SLOVENSKI STANDARD
SIST EN 61185:2002

01-september-2002

Magnetic oxide cores (ETD-cores) intended for use in power supply applications - Dimensions (IEC 61185:1992 + A1:1995)

Magnetic oxide cores (ETD-cores) intended for use in power supply applications - Dimensions

Kerne aus magnetischen Oxiden (ETD-Kerne) für die Stromversorgung - Maße

Noyaux d'oxydes magnétiques (noyaux ETD) destinés à être utilisés dans les alimentations - Dimensions

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29.100.10 Magnetne komponente Magnetic components

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EUROPEAN STANDARD

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Descriptors: Magnetic oxide cores, ETD-cores, coil formers, pin and base, dimensions, marking

English version

Magnetic oxide cores (ETD-cores) intended for use in power supply applications - Dimensions (IEC 1185:1992 + A1:1995)

Noyaux d'oxydes magnétiques (noyaux ETD) destinés à être utilisés dans les alimentations - Dimensions (CEI 1185:1992 + A1:1995)

Kerne aus magnetischen Oxiden (ETD-Kerne) für die Stromversorgung Maße (IEC 1185:1992 + A1:1995)

This European Standard was approved by CENELEC on 1997-03-11. 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 1185:1992 and its amendment 1:1995, prepared by IEC TC 51, Magnetic components and ferrite materials, was submitted to the formal vote and was approved by CENELEC as EN 61185 on 1997-03-11 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) 1998-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1998-03-01

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

Endorsement notice

The text of the International Standard IEC 1185:1992 and its amendment 1:1995 was approved by CENELEC as a European Standard without any modification.

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.

Publication	Year	Title	EN/HD	Year
IEC 205	1966	Calculation of the effective parameters of magnetic piece parts	-	-
IEC 367-1	1982	Cores for inductors and transformers for telecommunications Part 1: Measuring methods	-	-
ISO 370	1975	Toleranced dimensions - Conversion from inches into millimetres and vice versa	-	-

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Noyaux d'oxydes magnétiques (noyaux ETD) destinés à être utilisés dans les alimentations – Dimensions

Magnetic oxide cores (ETD-cores) intended for use in power supply applications – Dimensions

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MAGNETIC OXIDE CORES (ETD-CORES) INTENDED FOR USE IN POWER SUPPLY APPLICATIONS – DIMENSIONS

FOREWORD

1) The IEC (International Electrotechnical Commission) is a world-wide 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, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

3) They have the form of recommendations for international use 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.

International Standard IEC 1185 has been prepared by IEC technical committee 51: Magnetic components and ferrite materials.

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

Six Months' Rule	Report on Voting
51(CO)276	51(CO)285

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

Annexes A, B and C form an integral part of this standard.

MAGNETIC OXIDE CORES (ETD-CORES) INTENDED FOR USE IN POWER SUPPLY APPLICATIONS – DIMENSIONS

1 Scope and object

This International Standard specifies the dimensions that are of importance for mechanical interchangeability for ETD-cores made of magnetic oxides, the essential dimensions of coil formers to be used with them, and the effective parameter values to be used in calculations involving them.

NOTES

1 Whilst this standard mainly applies to magnetic oxide cores, its validity for iron powder cores should not be overlooked.

2 The cores covered by this standard are designed for use in power transformers and chokes operating at high flux density and generally at frequencies higher than those feasible with EC cores of the same material, due to a core proportioning more suitable for high frequency applications. They are generally used in pairs.

The use of "derived" standards which give more detailed specifications of component parts whilst still permitting compliance with this standard is discussed in annex A, which also contains an example of a derived standard for coil formers.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this International Standard 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 205: 1966, *Calculation of the effective parameters of magnetic piece parts*

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

ISO 370: 1975, *Toleranced dimensions – Conversion from inches to millimetres and vice versa*

3 Conversion system

3.1 The original system is the metric system.

3.2 Toleranced dimensions have been converted by applying the rules of method A of ISO 370*.

No rule is laid down for the conversion of the nominal value, but in cases where the converted dimensions are given as a nominal dimension with symmetrical tolerance, it is normal practice to state that nominal value with the same number of decimal places as the limits.

3.3 Single-limit millimetre dimensions (minimum or maximum) have been converted by applying the appropriate conversion table of ISO 370 and rounding to two more decimal places than the original value in a given column relating to a particular dimension.

4 Primary standards

Compliance with the following requirements ensures mechanical interchangeability of complete assemblies and coil formers.

4.1 *Dimensions of ETD-cores*

4.1.1 *Principal dimensions*

The principal dimensions of ETD-cores shall be given in table 1.

NOTE - The dimensions of the cores may be checked by means of gauges. By way of example, a possible standard for these gauges is given in annex B. In order to facilitate production it may be necessary to use gauges having dimensions differing from those given in annex B, although no relaxation of the requirements for the dimensions of the cores given in table 1 is permitted.

4.1.2 *Effective parameter and A_{min} values*

The effective parameter values of a pair of cores whose dimensions comply with 4.1.1 shall be as given in table 2 (see IEC 205 for definitions of these parameters and their calculation; and item 3 of subclause 17.6 of IEC 367-1, for the definition of A_{min}).

4.2 *Dimensional limits for coil formers*

The essential dimensions of coil formers suitable for use with a pair of ETD-cores shall be as given in table 3.

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* For practical cases, the converted dimensions will normally be given with not more than three decimal places. The conversion rules may, however, result in more than three decimal places in order to keep the tolerance loss at a minimum.

In general, it is left to the users of this standard to apply further rounding, but such further rounding has been introduced where it would not cause the two original millimetre limits to be exceeded by more than 2,5 % of the tolerance (i.e. the difference between the two limits).