



PhG-TL4400-34.5-645Y

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 | 4400 |
| 3 | Vector Group | Dy1 |
| 4 | Type of Cooling | KNAN |
| | 1. Oil Type | FR3 |
| 5 | Rated Voltage kV | |
| | 1. HV | 34.5 |
| | 2. LV | 0.645 |
| | 3. Voltage Variation | ± 10% |
| 6 | Rated Current A | |
| | 1. HV | 73.6 |
| | 2. LV1 | 3938.5 |
| | 3. LV 2 | N/A |
| 7 | Nos. of Phases | 3 |
| 8 | Rated Frequency Hz | 60 |
| | 1. Frequency Variation | ± 1 |
| 9 | Temp. rise over reference design ambient temperature 107°F(40°C) | 4400kVA@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 | 7.95% |
| | 2.Resistance at 188°F(85°C) | 0.89% |
| | 3.Impedance at rated current for the principal tapping | 8%, ±7.5% |
| | 4.Impedance at Max tap | 8.00% |
| | 5.Impedance at Min tap | 8.00% |
| 14 | Regulation at full load and 188°F(85°C) | |
| | 1.At unity power factor | 0.89 |
| | 2.At 0.8 power factor lagging | 5.48 |
| 15 | Guaranteed losses at Principle tap, full load and 188°F(85°C) (without +ve tolerance) | |
| | 1.No load losses kW | 4.8 |
| | 2.Load losses kW | 39.2 |
| | 3.Total Losses kW | 44 |
| 16 | Efficiency at rated voltage and at rated frequency | |
| | 1. At full load 100% | 99.01% |
| | 2. At 3/4 full load 75% | 99.19% |
| | 3. At 1/2 full load 50% | 99.34% |
| | 4. Maximum Efficiency | 99.38% |
| 17 | Minimum Peak Efficiency Index (PEI) EU548 | |
| | 1. At PEI load PEI | 99.38% |
| 18 | No load current referred to HV | |
| | 1. At 90% rated voltage 90% | 0.38% |
| | 2. At 100% rated voltage 100% | 0.55% |
| | 3. At 110% rated voltage 110% | 2.20% |
| 19 | Approximate maximum Flux density T | |
| | 1. At 90% rated voltage 90% | ≤1.566 |
| | 2. At 100% rated voltage 100% | ≤1.740 |
| | 3. At 110% rated voltage 110% | ≤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 | 84.65inch (2150mm) |
| | 2. Depth | 111.42inch (2830mm) |
| | 3. Height | 98.43inch (2500mm) |

| NO | Technical Parameter | Specifications |
|----|--------------------------------------------------|--------------------|
| 22 | Weight lb(kg) | |
| | 1. Core and Winding | 8708.17lb(3950kg) |
| | 2. Oil | 4475.34lb(2030kg) |
| | 3. Others | 6283.11lb(2850kg) |
| | 4. Total | 19466.62lb(8830kg) |
| 23 | Accessories | |
| | LV bushings | 6 piece |
| | HV 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 piece |
| | 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 alarm+extremely low oil level trip | 1 piece+1piece |
| | 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 |