



TRANSFORMERS

What is the proper procedure to energize and test a newly installed transformer?

1. Visual Inspection: Be sure the transformer is mounted properly with the proper clearances. (See name plate and NEC 450.9)
2. Loosen the isolator bolts per the manufacturers recommendation. Remove any shipping braces. Install any external isolators required.
3. Has the appropriate wiring method been used? (Correct type and length of flex)
4. Verify that the wiring is correct. Do the wires enter the enclosure in the appropriate areas as marked inside the case? Are the connections secure? Have the proper lugs been used? (One wire per hole) Are the taps set to the correct voltage?
5. Verify that the secondary XO terminal is bonded to the grounding terminal and the grounding electrode conductor is installed and sized per NEC 250.66. Metal raceways enclosing grounding electrode conductors must be bonded to the conductor on BOTH ends.
6. Energize the primary feed while leaving the secondary overcurrent device (disconnect or panel main) Off.
7. Measure the voltages at the transformer terminals with a meter to ensure the voltage is correct. Measure between each of the phases, each phase and neutral, and each phase and ground.
8. Make the same measurements at the panel the transformer feeds.
9. The attached checklist can be used to document your inspections and is to be included in your job documentation for the O&M manual.

All code references are from NFPA 70 National Electrical Code 2008 Edition

The interpretations expressed are those of the author and are intended to be a guideline only. They are based on the references listed. It is the responsibility of the reader to be sure this complies with the codes, standards, and specifications applicable to any given situation. Compliance with codes, standards, and specifications is the responsibility of the installer. Final interpretation is up to the local authority having jurisdiction.

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Transformer Inspection

Prior to Energizing

Visual Inspection

- Connected Properly?
- Connections Tight?
- Proper Lugs? (1 wire per lug)
- Proper Tap Setting?
- Isolators Loosened?
- Shipping Braces Removed?
- XO Bonded? (Sized per 250.66)
- Grounding Electrode?
- Ground Raceways bonded?
- Proper Clearances? (NEC 450.9)
- Wire Entries In Proper Location?
- External Isolators?
- Anchored?

Transformer Type

- Delta / Wye
- Delta / Delta
- Single Phase

Primary Voltage

- 480
- 240
- 208

Secondary Voltage

- 480
- 240
- 208
- 120

Wire Size

- Primary _____
- Secondary _____
- Grounding Electrode _____

After Energizing Voltage Readings

Primary

- Phase A - Ground _____
- Phase B - Ground _____
- Phase C - Ground _____
- Phase A - Phase B _____
- Phase A - Phase C _____
- Phase B - Phase C _____

Secondary

- Phase A - Ground _____
- Phase B - Ground _____
- Phase C - Ground _____
- Neutral - Ground _____
- Phase A - Neutral _____
- Phase B - Neutral _____
- Phase C - Neutral _____
- Phase A - Phase B _____
- Phase A - Phase C _____
- Phase B - Phase C _____

NOTES

Inspector: _____
 Job Name: _____
 Job Number: _____

Date: _____

Transformer Tag: _____
 Location: _____