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IEEE Standard Requirements for Instrument Transformers

IEEE Power and Energy Society

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Transformers Committee

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USA

IEEE Std C57.13™-2016
(Revision of
IEEE Std C57.13-2008)

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Abstract: Electrical, dimensional, and mechanical characteristics are covered, taking into consideration certain safety features, for current and inductively coupled voltage transformers of types generally used in the measurement of electricity and the control of equipment associated with the generation, transmission, and distribution of alternating current. The aim is to provide a basis for performance and interchangeability of equipment covered and to assist in the proper selection of such equipment. Safety precautions are also addressed. Accuracy classes for metering service are provided. The test code covers measurement and calculation of ratio and phase angle, demagnetization, impedance and excitation measurements, polarity determination, resistance measurements, short-time characteristics, temperature rise tests, dielectric tests, and measurement of open-circuit voltage of current transformers.

Keywords: accuracy, current transformer, IEEE C57.13™, instrument transformer, primary winding, rated secondary voltage, routine tests, secondary winding, type tests, voltage transformer

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Introduction

This introduction is not part of IEEE Std C57.13™-2016, IEEE Standard Requirements for Instrument Transformers.

This standard was prepared by the Instrument Transformer Subcommittee of the Transformers Committee of the IEEE Power and Energy Society. The purpose of this standard is to cover the electrical, dimensional, and mechanical characteristics and to take into consideration certain safety features, for current and inductively coupled voltage transformers.

The changes in this revision of IEEE Std C57.13 include revised partial discharge requirements, the addition of Annex B, covering bushing current transformers and two classes of instrument transformer requirements have been introduced. In addition, this standard has been reorganized to make it more understandable. The accuracy requirements from IEEE Std C57.13.6™ have also been incorporated into the standard.[1]

[1] Information on references can be found in Clause 2.

Contents

IEEE Standard Requirements for Instrument Transformers

1. Overview

1.1 Scope

This standard is intended for use as a basis for performance and interchangeability of equipment covered, and to assist in the proper selection of such equipment. Safety precautions are also addressed.

This standard covers certain electrical, dimensional, and mechanical characteristics, and takes into consideration certain safety features of current and inductively coupled voltage transformers of types generally used in the measurement of electricity and the control.

1.2 Purpose

The purpose of this standard is to provide the performance requirements for electrical system and test interchangeability of current and inductively coupled voltage transformers. These transformers are for both indoor and outdoor application.

This standard covers the requirements for Class 1 instrument transformers. For instrument transformers of a nominal system voltage of 115 kV and above if Class 2 is required refer to IEEE Std C57.13.5™.[1]

[1] Information on references can be found in Clause 2.