CSA GROUP™

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Low Voltage Transformers — Part 1: General Requirements

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Update No. 2
C22.2 No. 66.1-06
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Title: *Low Voltage Transformers — Part 1: General Requirements* — originally published April 2006

Revisions issued: Update No. 1 — November 2012

The following revisions have been formally approved and are marked by a vertical line in the margin on the attached replacement pages:

Revised	Title page, Copyright page, Preface, Clauses 3.2.1, 12.3.3, and 26.3
New	Clause 11.5
Deleted	None

- Update your copy by inserting these revised pages.
- Keep the pages you remove for reference.

CSA Group
CSA C22.2 No. 66.1-06
First Edition

Underwriters Laboratories Inc.
UL 5085-1
First Edition

Low Voltage Transformers – Part 1: General Requirements

April 17, 2006

(Title Page Reprinted: December 6, 2013)

ANSI/UL 5085-1-2013

Commitment for Amendments

This standard is issued jointly by the Canadian Standards Association (operating as "CSA Group") and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to CSA Group or UL at any time. Revisions to this standard will be made only after processing according to the standards development procedures of CSA Group and UL. CSA Group and UL will issue revisions to this standard by means of a new edition or revised or additional pages bearing their date of issue.

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This Standard is subject to periodic review, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquires@csagroup.org and include "Proposal for change" in the subject line: Standard designation (number); relevant clause, table, and/or figure number; wording of the proposed change; and rationale for the change.

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The most recent designation of ANSI/UL 5085-1 as an American National Standard (ANSI) occurred on December 6, 2013. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface.

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CONTENTS

Preface

This is the harmonized CSA Group and UL standard for low voltage transformers. It is the first edition of CSA C22.2 No. 66.1 and the first edition of UL 5085-1. This harmonized standard has been jointly revised on December 6, 2013. For this purpose, CSA Group and UL are issuing revision pages dated December 6, 2013.

This harmonized standard was prepared by a Technical Harmonization Committee comprised of members from CSA Group, Underwriters Laboratories Inc. (UL), and representatives of the low voltage transformer manufacturing industry. The efforts and support of members of the Technical Harmonization Committee are gratefully acknowledged.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This standard was reviewed by the CSA Subcommittee on C22.2 No. 66, under the jurisdiction of the CSA Technical Committee on Industrial Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

This Standard has been approved by the American National Standards Institute (ANSI) as an American National Standard.

Where reference is made to a specific number of samples to be tested, the specified number is to be considered a minimum quantity.

***Note:** Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.*

Level of harmonization

This standard uses the IEC format but is not based on, nor is it to be considered equivalent to, an IEC standard. This standard is published as a unique standard for CSA Group and UL.

An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

Reasons for Differences from IEC

The Technical Harmonization Committee identified the following IEC Standard within the scope of this standard: IEC 61558-1 (1998-07), Safety of power transformers, power supply units, and similar - Part 1: General requirements.

The THC determined that the safe use of transformers and reactors is critically dependent on the electrical system in which they are intended to be installed. Significant investigation is required to assess safety and system compatibility issues that may lead to harmonization of traditional North American transformers and reactors with those presently addressed in the known IEC standards. The THC agreed such future investigation might be facilitated by completion of harmonization of North American standards for transformers and reactors.

PART 1: GENERAL REQUIREMENTS

1 Scope

1.1 These requirements cover the following types of transformers:

a) Air-cooled transformers and reactors for general use;

b) General purpose autotransformers;

c) Ferroresonant transformers;

d) Class 2 and Class 3 transformers (which are evaluated in accordance with Part 2);

e) Cord-connected transformers (which are evaluated in accordance with Part 2);

f) Transformers incorporating overcurrent or over-temperature protective devices, transient voltage surge protectors, or capacitors; and

g) Permanently-connected transformers.

1.2 These transformers are intended to be used in accordance with the National Electrical Code, ANSI/NFPA 70, or CSA C22.1, the Canadian Electrical Code, Part I. The Canadian Electrical Code defines low voltage as any voltage from 31 to 750 V inclusive and high voltage as any voltage above 750 V. The National Electrical Code, ANSI/NFPA 70, defines low voltage as any voltage up to 600 V, nominal. Therefore, low voltage transformers intended for use in Canada may be rated above 600 V up to 750 V. Low voltage transformers intended for use in the United States are rated up to 600 V. Where information in clauses and tables in this standard reference voltage ranges, the limit of 600 V applies in the United States, while the limit of 750 V applies in Canada.

1.3 The standard does not cover the following transformers:

a) Direct plug-in types;

b) Neon;

c) Liquid-immersed;

d) Variable voltage (Variac);

e) Low voltage landscape;

f) Swimming pool and spa:

g) Ignition;

h) High intensity lighting;

i) Toy;

j) Fluorescent lamp types;