
Transformers and inductors for use in telecommunication and electronic equipment - Part 4: Sectional specification for power transformers for switched mode power supplies (SMPS) on the basis of the capability approval procedure (IEC 61248-4:1996)

Transformers and inductors for use in electronic and telecommunication equipment -- Part 4: Sectional specification for power transformers for switched mode power supplies (SMPS) on the basis of the capability approval procedure

iTeh STANDARD PREVIEW

Transformatoren und Drosseln für elektronische und nachrichtentechnische Einrichtungen -- Teil 4: Rahmenspezifikation für Leistungstransformatoren für Schaltnetzteile (SMPS) mit Befähigungsanerkennung

<https://standards.iteh.ai/catalog/standards/sist/e3730d69-e038-43ff-8591-b46099d7ddd/sist-en-61248-4-2002>

Transformateurs et inductances destinés aux équipements électroniques et de télécommunications -- Partie 4: Spécification intermédiaire pour les transformateurs de puissance pour alimentations à découpage (SMPS) sur la base de la procédure de l'agrément de savoir-faire

Ta slovenski standard je istoveten z: EN 61248-4:1997

ICS:

29.180 Transformatorji. Dušilke Transformers. Reactors

SIST EN 61248-4:2002 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61248-4:2002

<https://standards.iteh.ai/catalog/standards/sist/e3730d69-e038-43ff-8591-b46099d7dddf/sist-en-61248-4-2002>

EUROPEAN STANDARD

EN 61248-4

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 1997

ICS 29.180

Descriptors: Power transformers for switched mode power supplies (SMPS), sectional specification, capability approval, preparation of the detail specification, inspection requirements, detail specification

English version

Transformers and inductors for use in electronic and telecommunication equipment
Part 4: Sectional specification for power transformers for switched mode power supplies (SMPS) on the basis of the capability approval procedure
 (IEC 61248-4:1996)

Transformateurs et inductances destinés aux équipements électroniques et de télécommunications
 Partie 4: Spécification intermédiaire pour les transformateurs de puissance pour alimentations à découpage (SMPS) sur la base de la procédure de l'agrément de savoir-faire
 (CEI 61248-4:1996)

Transformatoren und Drosseln für elektronische und nachrichtentechnische Einrichtungen
 Teil 4: Rahmenspezifikation für Leistungstransformatoren für Schaltnetzteile (SMPS) mit Befähigungsanerkennung
 (IEC 61248-4:1996)

This European Standard was approved by CENELEC on 1997-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
 Comité Européen de Normalisation Electrotechnique
 Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of the International Standard IEC 61248-4:1996, prepared by IEC TC 51, Magnetic components and ferrite materials, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 61248-4 on 1997-07-01 without any modification.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1998-06-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1998-06-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annexes A and ZA are normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61248-4:1996 was approved by CENELEC as a European Standard without any modification.

(standards.iteh.ai)

SIST EN 61248-4:2002

<https://standards.iteh.ai/catalog/standards/sist/e3730d69-e038-43ff-8591-b46099d7dddf/sist-en-61248-4-2002>



Annex ZA (normative)

Normative references to international publications
with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC Guide 102	1989	Electronic components - Specification structures for quality assessment (Qualification approval and capability approval)	-	-
IEC QC 001001	1986	Basic rules of the IEC Quality Assessment System for Electronic Components (IECQ)	-	-
A2	1994		-	-
IEC QC 001002	1986	Rules of procedure of the IEC Quality Assessment System for Electronic Components (IECQ)	-	-
A2	1994		-	-
IEC QC 001004	-	Specifications list	-	-
IEC QC 001005	-	Register of firms, products and services approved under the IECQ System, including ISO 9000	-	-
IEC 60068-2-6	1982	Basic environmental testing procedures Part 2: Tests - Test Fc and guidance: Vibration (Sinusoidal)	HD 323.2.6 S2 ¹⁾	1988
IEC 60068-2-20 + A2	1979 1987	Part 2: Tests - Test T: Soldering	HD 323.2.20 S3	1988
IEC 60068-2-21	1983	Part 2: Tests - Test U: Robustness of terminations and integral mounting devices	EN 60068-2-21 ²⁾	1997
A2	1991		A2	1997
A3	1992		A3	1997
IEC 60068-2-27	1987	Part 2: Tests - Test Ea and guidance: Shock	EN 60068-2-27	1993

1) HD 323.2.6 S2 is superseded by EN 60068-2-6:1995, which is based on IEC 60068-2-6:1995.

2) EN 60068-2-21 includes the corrigendum November 1991 and A1:1985 to IEC 60068-2-21.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-29	1987	Part 2: Tests - Test Eb and guidance: Bump...	EN 60068-2-29 ³⁾	1993
IEC 60317-4	1990	Specifications for particular types of winding wires Part 4: Solderable polyurethane enamelled round copper wire, class 130	EN 60317-4	1994
IEC 60367-1	1982	Cores for inductors and transformers for telecommunications Part 1: Measuring methods	-	-
IEC 60410	1973	Sampling plans and procedures for inspection by attributes	-	-
IEC 61007 (mod)	1994	Transformers and inductors for use in electronic and telecommunication equipment - Measuring methods and test procedures	EN 61007	1997
IEC 61248-1	1996	Transformers and inductors for use in electronic and telecommunication equipment Part 1: Generic specification	EN 61248-1	1997
ISO 128	1982	Technical drawings - General principles of presentation	-	-
ISO 129	1985	Technical drawings - Dimensioning General principles, definitions, methods of execution and special indications	-	-

ITeH STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/e3730d69-e038-43ff-8591-846974f0d1e1/sist-en-61248-4-2002>

3) EN 60068-2-29 includes a corrigendum to IEC 60068-2-29.

NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
1248-4
QC 260300

Première édition
First edition
1996-06

**Transformateurs et inductances destinés
aux équipements électroniques et de
télécommunications –**

Partie 4:

**Spécification intermédiaire pour les
transformateurs de puissance pour alimentations
à découpage (SMPS) sur la base de la procédure
de l'agrément de savoir-faire**

<https://standards.iteh.ai/catalog/standards/sist/e3730d69-e038-43ff-8591-b46099d7dddf/sist-en-61248-4-2002>

**Transformers and inductors for use in electronic
and telecommunication equipment –**

Part 4:

**Sectional specification for power transformers
for switched mode power supplies (SMPS) on
the basis of the capability approval procedure**

© CEI 1996 Droits de reproduction réservés — Copyright — all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Bureau Central de la Commission Electrotechnique Internationale 3, rue de Varembe Genève, Suisse



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

S

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

	Page
FOREWORD	5
Clause	
1 Scope	7
2 Normative references	7
3 Preparation of the detail specification	9
3.1 General	11
3.2 Ratings and characteristics	11
3.3 Outline drawings and winding schematic diagram	13
3.4 Information essential for correct system operation	13
4 Inspection requirements to be listed in the detail specification	13
4.1 Conformance inspection	13
4.2 Design verification	13
5 Detail specification	15
Blank detail specification	17
Annex A – Measurement of no-load loss	29

iTeh STANDARD PREVIEW

(standards.iteh.ai)

SIST EN 61248-4:2002

<https://standards.iteh.ai/catalog/standards/sist/e3730d69-e038-43ff-8591-b46099d7dddf/sist-en-61248-4-2002>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**TRANSFORMERS AND INDUCTORS FOR USE IN ELECTRONIC
AND TELECOMMUNICATION EQUIPMENT –****Part 4: Sectional specification for power transformers for
switched mode power supplies (SMPS)
on the basis of the capability approval procedure**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express as nearly as possible an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 1248-4 has been prepared by IEC technical committee 51: Magnetic components and ferrite materials.

This standard is intended for use in the IEC Quality Assessment System for Electronic Components (IECQ).

The operation of the IECQ is governed by IEC QC 001001 and IEC QC 001002. Specifications written for components assessed under this scheme, and their use in the scheme, are the subject of IEC Guide 102.

The text of this standard is based on the following documents:

FDIS	Report on voting
51/401/FDIS	51/430/RVD

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

The QC number that appears on the front cover of this publication is the specification number in the IECQ System.

Annex A forms an integral part of this standard.

TRANSFORMERS AND INDUCTORS FOR USE IN ELECTRONIC AND TELECOMMUNICATION EQUIPMENT –

Part 4: Sectional specification for power transformers for switched mode power supplies (SMPS) on the basis of the capability approval procedure

1 Scope

This part of IEC 1248 specifies how to prepare detail specifications for SMPS power transformers to be released under the terms of IEC 1248-1 (QC 260000) capability approval. It includes a blank detail specification (BDS), which shows the format and indicates which tests are considered to be appropriate to this type of component, although the final selection of tests to be included in the inspection schedule is at the discretion of the specification writer. It also lists appropriate ratings and characteristics.

The components covered by this part of IEC 1248 are used for the transfer of power in conjunction with semi-conductor devices working in a switched mode where the input waveform is sinusoidal or non-sinusoidal, symmetrical or asymmetrical.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

2 Normative references

The following normative documents contain provisions, which, through reference in this text, constitute provisions of this part of IEC 1248. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 1248 are encouraged to investigate the possibility of applying the most recent editions of the normative documents listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC Guide 102: 1989, *Electronic components – Specification structures for quality assessment (Qualification approval and capability approval)*

IEC QC 001001: 1986, *Basic rules of the IEC Quality Assessment System for Electronic Components (IECQ)*
Amendment 2 (1994)

IEC QC 001002: 1986, *Rules of procedure of the IEC Quality Assessment System for Electronic Components (IECQ)*
Amendment 2 (1994)

IEC QC 001004: *Specifications list*

IEC QC 001005: *Register of firms, products and services approved under the IECQ System, including ISO 9000*

IEC 68-2: *Environmental testing – Part 2: Tests*

IEC 68-2-6: 1982, *Environmental testing – Part 2: Tests – Test Fc and guidance: Vibration (sinusoidal)*

IEC 68-2-20: 1979, *Environmental testing – Part 2: Tests – Test T: Soldering*
Amendment 2 (1987)

IEC 68-2-21: 1983, *Environmental testing – Part 2: Tests – Test U: Robustness of terminations and integral mounting devices*
Amendment 2 (1991), Amendment 3 (1992)

IEC 68-2-27: 1987, *Environmental testing – Part 2: Tests – Test Ea and guidance: Shock*

IEC 68-2-29: 1987, *Environmental testing – Part 2: Tests – Test Eb and guidance: Bump*

IEC 317-4: 1990, *Specifications for different types of winding wires – Part 4: Solderable polyurethane enamelled round copper wires, class 130*

IEC 367-1: 1982, *Cores for inductors and transformers for telecommunications – Part 1: Measuring methods*

IEC 410: 1973, *Sampling plans and procedures for inspection by attributes*

IEC 1007: 1994, *Transformers and inductors for use in electronic and telecommunication equipment – Measuring methods and test procedures*

IEC 1248-1: 1996, *Transformers and inductors for use in electronic and telecommunication equipment – Part 1: Generic specification*

ISO 128: 1982, *Technical drawings – General principles of presentation*

ISO 129: 1985, *Technical drawings – Dimensioning – General principles, definitions, methods of execution and special indications*

3 Preparation of the detail specification

This standard is intended to be used for the preparation of detail specifications for SMPS power transformers released under the terms of IEC 1248-1 (QC 260000) capability approval procedure.

It is intended for use by the following originators:

- a) a customer wishing to procure SMPS power transformers that are within the scope of the approved capability of his supplying component manufacturer, for example for detail specifications (DS);
- b) a capability approved manufacturer of SMPS power transformers wishing to prepare specifications for his own products which are within the scope of his capability approval.

NOTES

1 The detail specification should take the form of the BDS shown in clause 5, particularly in respect of the front page format and, in principle, in respect of the presentation of the inspection requirements.

2 Unless otherwise specified, all the tests shown in the BDS, with the exception of the no-load loss test given in annex A, are taken from IEC 1007. Those shown underlined concern operating characteristics of fundamental importance, and it is strongly recommended that these are selected by the specification writer.