

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Safety of transformers, reactors, power supply units and combinations thereof –
Part 2-16: Particular requirements and tests for switch mode power supply units
and transformers for switch mode power supply units for general applications**

**Sécurité des transformateurs, bobines d'inductance, blocs d'alimentation et
combinaisons de ces éléments –
Partie 2-16: Exigences particulières et essais pour les blocs d'alimentation à
découpage et les transformateurs pour blocs d'alimentation à découpage pour
applications d'ordre général**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**SAFETY OF TRANSFORMERS, REACTORS, POWER SUPPLY
UNITS AND COMBINATIONS THEREOF –**
**Part 2-16: Particular requirements and tests for switch mode power
supply units and transformers for switch mode power supply units
for general applications**

FOREWORD

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International standard IEC 61558-2-16 has been prepared by IEC technical committee 96: Transformers, reactors, power supply units and combinations thereof.

This second edition cancels and replaces the first edition published in 2009 and amendment 1:2013. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) adjustment of structure and references in accordance with IEC 61558-1:2017;
- b) definitions of different voltage characteristics;
- c) partial discharge and description of constructions moved to IEC 61558-1:2017;
- d) alternative method for dimensioning of **clearances**;
- e) removal of requirements for homogeneous field conditions.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
96/509/FDIS	96/513/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

It has the status of a group safety publication in accordance with IEC Guide 104.

This International Standard is to be used in conjunction with IEC 61558-1:2017.

NOTE When "Part 1" is mentioned in this standard, it refers to IEC 61558-1:2017.

This document supplements or modifies the corresponding clauses in IEC 61558-1:2017, so as to convert that publication into the IEC standard: *Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units for general applications*.

A list of all parts in the IEC 61558 series, published under the general title *Safety of transformers, reactors, power supply units and combinations thereof*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

Where this document states "*addition*", "*modification*" or "*replacement*", the relevant text of IEC 61558-1:2017 is to be adapted accordingly.

In this document, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type*;
- explanatory matter: in smaller roman type.

In the text of this document, the words in **bold** are defined in Clause 3.

Subclauses, notes, figures and tables additional to those in IEC 61558-1:2017 are numbered starting from 101; supplementary annexes are entitled AA, BB, etc.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

IEC TC 96 has a group safety function in accordance with IEC Guide 104 for transformers other than those intended to supply distribution networks, in particular transformers and power supply units intended to allow the application of protective measures against electric shock as defined by TC 64, but in certain cases including the limitation of voltage and horizontal safety function for SELV, in accordance with IEC 60364-4-41.

The group safety function (GSF) is necessary because of responsibility for safety extra-low voltage (SELV) in accordance with IEC 61140:2016, 5.2.6 and IEC 60364-4-41:2017, 414.3.1 or control circuits in accordance with IEC 60204-1:2016, 7.2.4.

The group safety function is needed for each part of IEC 61558-2 because different standards of the IEC 61558 series can be combined in one construction but in certain cases with no limitation of rated output power.

For example, an auto-transformer in accordance with IEC 61558-2-13 can be designed with a separate SELV-circuit in accordance with the particular requirements for IEC 61558-2-6 relating to the general requirements of IEC 61558-1.