

IEEE Standard for Current Transformers with Maximum Milliampere Secondary Current of 250 mA

IEEE Power and Energy Society

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Transformers Committee

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Transformers Committee
of the
IEEE Power and Energy Society

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Abstract: Milliampererange current transformers (CTs) are not addressed in the scope of IEEE Std C57.13-2016. The evaluation, certification, and specification of milliamperer CTs is enabled in this standard similar to the present process available for 5-A secondary output CTs.

Keywords: accuracy class, burden, CT, current transformer, high-accuracy, IEEE C57.13.7™, instrument transformer, metering, meters, phase angle, ratio correction factor, RCF, relays, revenue metering, TCF, transformer correction factor

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Introduction

This introduction is not part of IEEE Std C57.13.7-2018, IEEE Standard for Current Transformers with Maximum Milliamper Secondary Current of 250 mA.

This standard was prepared by the Working Group on Milliamper Current Transformers (CTs) of the Instrument Transformer Subcommittee of the Transformers Committee of the IEEE Power and Energy Society. The purpose of this standard is not only to allow the evaluation, certification, and specification of milliamper CTs similar to the present process available for 5-A secondary output CTs under IEEE Std C57.13™-2016, since 80-mA and 100-mA CTs are now approved in Canada, but also to take into consideration certain applications in the use of the milliamper CTs that has the advantage of a much lower voltage drop in the secondary leads when the burden is located at a farther distance from where the installed ma CT is located. Also, for the same voltage drop across the burden of a milliamper CT, its power dissipation in the burden is much less than that when using the 5-A CT. However, with a milliamper CT, care should be taken to minimize environmental interference due to the much lower secondary current as compared to that of the 5-A CT, since it would be more susceptible to noise/interference, etc.

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IEEE Standard for Current Transformers with Maximum Milliampere Secondary Current of 250 mA

1. Overview

The scope of IEEE Std C57.13^{TM1} does not currently address the milliampere range current transformer (CT). This standard provides the evaluation, specification, certification and use of milliampere CTs, separate from the electricity measurement device, similar to the present process available for 5-A secondary output CTs.

1.1 Scope

This standard is intended to define the requirements for CTs with a maximum of secondary output of 250 mA. These requirements of ratios, accuracy classes, burdens, and test methods supplement but are not subordinate to IEEE C57.13. These transformers are for both indoor and outdoor applications.

1.2 Purpose

The purpose of this standard is to provide the performance requirements for electrical system and test interchangeability for CTs with milliampere output.

2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they shall be understood and used, so each referenced document is cited in text and its relationship to this document is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

IEEE Std C57.13TM, IEEE Standard Requirements for Instrument Transformers.^{2,3}

NCCL 2540.3:2006, Requirements for the Calibration of Measuring and Test Equipment.⁴

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