

Prefabricated Substation (European-style Prefabricated Substation)

1. Technical Features

The prefabricated substations (also known as packaged substations) are prefabricated complete sets of power distribution devices assembled according to certain wiring schemes, integrating high-voltage power distribution devices, transformers, and low-voltage power distribution devices. They are mainly used in the 40.5/0.4, 12/0.4KV or 40.5/12KV three-phase AC series, serving as integrated power transmission and transformation devices for transmitting, receiving, and distributing electrical energy.



The YB series prefabricated substations have the advantages of strong completeness, small floor space, beautiful appearance, short installation cycle, safe and reliable operation, etc. They have wide applicability, versatility, and interchangeability, and are the preferred products for urban power grid transformation. They are suitable for oil fields, construction sites, mining areas, ports, high-rise buildings, urban streetlights, residential communities, factories, enterprises and institutions, power plants, and the self-use power transformation devices within the power supply system.

2. Product Structure

The layout can be divided into three compartments, namely the high-voltage compartment, the transformer compartment, and the low-voltage compartment. Both the high-voltage and low-voltage compartments are fully functional.

The primary power supply system on the high-voltage side can be arranged in various power supply modes such as ring network power supply, terminal power supply, and dual-power supply. The high-voltage compartment is composed of an incoming line cabinet, (metering cabinet), ring network cabinet, outgoing line cabinet, and lighting system. Inside the cabinet, combined electrical appliances of load switches + fuses, or fuses, isolating switches + circuit breakers are used for breaking and protection.

The transformer compartment is composed of a fully sealed transformer or a dry-type transformer, a ventilation and cooling system, and a lighting system. The ventilation and cooling can be natural air cooling or forced air cooling, and the lighting system can be manually controlled or automatically controlled.

The low-voltage compartment is composed of an incoming line cabinet, a metering cabinet, a compensation cabinet, an outgoing line cabinet, and a lighting system. According to the user's requirements, the low-voltage compartment can adopt a panel or cabinet-mounted structure to form the power supply scheme required by

the user. It has multiple functions such as power distribution, lighting distribution, reactive power compensation, electrical energy metering, and electrical energy measurement, meeting different requirements of users, and facilitating the user's power supply management and improving the power supply quality.

3. Main performance parameters

No.	项 目	单 位	参 数		
高压单元	额定频率	HZ	50或60		
	额定电压	kV	6	10	35
	最高工作电压	kV	6.9	11.5	40.5
	工频耐受电压 对地和相间/隔离断口	kV	32/36	42/48	95/118
	雷电冲击耐压 对地和相间/隔离断口	kV	60/70	75/85	185/215
	额定电流	A	315、400、630		
	额定短时耐受电流	kA	12.5(2s)、16(2s)、20(2s)		
	额定峰值耐受电流	kA	31.5、40、50		
No.	项 目	单 位	参 数		
低压单元	额定电压	V	380、220		
	主回路额定电流	A	100~3200		
	额定短时耐受电流	kA	15、30、50		
	额定峰值耐受电流	kA	30、63、110		
	支路电流	A	10~800		
	分支回路数	路	1~6		
	补偿容量	Kvar	0~360按变压器容量的15%~20%补偿		

Advanced Production Equipment

GNEE Steel Group owns a full set of shearing, packaging, vacuum casting, vacuum impregnation, and testing stations that represent the high level of the industry. These top-notch production and testing equipment guarantee the creation of first-class products. The company continuously improves its design methods, achieving the most advanced computer-aided design to meticulously craft perfect products.



Production Environment

The workshop of GNEE Steel Group has strict process management and a closed management system. Regular purification and dust removal tests are conducted to meet the necessary requirements for producing high and low voltage transmission products. It has also passed ISO9001 quality certification and third-party inspection certification for international bidding.



Autonomous Raw Material Supply

The iron cores and electromagnetic wires used in our company's products are all produced independently, which allows better control over the quality and delivery time of raw materials while reducing product costs.



Raw Material Production Environment



INTIMATE COMMUNICATION

Pre-sale, during-sale, and after-sale, we are with you every step of the way.

As long as you get in touch with us, we will communicate with you sincerely. Pre-sale, we will provide you with relevant product information; if you have special requirements, we can develop according to your needs and propose solutions under mutual recognition; during-sale, we will keep in touch with you throughout the process and inform you of the production progress, strictly following all the requirements in the contract; after-sale, our comprehensive "three guarantees" service system will ensure that you use our products with comfort, confidence, and satisfaction.

Inspection, Training, Guidance - All Free Of Charge.

As long as you are interested in our products and get in touch with us, we will take the initiative to contact you and arrange free inspections and factory experiences. We can also dispatch technical personnel to provide you with a free customized overall solution. Before the implementation of the solution, we will offer free training for your technical staff to inform them of the relevant knowledge about installation, commissioning, and maintenance of the product. During the equipment installation process, we will also provide you with free installation guidance. As long as it is your requirement, it is our mission; we will provide you with perfect services throughout the entire process.

Power Supply System Solutions Equipment Provider

Real Estate Development

In real estate development, container substations are widely used. In addition to short construction periods, low investment, small land occupation, and a new and beautiful appearance, the greatest advantage of this transformer is that it is installed in a moisture-proof, anti-corrosion, dust-proof, fire-proof, theft-proof, heat-insulating, fully enclosed, and mobile steel structure box. It integrates electromechanical equipment and runs fully enclosed, ensuring safety and long-term usability.



Industrial Enterprises

The fully sealed oil-immersed power transformer has the advantages of low loss, low noise, and high efficiency, which can achieve good energy-saving effects and reduce pollution. Compared with ordinary oil-immersed transformers, fully sealed transformers eliminate the need for an oil reservoir, and the changes in oil volume are automatically compensated by the elasticity of the corrugated oil tank's corrugated plates. The transformer is isolated from the air, preventing and slowing down the aging of oil and insulation, enhancing operational reliability, and requiring no maintenance during normal operation. Epoxy resin cast dry-type transformers can be used as updated replacement products for oil-immersed distribution transformers and are the best-performing products among various two-type transformers. They are particularly suitable for urban grids, high-rise buildings, business centers, theaters, hospitals, hotels, tunnels, subways, underground stations, laboratories, stations, docks, airports, combined substations, and other important places.



Oil Fields and Mines

High-efficiency energy-saving adjustable capacity transformers are designed based on the working characteristics of oil field pumping units. When the pumping unit starts, the transformer's output voltage is the rated input voltage of the motor, ensuring that the pumping unit has sufficient starting torque. After the pumping unit starts and enters the normal state, the control system will detect the size of the effective power consumed by the motor through sensors and feed it back to the microcomputer intelligent control system. Through calculations, it automatically adjusts the output voltage and capacity of the transformer, then detects, records, and compares the effective power consumed by the motor on the pumping unit, eventually finding the operating point where the consumption of effective power is minimal, achieving the purpose of energy saving. In terms of structural design, strong anti-theft measures have been taken, effectively preventing the theft of high-efficiency energy-saving transformers. At the same time, during the

energy-saving operation of the pumping unit, according to the set anti-electricity theft time method, the output voltage fluctuates, making it impossible for home appliances to function even if the electricity is stolen back. Therefore, the transformer has high-performance anti-theft functions.

