



PhG-TL5140-34.5-690Y

Natural and synthetic ester liquid-immersed transformer (IEEE standard)



Low loss

- The core is made of high quality cold rolled grainoriented silicon steel sheet, laminated by multi-stage 45 °ful diagonal joint, with low no-load andload loss.



Insulation performance

- Integrate high-voltage load switch, fuse, and transformer into a single oil tank, with volume significantly reduced.



Heat dissipation performance

- ONAN/KNAN cooling mode is adopted to ensure normal operation of transformer



Highly customized

- Design and configuration can be changed according to customer requirements.



Standard(s) for Safety

- IEEE C57.12.00, 1st Ed.
- IEEE C57.12.28, 1st Ed.

NO	Technical Parameter	Specifications
1	Type	2 winding, Oil immersed, Inverter duty Transformer
2	Rated Output kVA	5140
3	Vector Group	Dy1
4	Type of Cooling	KNAN
	1. Oil Type	FR3
	2. Manufacturer	Cargill
5	Rated Voltage kV	
	1. HV	34.5
	2. LV	0.69
	3. Voltage Variation	± 10%
6	Rated Current A	
	1. HV	86
	2. LV1	4300.8
	3. LV 2 (if applicable)	
7	Nos. of Phases	3
8	Rated Frequency Hz	60
	1. Frequency Variation	± 1Hz
9	Temp. rise over reference design ambient temperature 107°F (40°C)	5140kVA@107°F(40°C)
	1. In oil thermometer	117°F(65°C)
	2. In winding by resistance [Maximum temperature rise in winding at rated power, frequency and on tap producing highest losses (measured by resistance)]	117°F(65°C)
	3. Hot Spot Temp. based at yearly average ambient temperature at site	233°F(110°C)absolute
10	Conductor material	
	1. HV	Aluminum
	2. LV	Aluminum
11	Tap Changer	OCTC
	1. Type	Off Circuit
	2. Tap Range - % Variation	±2×2.5%
12	Insulation Level	
	1. L.V.	LI 35kV/AC 10kV
	2. H.V.	LI 150kV/AC 50kV

NO	Technical Parameter	Specifications
13	Impedance %	
	1. Reactance	8.84%
	2. Resistance at 188°F(85°C)	0.87%
	3. Impedance at rated current for the principal tapping	9%, tolerance±7.5%
	4. Impedance at Max tap	9.00%
	5. Impedance at Min tap	9.00%
14	Regulation at full load and 188°F(85°C)	
	1. At unity power factor 1	0.87
	2. At 0.8 power factor lagging 0.8	5.48
15	Guaranteed losses at Principle tap, full load and 188°F(85°C) (without +ve tolerance)	
	1. No load losses kW	5
	2. Load losses kW	46.5
	3. Total Losses kW	51.5
16	Efficiency at rated voltage and at rated frequency	
	1. At full load	99.01%
	2. At 3/4 full load	99.20%
	3. At 1/2 full load	99.36%
	4. Maximum Efficiency	99.41%
17	Minimum Peak Efficiency Index (PEI) EU548	
	1. At PEI load	99.41%
18	No load current referred to HV	
	1. At 90% rated voltage	0.38%
	2. At 100% rated voltage	0.55%
	3. At 110% rated voltage	2.20%
19	Approximate maximum Flux density T	
	1. At 90% rated voltage	≤1.566
	2. At 100% rated voltage	≤1.740
	3. At 110% rated voltage	≤1.914
20	Short Circuit withstand duration	
	1. Three phase dead short Circuit at terminal with Rated voltage maintained on the other side.	2 second
	2. Single phase short circuit at terminal with rated Voltage maintained on other side.	2 second
21	Dimension inch(mm)	
	1. Width	86.61inch (2200mm)
	2. Depth	129.92inch (3300mm)
	3. Height	97.64inch (2480mm)

NO	Technical Parameter	Specifications
22	Weight lb(kg)	
	1. Core and Winding	10361.62lb(4700kg)
	2. Oil	5731.96lb(2600kg)
	3. Others	7495.64lb(3400kg)
	4. Total	23589.22lb(10700kg)
23	Accessories	
	HV bushings	6 piece
	LV bushings	3 piece
	Off-load tap changer	1 piece
	Pressure relief device	1 piece
	Oil-level indicator	1 piece
	Oil-temperature indicator	1 piece
	Winding-temperature indicator	NA
	vacuum pressure gauge	1 piece
	Load break switch	1 piece
	Fuse	3 piece
	Backup fuse	6 piece
Drain valve	1 piece	
24	Signals	
	Pressure relief trip	1 piece
	Low oil level trip	1 piece
	Oil-temperature alarm and trip	1 piece
	Oil-temperature signal (0~160°C)	1 piece
	Winding-temperature alarm and trip	NA
	Winding-temperature signal	NA
	Load break switch On/Off	1 piece