



# IEEE Guide for the Application of Current Transformers Used for Protective Relaying Purposes

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**IEEE Power Engineering Society**

Sponsored by the  
Power System Relaying Committee

C37.110<sup>TM</sup>

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IEEE  
3 Park Avenue  
New York, NY 10016-5997, USA  
7 April 2008

**IEEE Std C37.110<sup>TM</sup>-2007**  
(Revision of  
IEEE Std C37.110-1996)



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(Revision of IEEE Std C37.110-1996)

# **IEEE Guide for the Application of Current Transformers Used for Protective Relaying Purposes**

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**Power System Relaying Committee  
of the  
IEEE Power Engineering Society**

Approved 5 December 2007  
**IEEE-SA Standards Board**

Approved 1 May 2008  
**American National Standards Institute**

**Abstract:** The characteristics and classification of current transformers (CTs) used for protective relaying are described. this guide also describes the conditions that cause the CT output to be distorted and the effects on relaying systems of this distortion. The selection and application of CTs for the more common protection schemes are also addressed.

**Keywords:** current transformers, protective relaying

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The Institute of Electrical and Electronics Engineers, Inc.  
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Print: ISBN 978-0-7381-5374-2 STD9560  
PDF: ISBN 978-0-7381-5375-9 STDPD95760

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## Introduction

This introduction is not part of IEEE Std C37.110-2007, IEEE Guide for the Application of Current Transformers Used for Protective Relaying Purposes.

This guide was prepared by the Working Group 1-15 on Application of Current Transformers for Relaying of the Relay Practices Subcommittee of the IEEE Power System Relaying Committee. The guide is intended to assist relay engineers in understanding the operation of current transformers (CTs) and their selection and application to specific relay protection schemes. The guide was revised to include more comprehensive examples to aid the relay engineer in the selection and application of CTs.

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## 1. Overview

### 1.1 Scope

This guide describes the characteristics and classification of current transformers (CTs) used for protective relaying. It also describes the conditions that cause the CT output to be distorted and the effects on relaying systems of this distortion. The selection and application of CTs for the more common protection schemes are also addressed.

### 1.2 Purpose

The purpose of this guide is to present a comprehensive treatment of the theory and application of CTs to assist the relay application engineer in the correct selection and application of CTs for protective relaying purposes.

## 2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they must 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.