

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.

Dielectric:

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.

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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.



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