation co.LTD., owend by Sieyuan, has the r&d and production capacity of substation monitoring system and control protection device. It is the mainstream qualified supplier of China State Grid secondary products and can provide complete control and protection solutions for mobile substations.

Safe and reliable

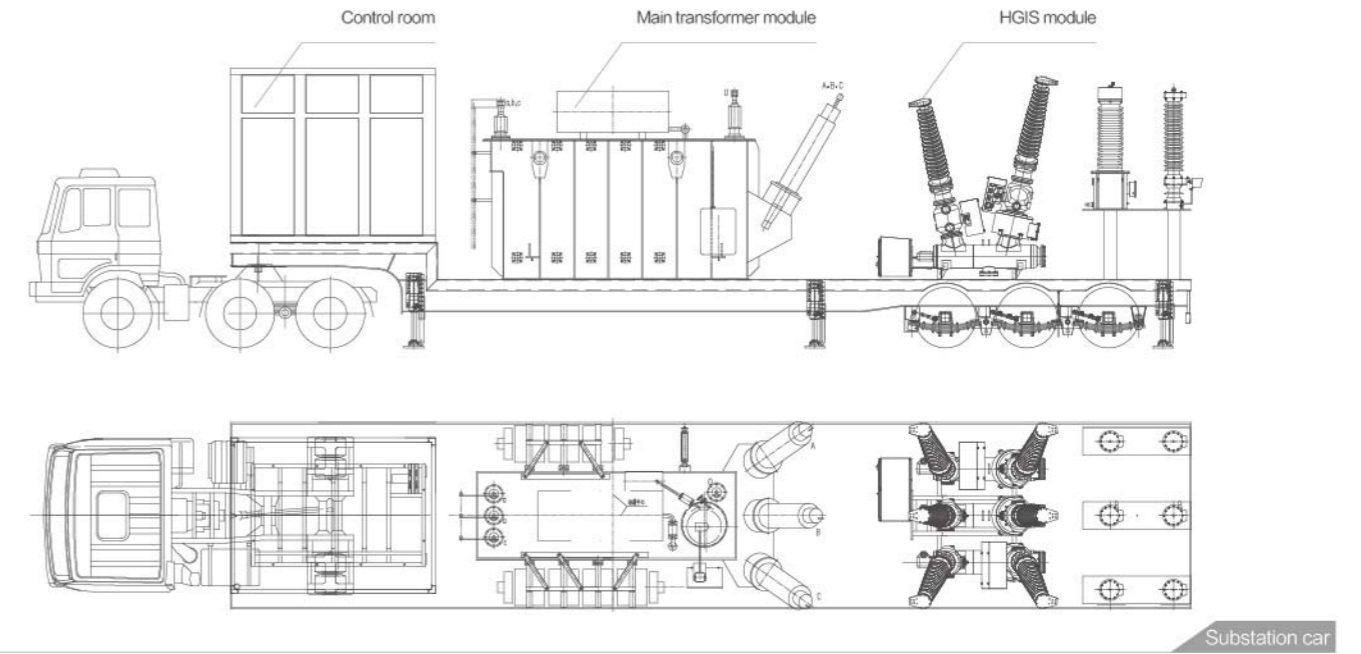
After detailed design and full verification, it can ensure that in the extreme case of 5g transportation collision acceleration, there is no displacement or deformation between the equipment and the vehicle plate on the spot, and it can be dismantled and assembled for many times.

Seismic

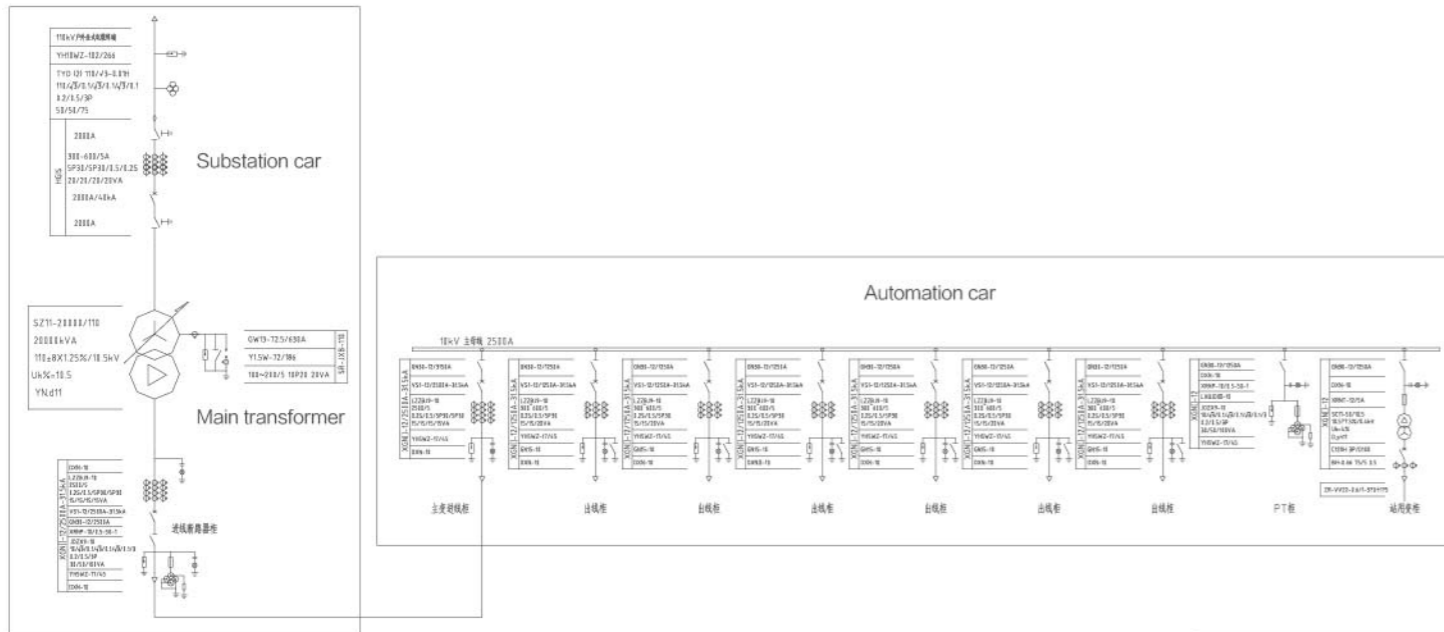
Trailer design with hydraulic shock absorber.Lower the center of gravity of the equipment, install seismic pads, and add effective support for external accessories.HGIS. The whole system has been fully calculated and designed for earthquake resistance.



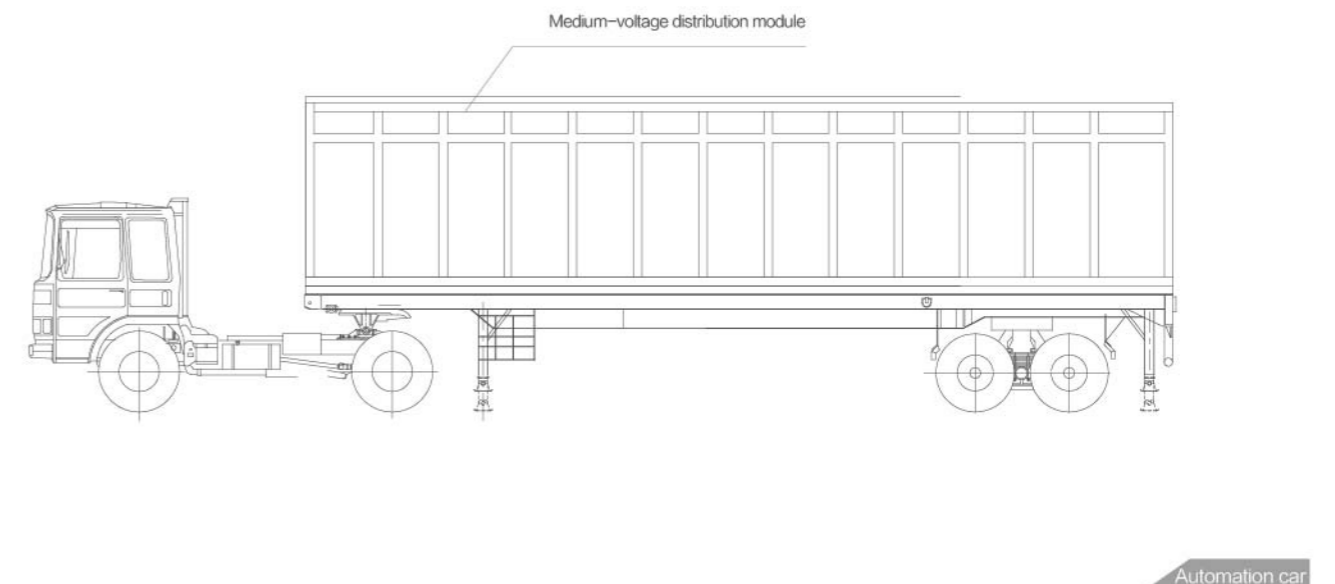
TYPICAL LAYOUT SECTION DIAGRAM



TYPICAL SINGLE LINE DIAGRAM



TYPICAL SECTION DIAGRAM



Electrical single-line diagram

Automation car

TYPICAL APPLICATION OF MOBILE SUBSTATION



China State Grid-Fujian mobile substation project



China Southern Power Grid-mobile substation project



Ethiopia mobile substation project

THE MAIN TECHNICAL PARAMETERS

Configuratio	Trailer- mounted / Skid- mounted				
Applicable standards	IEC/ANSI				
Rated frequency	50Hz/60Hz				
Seismic withstand capability	up to 0.5g or on request				
Ambient temperature range	-25 up to +55 ° C				
HV section					
Rated voltage	33kV	72.5 kV	132kV	170kV	245 kV
Test voltage	118 kV x 60 s	140V x 60 s	230 kV x 60 s	325 kV x 60 s	460 kV x 60 s
BIL	215 kV	325kV	550 kV	750 kV	1050 kV
Rated current	up to 2000A				
Rated breaking capacity	up to 40 kA				
MV section					
Rated voltage	7.2 kV	12 kV	24 kV	33kV	
Test voltage	20 kV	28 kV x 60 s	50 kV x 60 s	118 kV x 60 s	
BIL	60k V	75 kV	125 kV	215 kV	
Rated current	up to 2500A				
Rated breaking capacity	up to 31.5 kA				
Power transformer					
Rated power	up to 150MVA(40 1-phase)				
Cooling	ONAN/ONAF				
Windings	2 / 3 windings HV / HV / MV				
Voltage regulation	OLTC / NLTC				
HGIS module					
Combination electric appliance	HGIS				
Surge arresters	Integrated circuit breaker, disconnecting switch, CT, etc				
Voltage transformer	ZNO surge arrester for cable / transformer protection				
	Open/integrated with HGIS				
Distribution module					
Switch cabinet	Fixed tank/gas tank/hand truck tank				
Other submodules					
Control and protection IEDs / systems	IEC 61850 Relion based systems				
Auxiliaries	All auxiliary systems designed and rated according to the specific application requirements and customer needs.				
AC/DC distribution panels					
Auxiliary transformers					
Air-conditioning system					



SERVICE AND SUPPORT

Sieyuan electric co.Ltd provide with pre-sales technical consulting, engineering design, equipment supply, commissioning and installation and after-sales services, to provide a complete, fast, economical and reliable solution



Pre-sales technical solution

The company provides detailed and reliable technical solutions for each customer.
 Patiently answer customers' questions and requirements.
 Communicate, calculate and demonstrate with design institute for major projects.



Technical proposal for sale

Provide product drawing, installation design and other technical support according to customer's specific technical requirements.
 The company has established ERP management system, contract signing, procurement, production, delivery and so on.
 Monitor the whole process of the link to ensure quick and timely response to each customer.

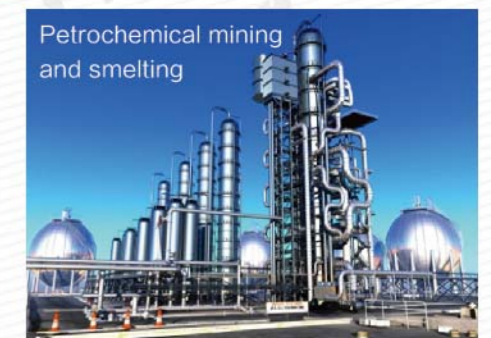
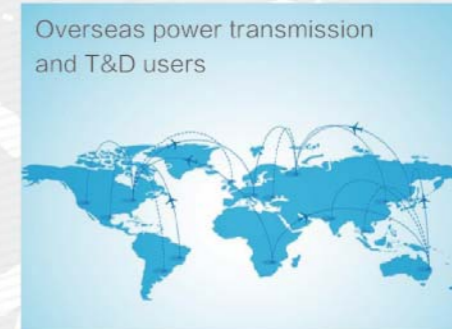


After-sales service

The company has set up customer service center and NOTES database platform to provide after-sales technical support.
 Provide product site installation guidance, testing and other services.
 Sort out the concept of customer first.



COMPREHENSIVE APPLICATION



TECHNOLOGICAL INNOVATION AND SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENTS

List of mobile substation patents

The name of the patent	Patent no.
Transformer mounting	CN2015 2 00445518
Insulation fixing mechanism of transformer body	CN2015 2 00480795
Direct connection mechanism between transformer and gas insulation system	CN2015 2 0048104X
New connection mechanism of transformer and gas insulation system	CN2015 2 00445683
Portable emergency transformer for easy transportation	CN2015 2 00481143
High efficiency heat dissipation type mobile emergency transformer	CN2015 2 00445486
Dual cooling circuit mobile transformer	CN2015 2 00463338
Insulation and fixing mechanism of new transformer body	CN2015 2 00445397
New transformer upper positioning assembly	CN2015 2 00481054
New high voltage heat dissipation mobile transformer	CN2015 2 00480738
Oil level meter switch locking mechanism of mobile transformer	CN2015 2 00480808
Mobile transformer switch support mechanism	CN2015 2 00481158
Used for aluminum alloy transformer fuel tank aluminum reinforcement	CN2015 2 00481139
Used for protecting plate at the stress concentration of aluminum alloy transformer oil tank	CN2015 2 00463323
Octagonal oil storage tank for mobile transformer	CN2015 2 00480719
Temperature control meter protective box for moving transformer	CN2015 2 00445734
A moisture absorber used for moving transformers	CN2015 2 00480704
Production method of aluminum transformer oil tank	The invention patent is under review
Double cooling loop moving transformer	The invention patent is under review
Portable emergency transformer for easy transportation	The invention patent is under review
Direct connection mechanism between transformer and gas insulation system	The invention patent is under review

