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Production Testing Information for Series J

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Each low-voltage transformer is tested

Ratio:
The ratio of the number of turns in a higher voltage winding to that in a lower voltage winding. This test confirms the ratio of input voltage to output voltage is correct.

Core Loss:
Evaluation of no load wattage at rated primary voltage to confirm the core loss. This test confirms the unit meets design requirements.

Hi-Pot:
Abbreviation for "high potential," used to verify electrical insulation in finished transformers. This test checks for electrical shorts.

Induced:
Checks the insulation between turns, layers and sections of a winding. This test checks for electrical shorts.

Polarity:
To check the alignment or orientation of a circuit in relation to the parallel or banking of transformers. This test checks that the primary and secondary phase relations are correct.

Optional low-voltage tests

Temperature Rise:
Unit tested to point of steady temperature condition to confirm that it meets required temperature rise.

Sound Level:
Background noise level measured and unit powered at rated voltage and frequency under no-load conditions to confirm unit meets NEMA ST-20 requirements.

Full Load Losses:
Test of load carried by transformer at a specific frequency.

Impedance:
Test measures the opposition to time-varying electric current in an electric circuit.

Efficiency:
Running different load tests to confirm unit meets efficiency requirements of DOE or CSA802.

Certified test reports can be provided upon request.
Note: Additional costs apply for all optional testing and certified testing.
Source: Definitions of IEEE Standard Test Codes

Transformer testing medium-voltage

Each medium-voltage transformer is tested

DC Resistance:
Measurement of DC resistance using a resistance bridge.

Voltage Ratio (Turns Ratio):
Verification of the turns ratio conforms to design.

Impedance:
The shorting of one winding and voltage is applied to the other winding. Losses, voltage and current is measured.

Applied Voltage:
60 Hz is applied to the winding voltage. Voltage is then applied for one minute to the winding while core and other winding are grounded.

Induced Voltage/Load Loss:
2X rated voltage between terminals of a winding while all other terminals are open.

No Load Loss / Excitation Current:
Rated voltage is applied to winding, the current and losses are measured.

Dialectric:
Determines if transformer complies with "over-voltage" requirements.

Polarity/Phase-Relation:
Determines angular displacement and phase sequence as compared to specification.

Electric & Magnetic Field (EMF):
Measures Electric and Magnetic fields produced by the transformer.

Published by
Siemens 2019

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Norcross, GA 30092

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Printed in USA-CP
Order No. PDFL-TFTEST-1119

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Optional medium-voltage tests

Temperature Rise:
Verification the temperature of the transformer "hot spot" over ambient temperature complies to the specification/ nameplate rating.

Sound Level:
Measures the sound emitted by the transformer.

Short Circuit:
Confirms the mechanical capability of a transformer can withstand a system short circuit.

BIL Level:
Determines the ability of the insulation system to withstand a lightning induced voltage surge.

Partial Discharge:
Tests the integrity of the insulation and the capability to withstand partial discharge.

Certified test reports can be provided upon request.
Note: Additional costs apply for all optional testing and certified testing.
Source: Definitions of IEEE Standard Test Codes