

## **S13/S20/S22**

10KV、20KV

Oil-immersed transformer



### **Overview**

S13/S20/S22 series fully sealed oil-immersed transformers are suitable for power systems with AC 50Hz and rated working voltage of 20kV and below, as the power distribution of petroleum, metallurgy, chemical, textile, light industry and other enterprises and places with heavy dust transformer.

# S13/S20/S22

10KV、20KV Oil-immersed transformer



## Model meaning

S	□	-	M	□	/	□
↓	↓		↓	↓		↓
Three phase	Design sequence number		Complete seal	Capacity (kVA)		High pressure side Voltage level

## Transformer product standard

GB1094.1-1996 GB 1094.2-1996 JB/T10088-2004

GB1094.3-2003 GB 1094.5-2003 GB/T10237-1988

GB/T6451-1999 GB/T 7595-1987 JB/T3837-1998

## Conditions of use

- Ambient temperature: Maximum +40°C , Minimum -25°C (outdoor type) / -5°C (indoor type).
- Altitude: Installation site altitude should not exceed 1000 meters.
- Relative humidity: Daily average ≤ 95%, Monthly average ≤ 90%.
- Seismic intensity: Not exceeding 8 degrees.
- Installation environment: No fire, explosion hazards, severe pollution, chemical corrosion, or intense vibrations.
- Cooling method: ONAN (Oil Natural Air Natural) or ONAF (Oil Natural Air Forced).
- Frequency: Rated frequency 50Hz or 60Hz.
- Rated voltage: Should match the system voltage level, typically 6kV, 10kV, 20kV, 35kV, etc.

## Characteristics Of The Product

- Core:Core is made of high permeability grain oriented cold-rolled silicon steel. The core of the new core, miter joints convolution type iron core, its legs of circular cross section multi-step, the yoke and the core of constant section.
- Winding:Windings corrugated oil passage, not dipping process, tightening belt lashing; concentric coil windings are: high voltage winding has a corresponding tap tap voltage requirements, lead to a tap on the switch, the switch is mounted on the cover, and the need to cut After the power supply before converting voltage tap.
- Security devices:30~2000kVA transformer equipped with a pressure release valve; Can be installed with alarm and trip relays gas terminals according to user needs;
- Oil temperature measurement device:Headers transformers are equipped with a glass thermometer, tube socket located on the top of the tank, inserted into the oil 120±10mm; 1000~2000kVA transformer type equipped with outdoor thermometer signal;
- Transformer tank: The transformer tank is made up of corrugated walls. The surface is dust-sprayed and the paint film is firm. The corrugated fins not only have a cooling function, but also have a "breathing" function. The elasticity of the corrugated fins can compensate for the change in the volume of the transformer oil caused by the temperature rise and fall. Therefore, the fully sealed transformer has no oil storage cabinet, which reduces the overall height of the transformer;
- The transformer is vacuum-filled during packaging, completely removing the moisture in the transformer, and the transformer oil is not in contact with the air. Effectively prevent oxygen and moisture from intruding into the transformer, resulting in a decrease in the insulation performance of the transformer and the possibility of aging of the transformer oil, so the oil sample test is performed irregularly;

# S13/S20/S22

10KV、20KV Oil-immersed transformer

## S13-M type 6~10kV oil-immersed distribution transformer

Rated capacity (kVA)	Voltage combination and tap range			Vector group symbol	No-load loss(W)	Load loss (W)	No-load current (%)	Short circuit impedance (%)
	High pressure (kV)	High pressure tap range (%)	Low pressure (kV)					
30				Dyn11 Yzn11 Yyn0	80	630/600	1.8	4
50					100	910/870	1.6	4
63					110	1090/1040	1.6	4
80					130	1310/1250	1.5	4
100					150	1580/1500	1.4	4
125					170	1890/1800	1.4	4
160	6				200	2310/2200	1.3	4
200	6.3				240	2730/2600	1.2	4
250	6.6	±5	0.4		290	3200/3050	1.2	4
315	10	±2×2.5%			340	3830/3650	1.1	4
400	10.5				410	4520/4300	1.1	4
500	11				480	5410/5150	1.0	4
630					570	6200	0.9	4.5
800					700	7500	0.8	4.5
1000				Dyn11 Yyn0	830	10300	0.8	4.5
1250					970	12000	0.7	4.5
1600					1170	14500	0.6	4.5

## S13-M type 20kV oil-immersed distribution transformer

Rated capacity (kVA)	Voltage combination and tap range			Vector group symbol	No-load loss(W)	Load loss (W)	No-load current (%)	Short circuit impedance (%)
	High pressure (kV)	High pressure tap range (%)	Low pressure (kV)					
50				Dyn11 Yyn0	170	1270/1210	2.00	6.5
100					230	2120/2020	1.80	6.5
125					270	2500/2380	1.70	6.5
160					290	2970/2830	1.60	6.5
200					340	3500/3330	1.50	6.5
250					410	4160/3960	1.40	6.5
315	20	±5	0.4		490	5010/4770	1.40	6.5
400	22	±2×2.5%			580	6050/5760	1.30	6.5
500	24				690	7280/6930	1.20	6.5
630					830	8280	1.10	6.5
800					980	9900	1.00	6.5
1000					1150	12150	1.00	6.5
1250					1410	14670	0.90	6.5
1600					1700	17550	0.80	6.5

Note: 1. The load loss above the slash line in the table applies to the Dyn11 connection group, and the load loss value below the slash line applies to the Yyn0 connection group.  
2. other capacity of the product performance parameters, determined by the user and the manufacturer.

# S13/S20/S22

10KV、20KV Oil-immersed transformer



## S20M oil becomes level 2 energy efficient

Rated capacity (kVA)	No-load loss (W)	Load loss (W)	No-load current (%)	Dimensions (mm)
30	70	505	1.5%	770*415*860
50	90	730	1.3%	820*565*910
80	115	1050	1.2%	860*600*950
100	135	1265	1.1%	880*630*970
125	150	1510	1.1%	890*670*1030
160	180	1850	1%	920*690*1050
200	215	2185	1%	940*685*1070
250	260	2560	0.9%	965*710*1100
315	305	3065	0.9%	1165*725*1140
400	370	3615	0.8%	1195*745*1170
500	430	4330	0.8%	1195*750*1220
630	510	4960	0.6%	1285*830*1250
800	630	6000	0.6%	1390*915*1280
1000	745	8240	0.6%	1600*1130*1290
1250	870	9600	0.5%	1625*1125*1350
1600	1050	11600	0.5%	1700*1175*1430
2000	1225	14640	0.4%	1860*1325*1470
2500	1440	14840	0.4%	1860*1235*1630

## S22M oil to Level 1 energy efficiency

Rated capacity (kVA)	No-load loss (W)	Load loss (W)	No-load current (%)	Dimensions (mm)
30	65	455	1.5%	815*430*860
50	80	655	1.3%	860*460*930
80	105	945	1.2%	910*625*970
100	120	1140	1.1%	940*645*1010
125	135	1360	1.1%	950*660*1080
160	160	1665	1.0%	965*680*1110
200	190	1970	1.0%	995*695*1130
250	230	2300	0.9%	1015*715*1150
315	270	2760	0.9%	1185*725*1180
400	330	3250	0.8%	1250*785*1210
500	385	3900	0.8%	1270*810*1280
630	460	4460	0.6%	1325*855*1310
800	560	5400	0.6%	1355*870*1330
1000	665	7415	0.6%	1460*970*1350
1250	780	8640	0.5%	1535*1005*1390
1600	940	10440	0.5%	1610*1060*1500
2000	1085	13180	0.4%	1740*1165*1550
2500	1280	13360	0.4%	1830*1155*1730