恩波利
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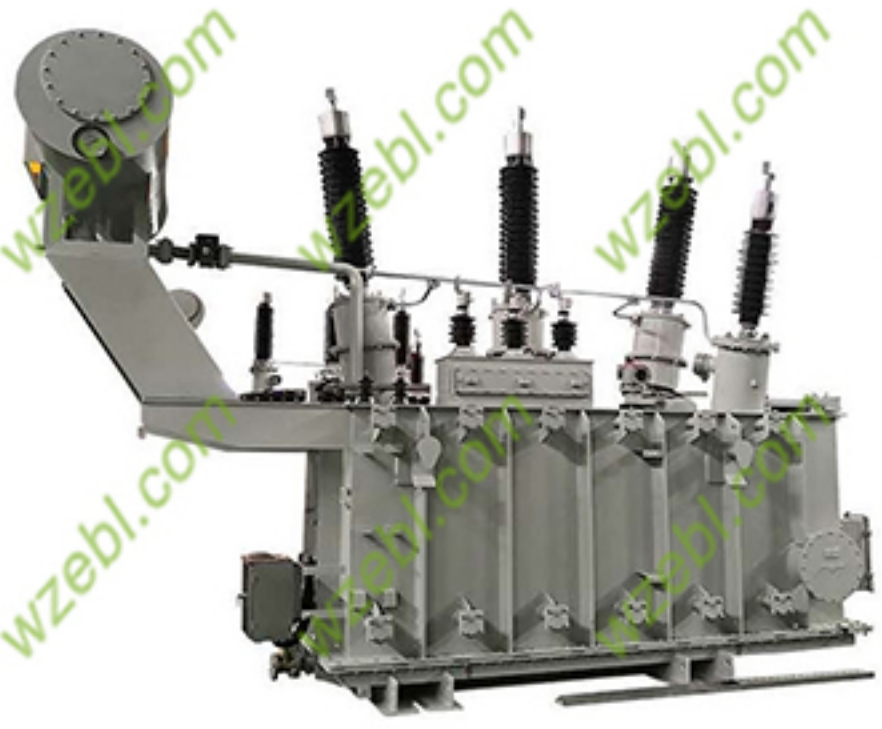

220KV 3phase On-load Voltage Transformer

Summary

220kV three-phase oil immersed on-load voltage regulating transformer brings about a series of major transformations in terms of material, technique, and construction. It is characteristic of compact construction, low weight, high efficiency, low loss, low noise, and reliability of performance. The product can reduce considerable losses on grid and operational costs and extend distinct economic efficacy.

The product meets following national standards: GB1094.1-2013 Power transformers Part 1: General; GB1094.2-2013 Power transformers Part 2: Temperature rise; GB1094.3-2003 Power transformers Part 3: Insulation levels, dielectric tests and external clearances in air; GB1094.5 -2003 Power transformers Part 5: Ability to withstand short-circuit; GB/ T6451-2015 Specification and technical requirements for three phase oil immerse power transformers.

Model and meaning

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- Protection code(No label, generally; TH wet and hot; TA dry and hot)
- Rated voltage class of high voltage winding (kV)
- Rated capacity (kVA)
- Design sequence number (1, 2)
- Method of regulation (No label for non-exciting regulation, Z - on-load regulation)
- Lead material (no label for copper wire; L aluminum wire)
- No. of winding (No label for double-winding; S three-winding, F double-split)
- Mode of circulation (No label for natural circulation; P-forced circulation)
- Mode of cooling (J no label for self-cooling, F oil immerse air cooling; S water cooling)
- No. of Phase (D single-phase, S three-phase)

Main 220kV level three-phase on-load voltage regulating power transformer technical parameters

31500kVA~420000kVA three-phase duplex-winding non-field excitation changing power transformer

Rated capacity (kVA)	Voltage combination		Vector group	No-load loss (kW)	Load loss (kW)	No load current (%)	Short-circuit impedance (%)
	High voltage (kV)	Low voltage(kV)					
31500	220±2x2.5% 242±2x2.5%	6.3 6.6 10.5 11	YNd11	28	128	0.56	12-14
40000				32	149	0.56	
50000				39	179	0.52	
63000				46	209	0.52	
75000		10.5 13.8		53	237	0.48	
90000				64	273	0.44	
120000				75	338	0.44	
150000		10.5、11、13.8 15.75 18、20		89	400	0.40	
160000				93	420	0.39	
180000				102	459	0.36	
240000				128	538	0.33	
300000		15.75 18 20		154	641	0.30	
360000				173	735	0.30	
370000				176	750	0.30	
400000				187	795	0.28	
420000				193	824	0.28	

Note 1 Transformers with rated capacity less than 31500 kVA and other voltage combinations can also be provided as required.
Note 2 Transformers with low voltage of 35 kV or 38.5 kV can also be provided as required.
Note 3 The non-splitting structure is preferred. If there is any requirement for operation, sub-connectors can be set up.
Note 4 When the average annual load rate of transformer is between 45% and 50%, the maximum operating efficiency can be obtained by using the loss value in the table.

31500kVA~300000kVA three-phase three-winding non-field excitation changing power transformer

Rated capacity (kVA)	Voltage Combination			Vector group	No-load loss (kW)	Load loss (kW)	No load current (%)	Short-circuit impedance(%)	
	High voltage (kV)	Med-ium voltage (kV)	Low voltage (kV)					Step up	Step down
31500	220±2x2.5% 230±2x2.5% 242±2x2.5%	69 115 121	6.3、6.6 10.5、21 36、37 38.5	YNyn0d11	32.0	153	0.56	H-M 22~24 H-L 12~14 M-L 7~9	H-M 12~14 H-L 22~24 M-L 7~9
40000					38.0	183	0.50		
50000					44.0	216	0.44		
63000					52.0	257	0.44		
90000			10.5、13.8 21、36、37 38.5		68.0	333	0.39		
120000					84.0	410	0.39		
150000			10.5、13.8 15.75、21 36、 37、38.5		100	487	0.33		
180000					113	555	0.33		
240000					140	684	0.28		
300000					166	807	0.24		

Note 1: The capacity allocation of load loss in the table is (100/100/100)%. The capacity allocation of boost structure can be (100/50/100)%. The capacity allocation of Buck structure can be (100/50/100)% or (100/50/100)%.
Note 2: Transformers with rated capacity less than 31500 KA and other voltage combinations can also be provided as required.
Note 3: Transformers with low voltage of 35 kV can also be provided as required.
Note 4: Priority should be given to non-splitting structure. If the operation requires, splitting can be set.
Note 5: When the average annual load rate of transformer is between 45%, the maximum operating efficiency can be obtained by using the loss value in the table.

31500kVA~180000kVA three-phase duplex-winding on-load tap changing power transformer

Rated capacity (kVA)	Voltage combination		Vector group	No-load loss (kW)	Load loss (kW)	No load current (%)	Short-circuit impedance (%)
	High voltage (kV)	Low voltage(kV)					
31500	220±8x1.25% 230±8x1.25%	6.3、6.6 10.5、11、21 36、37 38.5	YNd11	30.0	128	0.57	12~14
40000				36.0	149	0.57	
50000				43.0	179	0.53	
63000				50.0	209	0.53	
90000				64.0	273	0.45	
120000				79.0	338	0.45	
150000				92.0	400	0.41	
180000				108.0	459	0.38	
120000		66 69		81.0	337	0.45	
150000				96.0	394	0.41	
180000				112	451	0.38	
240000				140	560	0.30	

31500kVA~240000kVA three-phase three-winding on-load tap changing power transformer

Rated capacity (kVA)	Voltage combination			Vector group	No-load loss (kW)	Load loss (kW)	No load current (%)	Capacity assignment	Short-circuit impedance (%)
	High voltage (kV)	Med-ium voltage (kV)	Low voltage(kV)						
31500	220±8x1.25% 230±8x1.25%	69 115 121	6.3 6.6 10.5 11 21 33 36 37 38.5	YNyn0d11	35.0	153	0.63	100/100/100 100/50/100 100/100/50	H-M 12~14 H-L 22~24 M-L 7~9
40000					41.0	183	0.60		
50000					48.0	216	0.60		
63000					56.0	257	0.55		
90000			10.5 11 21 33 36 37 38.5		73.0	333	0.44		
120000					92.0	410	0.44		
150000					108	487	0.39		
180000					124	598	0.39		
240000					154	741	0.35		

Note 1 The data listed in the table are applicable to depressurized structural products, and boost structural products can also be provided as required.
Note 2 Transformers with low voltage of 35 kV can also be provided as required.
Note 3 When the average annual load rate of transformer is between 45% and 50%, the maximum operating efficiency can be obtained by using the loss value in the table.