

IEEE Standards Interpretation for IEEE Std C57.13™-1993 IEEE Standard Requirements for Instrument Transformers

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Interpretation Request #1

Topic: Calculating burdens at secondary currents other than 5-amperes rated **Relevant**

Clause: Subclause 6.3, Table 9 - Table Notes; Subclause 6.4.1

For a CT with an 1 amp rated secondary current with an accuracy designation of O.3B2.0, what is the burden in ohms associated with this accuracy class?

Interpretation Response

The standard states that the VA is constant no matter what the secondary current of the transformer. The B-2.0 burden is 2 ohms of impedance at 5 amperes secondary current and per the standard is 50VA. Therefore, a transformer with a 1 ampere secondary current would have a burden of 50 ohms impedance to maintain the 50VA.

Interpretation Request #2

Topic: Basic Impulse . . . design requirements **Relevant Clause:** 3.4, 4.5, 4.7.2

Subclause 4.5 states the design requirements for Basic Impulse levels, dielectric tests.... It states exceptions for different type of transformers. The clause does not make exceptions for bushing type transformers. By default, bushing transformers would then be included in this design requirement.

Subclause 4.7.2 item a) does state this exception for routine tests of bushing type transformers.

Refer also to 3.4, "Bushing type transformers have no insulation for the primary winding."

Are basic impulse, dielectric test....design requirement according to 4.7.2 required for bushing type transformers?

Interpretation Response

Subclause 3.4 defines a bushing-type current transformer as an annular instrument transformer without any insulation on the primary winding. Therefore, 4.7.2 is correct in omitting any test between the primary and secondary windings since there is not any insulation between the primary and secondary windings on the bushing-type current transformer.

Subclause 4.7.3 calls for impulse test for all instrument transformer primary insulation rated at nominal system voltages of 0.6kV or higher. Since bushing-type current transformers do not have any primary insulation, they do not meet this requirement and do not receive the impulse or primary applied tests.

If a annular current transformer does have a primary with a rated nominal system voltage, it would be a window-type current transformer as defined by 3.43.