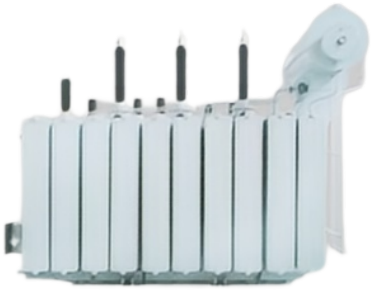

110KV INTELLIGENT THREE-PHASE ON-LOAD VOLTAGE REGULATOR ELECTRIC TRANSFORMER

Overview

110kV three-phase oil-immersed on-load voltage regulation power transformer has adopted a series of major reforms in material, process and structure. It has the characteristics of small size, light weight, high efficiency, low loss, low noise and reliable operation, which can reduce a lot of power grid losses and operating costs, and has significant economic benefits. It is suitable for power plants, substations, large factories and mining enterprises.

This product conforms to the national standards: IEC70076.11 "Power transformer Part 1 General provisions", IEC70076.11 "Power transformer Part 2 temperature rise", GB/T 6451-2023"Power transformer Part 3 insulation level, insulation test and external insulation air gap"

IEC70076.11 "Power transformer Part 5 ability to withstand short circuit", "three-phase oil-immersed power transformer technical parameters and requirements".

Model and meaning

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- Protection code (generally unmark, TH- wet heat, TA- dry heat)
- High voltage winding rated voltage class (kV)
- Rated capacity(kVA)
- Design serial number (18、20、22)
- Voltage regulation mode (no excitation)
- Wire mode (copper wire not marked, L-aluminum wire)
- Number of windings (double unmarked, S-triple, F-double split)
- Circulation mode (natural circulation non-standard, P-forced circulation)
- Cooling method (J- Self cooling not marked, F- oil immersed air cooling, S- water cooling)
- Phase (D- single, S-Three phase)

110KV INTELLIGENT THREE-PHASE NO-LOAD VOLTAGE REGULATION POWER TRANSFORMER

Enabling

1, device type: outdoor type

2. Ambient temperature: maximum temperature +40°C, minimum temperature -30°C

3, altitude: ⩽1000 meters (>1000 meters, temperature rise needs to be corrected)

4, relative temperature: ⩽90%(25°C)

5, installation site: no corrosive gas, no obvious dirt and other areas

Technical parameters

110kV three-phase double-winding unexcited voltage regulating power transformer

Rated capacity (kVA)	Voltage combination and tap range		Coupling group Label	No load loss kW(9)	Load loss kW(9)	No-load current %	Short circuit impedance %
	High voltage(kV)	Low voltage(kV)					
6300	110±2×2.5% 115±2×2.5% 121±2×2.5%	6.3 6.6 10.5	YNd11	5.90	33.0	0.50	10.5
8000				7.10	40.0	0. 50	
10000				8. 40	48.0	0. 46	
12500				9.90	56.0	0. 46	
16000				12.0	69.0	0.43	
20000				14.1	84.0	0.43	
25000				16.6	99.0	0. 40	
31500				19.7	117	0. 38	
40000				23.5	141	0. 36	
50000				28.2	166	0. 34	
63000				33.3	198	0. 30	
75000		13.8 15.75 18 21		37.8	224	0. 26	12~14
90000				43.5	258	0.24	
120000				54.2	320	0.22	
150000				64.1	379	0.19	
180000				72.0	434	0.16	

The no-load loss values in the above parameter table are the Chinese national standard type 18 parameter values. The company can customize them according to the actual needs of users.

Note 1, -5% tap position for maximum current tap.

Note 2, for the boost transformer, it is appropriate to use the tapless structure. If required by operation, tap can be set.

Note 3, when the transformer annual average load rate is between 45%-46%, the loss value in the table can be used to obtain the highest operating efficiency.

110KV INTELLIGENT THREE-PHASE NO-LOAD VOLTAGE REGULATING POWER TRANSFORMER

6300kVA-63000kVA three-phase three-winding unexcited voltage regulating power transformer

Rated capacity (kVA)	Voltage combination and tap range			Coupling group Label	No load loss kW(9)	Load loss kW(9)	No-load current %	Short circuit impedance %	
	High voltage(kV)	Medium voltage(kV)	Low voltage(kV)					Open voltage	Depressurize
6300	110±2×2.5% 115±2×2.5% 121±2×2.5%	35 37 38.5	6.3 6.6 10.5 21	Ynyn 0d11	7.10	42.0	0.53	High-medium 17.5~18.5 High - Low 10.5 Medium-Low 6.5	High-medium 10.5 High-Low 18 ~ 19 Medium-low 6.5
8000					8.50	50.0	0.50		
10000					10.1	59.0	0.47		
12500					11.8	70.0	0.45		
16000					14.3	86.0	0.42		
20000					16.9	101	0.42		
25000					19.7	120	0.38		
31500					23.5	142	0.38		
40000					27.8	170	0.35		
50000					33.3	202	0.35		
63000					39.4	243	0.32		

The no-load loss values in the above parameter table are the Chinese national standard type 18 parameter values. The company can customize them according to the actual needs of users.

6300KVA-63000KVA THREE-PHASE DOUBLE-WINDING ON-LOAD VOLTAGE REGULATION POWER TRANSFORMER

Rated capacity (kVA)	Voltage combination and tap range		Coupling group Label	No load loss kW(9)	Load loss kW(9)	No-load current %	Short circuit impedance %
	High voltage(kV)	Low voltage(kV)					
6300	110±8×1.25%	6.3 6.6 10.5 21	YNd11	6.40	33.0	0.51	10.5
8000				7.70	40.0	0.47	
10000				9.00	48.0	0.47	
12500				10.7	56.0	0.47	
16000				12.9	69.0	0.44	
20000				15.4	84.0	0.44	
25000				18.2	99.0	0.41	

The no-load loss values in the above parameter table are the Chinese national standard type 18 parameter values. The company can customize them according to the actual needs of users.

110KV INTELLIGENT THREE-PHASE ON-LOAD VOLTAGE REGULATION POWER TRANSFORMER

Rated capacity (kVA)	Voltage combination and tap range		Coupling group Label	No load loss kW(9)	Load loss kW(9)	No-load current %	Short circuit impedance %
	High voltage(kV)	Low voltage(kV)					
31500	110±8×1.25%	6.3	YNd11	21.6	117	0.41	10.5
40000		6.6		25.8	148	0.37	10.5~18
50000		10.5		30.6	184	0.37	
63000		21		36.3	220	0.34	

Note 1, load regulating transformer, temporarily provide buck structure products.
Note 2, according to user requirements, can provide other voltage combination products.
Note 3, -10% tap position is the maximum current tap.
Note 4, when the transformer annual average load rate is between 45%-50%, the loss value in the table can be used to obtain the highest operating efficiency.

110kV THREE-PHASE DOUBLE-WINDING UNEXCITED VOLTAGE REGULATING POWER TRANSFORMER

Rated capacity (kVA)	Voltage combination and tap range			Coupling group Label	No load loss kW(9)	Load loss kW(9)	No-load current %	Short circuit impedance %
	High voltage(kV)	Medium voltage(kV)	Low voltage(kV)					
6300	110±8×1.25%	36	6.3	YNyn0d11	7.70	42.0	0.61	High-medium 10.5 High-Low 18 ~ 19 Medium-low 6.5
8000					9.20	50.0	0.61	
10000					10.9	59.0	0.57	
12500					12.9	70.0	0.57	
16000			6.6		15.4	86.0	0.54	
20000		37	10.5		18.2	101	0. 54	
25000		38.5	21		21.6	120	0.50	
31500					25.7	142	0. 50	
40000					30.8	170	0.46	
50000					36.4	202	0.46	
63000					43.3	243	0.42	

The no-load loss values in the above parameter table are the Chinese national standard type 18 parameter values. The company can customize them according to the actual needs of users.

Note 1, load regulating transformer, temporarily provide buck structure products.
Note 2, high, medium and low voltage winding capacity allocation is (100/100/100)%.
Note 3. The connection group label can be YNd11y10 if required.
Note 4. The -10% tap position is the maximum current tap.
Note 5. According to user requirements, the medium voltage can be selected to be different from the voltage value in the table or set the tap.
Note 6, when the transformer annual average load rate is about 47%, the loss value in the table can be used to obtain the highest operating efficiency.

110KV GRADE INTELLIGENT THREE-PHASE ON-LOAD VOLTAGE REGULATION POWER TRANSFORMER

6300kVA-63000kVA three-phase double-winding low-voltage 35kV

Rated capacity (kVA)	Voltage combination and tap range		Coupling group Label	No load loss kW(9)	Load loss kW(9)	No-load current %	Short circuit impedance %
	High voltage(kV)	Low voltage(kV)					
6300				6.40	35.0	0.54	
8000				7.70	42.0	0.54	
10000				9.0	49.0	0.50	
12500				10.5	59.0	0.50	
16000	110±2×2.5%	36		12.5	72.0	0.46	
20000	115±2×2.5%	37	YNd11	14.8	89.0	0.46	10.5
25000	121±2×2.5%	38.5		17.5	105	0.42	
31500				20.7	126	0.42	
40000				24.6	147	0.39	
50000				29.5	183	0.39	
63000				34.9	220	0.36	

The no-load loss values in the above parameter table are the Chinese national standard type 18 parameter values. The company can customize them according to the actual needs of users.

current tap.

Note 2, for the boost transformer, it is appropriate to use the tapless structure. If required by operation, tap can be set.

Note 3, when the average annual load of the transformer is between 44%-47%, the loss value in the table can be used to obtain the highest operating efficiency.

1, according to user requirements, can produce products outside the capacity of the table, its performance parameters depending on the requirements.

2, according to different operating environments, we can provide specially designed products.

3, the medium voltage can be selected to be different from the voltage value in the table or tap, high pressure tap to choose asymmetric voltage regulation tap.

4, short circuit impedance can be selected different from the table median value.

5. The final size shall be subject to the drawing confirmation after the contract is signed.

Structural features

110kV three-phase double winding on-load voltage regulating power transformer

Different specifications of power transformers can be developed according to the special requirements of users.

110KV CLASS INTELLIGENT THREE-PHASE ON-LOAD VOLTAGE REGULATING POWER TRANSFORMER