CSA GROUP™

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(reaffirmed 2020)

Low Voltage Transformers — Part 2: General PurposeTransformers

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Update No. 1
C22.2 No. 66.2-06
November 2012

Note: *For information about the* ***Standards Update Service****, go to* ***shop.csa.ca*** *or e-mail* ***techsupport@csagroup.org****.*

Title: *Low Voltage Transformers — Part 2: General Purpose Transformers* — originally published April 2006

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

Revised	Title page, copyright page, Contents, Preface, Clauses 8.5.9, 14.3, 26.6, 29.1.3, 29.2.1, 32, and 37.1, and Tables 8 and 9
New	None
Deleted	None

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

CSA Group
CSA C22.2 No. 66.2-06
First Edition

Underwriters Laboratories Inc.
UL 5085-2
First Edition

Low Voltage Transformers – Part 2: General Purpose Transformers

April 17, 2006

(Title Page Reprinted: November 30, 2012)

ANSI/UL 5085-2-2012

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 5085–2 as an American National Standard (ANSI) occurred on November 30, 2012. 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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Annex C (Informative)

Preface

This is the harmonized CSA Group and UL standard for low voltage transformers. It is the first edition of CSA C22.2 No. 66.2 and the first edition of UL 5085-2. This harmonized standard has been jointly revised on November 30, 2012. For this purpose, CSA Group and UL are issuing revision pages dated November 30, 2012.

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 non-equivalent 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.

Interpretations

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one literal interpretation has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

CSA Group Effective Date

The effective date for CSA Group will be announced through CSA Informs or a CSA Group certification notice.

UL Effective Date

This Standard is now in effect.

Parts

The Standard for Low Voltage Transformers is divided into the following parts:

Part Number	Standard Title	Standard Number
1	General Requirements	CSA C22.2 No. 66.1/UL 5085-1
2	General Purpose Transformers	CSA C22.2 No. 66.2/UL 5085-2
3	Class 2 and Class 3 Transformers	CSA C22.2 No. 66.3/UL 5085-3

NOTES –

1. Part 1 covers the general requirements for transformer characteristics, marking, construction, and tests. Additional specific requirements are provided in the subsequent parts.

2. Part 2 and Part 3 supplement requirements and/or modify the corresponding clauses in Part 1 and should be applied together with Part 1. The numbered clauses in Part 2 and Part 3 correspond to the numbered clauses in Part 1.

PART 2: GENERAL PURPOSE TRANSFORMERS

1 Scope

1.1 As noted in Low Voltage Transformers – Part 1: General Requirements, UL 5085-1, or CSA C22.2 No. 66.1, Low Voltage Transformers – Part 1: General Requirements, the requirements of Part 2 cover:

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

b) Autotransformers;

c) Ferroresonant transformers;

d) Cord-connected transformers; and

e) Transformers incorporating overcurrent or over-temperature protective devices, transient voltage surge protectors, or capacitors.

1.7 These requirements do not cover Class 2 and Class 3 transformers (which are evaluated in Part 3).

1.8 Part 2 is intended to be used in conjunction with Part 1. The numbering of the clauses in Part 2 corresponds to the numbered clauses in Part 1. The requirements in Part 1 apply unless modified by Part 2.

5 Mechanical Assembly

5.4 A transformer weighing more than 45 kg (100 lbs) shall be provided with a means for lifting by a fork lift, cable, sling, or similar method. The lifting means may be provided on the transformer core or frame if the transformer has a removable top cover. The lifting means shall be subjected to the Lifting or Mounting Means Test in Clause 37.

Note: The lifting means test does not apply to a transformer that is intended to be lifted from underneath by a fork lift or other method.

6 Enclosure

6.5 Openings

6.5.2 Openings shall prevent passage of a straight rod 12.7 mm (0.5 in) in diameter. When the distance between live parts and the enclosure and between the plane of the ventilation opening and live parts is 102 mm (4 in) or more, openings shall be constructed so that they will prevent passage of a rod 19 mm (0.75 in) in diameter. When the distance between the plane of the opening and uninsulated live parts is less than 102 mm, the rod shall have a cross-section of 13.4 mm (0.53 in).

8 Connections

8.1 General

8.1.4 A transformer shall have provision for the connection of supply and load conductors, either in the form of busbars, leads, pressure terminal connectors, or terminal pads for pressure terminal connectors.