

IEEE Standards Interpretation for IEEE Std C57.12.20™-2005 IEEE Standard for Overhead-Type Distribution Transformers, 500 kVA and Smaller: High Voltage, 34 500 V and Below; Low Voltage, 7970/13 800Y V and Below

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Interpretation Request #1

Topic: Clarification on Tank Grounding (on single phase transformers) **Section:** 7.5.4 Tank Grounding

Subclause 7.5.4.2 (Tank grounding connector) provides for a tank grounding connector for units with single high-voltage cover bushings (Figure 7, Figure 8 and Figure 9). Is it that a connector is mandatory for these unit types and optional for units with two high-voltage cover bushings?

Interpretation Response

This interpretation is correct. The tank ground provision and connector is mandatory on single cover mounted HV bushing units and optional for units with two HV bushings (whether cover or side-wall mounted). On all units with two HV bushings, the tank ground provision (threaded boss) is required, but the connector is not required. Most manufacturers will furnish the connector as an option in this case.

Interpretation Request #2

Subclause 7.5.4.3 (Low-voltage grounding connection) provides for the connection of the low voltage neutral terminal to the tank. Should this connection be via the low voltage grounding provision (7.5.4.4) or via the tank grounding provision (7.5.4.1)? Also, is this provision only mandatory for units with single high-voltage cover bushing and low-voltage tank bushings (Figure 7 and Figure 8) and not for units with two high-voltage cover bushings (Figure 11 and Figure 12)?

Interpretation Response

Indeed, the LV grounding connection provides the direct connection of the LV neutral to the tank. The tank is then in turn grounded through the tank ground provision and connector. The LV neutral ground is normally accomplished by a copper strap is bolted between the X2 bushing and a threaded boss located immediately underneath the neutral (X2) bushing. The LV grounding connection is mandatory for units with one HV bushing, and is optional for units with two HV bushings.

Interpretation Request #3

Can there be a low-voltage grounding provision (7.5.4.4) for units with low-voltage cover bushings (Figure 9 and Figure 12) or is the tank grounding provision (7.5.4.1) sufficient?

Interpretation Response

A LV neutral grounding provision could be provided as an option for units with cover LV bushings. This would not be a normal requirement and therefore is not included in the standard.