110KV Three-phase Oil-immersed Power Transformer

1. Product overview

The 110KV three-phase oil-immersed power transformer is manufactured in accordance with the International Electrotechnical Commission standard IEC60076 and the national standard GB1094 of the People's Republic of China. This series of products features excellent impact resistance, high mechanical strength, strong short-circuit resistance, low partial discharge, low noise, low losses, good sealing performance, and minimal maintenance requirements. It can be used as the main transformer in power plants in substations, and for power transmission and transformation in urban and rural power grids.

2. Product structure

(1) High-quality cold-rolled grain-oriented silicon steel sheets are selected for the iron core, which adopts a fully inclined and hole-free structure. Low-magnetic steel plates are used as pull plates to firmly connect the upper and lower clamping pieces with the iron core into a rigid structure, thus achieving a relatively small no-load loss and a lower noise level.

(2) According to the capacity of the transformer, the windings adopt structures such as cylindrical, spiral, and continuous types. For windings of the voltage class of 110KV and above, structures such as the interlaced type or the inner shielding type are used, which effectively improves the distribution of the impulse voltage. Transposition wires or composite wires are used for the conductors to reduce the additional losses of the windings. Computer simulation is used to calculate the electric field and the impulse characteristics of the windings, ensuring the excellent electrical characteristics and impulse strength of the windings. In the manufacturing process, effective measures are taken to ensure its safe and reliable operation.

(3) The pressing structure of the transformer core uses a whole-circle insulating pressing plate. The assembly process adopts the overall assembly of the windings, which improves the reliability of the product.

(4) The oil tank adopts a flat-top bell-jar structure. Folded-plate type reinforcing irons are welded on the tank wall to improve the mechanical strength of the oil tank. In order to reduce the stray losses of the transformer, large transformers are equipped with magnetic shields on the inner wall of the oil tank.

(5) To prevent the displacement of the transformer core during transportation, a positioning device is installed in the oil tank for the core. A sealed oil conservator is adopted to isolate the transformer oil from the atmosphere, avoiding the oil

from getting damp and aging. A pointer-type oil level gauge is installed at the end. According to the weight of the transformer oil, a pressure relief valve is installed on the top of the oil tank to ensure the safe operation of the product.

3. Product features

(1) More energy-efficient
(2) Lower noise level
(3) More environmentally friendly
(4) High-quality cold-rolled grain-oriented silicon steel sheets are used for the iron core, thus achieving a relatively small no-load loss and a lower noise level.

4. Main performance parameters

型号	额定容量 (kVA)	额定电压		联结组标号	损耗(KW)		空载电流%	短路阻抗%	重量(kg)			外形尺寸(mm)			轨距 (mm)
		高压 (kV)	低压 (kV)		空载	负载			器身重	油重	总重	长	宽	高	
SFZ11-6300/110	6300	110 ±8× 1.25%	6.3 6.6 10.5 11	YNd11	8	34.2	0.80	10.5	9600	6600	21300	4560	4350	4580	1435×1435
SFZ11-8000/110	8000				9.6	42.8	0.80		11800	7230	24600	5700	3400	4690	1435x1435
SFZ11-10000/110	10000				11.4	50.4	0.74		13900	7700	27800	5100	3735	4830	1435x1435
SFZ11-12500/110	12500				13.4	59.9	0.74		16200	7810	28500	5700	3810	4900	1435x1435
SFZ11-16000/110	16000				16.2	73.2	0.69		19300	9300	35600	4780	4165	5060	2000x1435
SFZ11-20000/110	20000				19.2	88.4	0.69		22800	10000	39800	5100	4530	4820	2000x1435
SFZ11-25000/110	25000				22.7	104.5	0.64		26600	11100	45200	6190	4740	5010	2000x1435
SFZ11-31500/110	31500				27	126.4	0.64		28600	12500	49600	6565	4470	5365	2000x1435
SFZ11-40000/110	40000				32.3	148.2	0.58		31275	14200	57100	6790	4860	5210	2000x1435
SFZ11-50000110	50000				38.2	184.3	0.58		38590	17800	67800	6450	5050	5590	2000x1435
SFZ11-63000/110	63000				45.4	222.3	0.52		42200	15600	71600	6970	5170	5700	2000x1435

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.

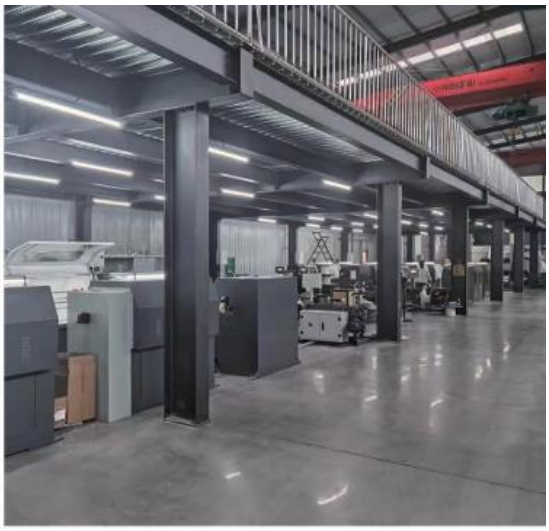
Production Environment

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.