ANSI C12.11-2007
Revision of
ANSI C12.11-2006

American National Standard

For Instrument Transformers for Revenue Metering 10kV BIL through 350 kV BIL (0.6 kV NSV through 69 kV NSV)

Secretariat:

National Electrical Manufacturers Association

Approved November 6, 2007

American National Standards Institute, Inc.

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Published by

National Electrical Manufacturers Association
1300 North 17th Street, Rosslyn, VA 22209

Printed in the United States of America

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Foreword (This Foreword is not part of American National Standard C12.11-2007.)

This Standard was developed by the Accredited Standards Committee on Electricity Metering, C12, for full consensus approval as an American National Standard. This revised edition supersedes ANSI C12.11-1987.

The new edition differs from the previous one in both technical and editorial content. Besides several minor revisions, technical changes include: increased focus on Current Transformer Rating Factors when ambient temperature is not 30 °C, and revisions to Rating Factor and Burden & Accuracy performance to fit established industry practice. Editorial revisions included the redrawing of all figures.

This Standard provides recommended minimum requirements for current and voltage transformers used for electricity metering. It is to be used in conjunction with the latest revision of ANSI / IEEE C57.13 and IEEE Std C57.13.6™.

Comments on standards and requests for interpretations should be addressed to ANSI Committee C12 Secretary, National Electrical Manufacturers Association, 1300 North 17th Street, Rosslyn, Virginia, 22209.

This Standard was processed and approved for submittal to ANSI by Accredited Standards Committee on Electricity Metering C12. Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time of its approval, the C12 Committee had the following members:

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For Instrument Transformers For Revenue Metering – 10 kV BIL through 350 kV BIL – (0.6 kV NSV through 69 kV NSV)

1 Scope

This Standard covers the general requirements, metering accuracy, thermal ratings, and dimensions applicable to current transformers and inductively coupled voltage transformers for revenue metering, 10 kV basic lightning impulse insulation level (BIL) through 350 kV BIL for 0.6 kV nominal system voltage (NSV) through 69 kV NSV.

2 References

IEEE Std C57.13-1993 (R2003), *IEEE Standard Requirements for Instrument Transformers*
IEEE Std C57.13.6™-2005, *IEEE Standard for High-Accuracy Instrument Transformers*

3 Definitions

All definitions, except as specifically covered in this Standard, shall be in accord with the latest version of ANSI / IEEE C57.13.

3.1 Accuracy Class

The limits of transformer correction factor, in terms of percent error, that have been established to cover specific performance ranges for line power factors between 1.0 and 0.6 lag.

3.2 Indoor Applications of Instrument Transformers

Installations where two conditions are met:

(1) Ambient temperatures may significantly exceed outdoor temperatures
(2) Protection is provided from weather (precipitation).

Note that these conditions may be met when instrument transformers are mounted in enclosures that are outside of buildings.

4 General Requirements

4.1 ANSI / IEEE C57.13 Provisions

Instrument transformers shall meet the applicable provisions of the latest version of ANSI / IEEE C57.13 or IEEE C57.13.6, in addition to the provisions in this Standard.

Accuracy performance is shown in Figures 1 thru 18 as secondary burdens for which performance will meet 0.3 accuracy class. IEEE Std C57.13.6™-2005 defines 0.15 and 0.15S accuracy classes and E-0.04 and E-0.2 burdens for current transformers. It may be acceptable for a current transformer design that meets either 0.15 or 0.15S accuracy class for some burdens to not meet the 0.3 accuracy class for the highest burden shown in Figures 1-12.

To meet specific applications, it is acceptable, upon agreement between the user and manufacturer, to provide instrument transformers with electrical characteristics that are less than the minimum electrical characteristics published in Figures 1-18.