SLOVENSKI STANDARD
SIST EN 60431:2002

01-september-2002

Dimensions of square cores (RM-cores) made of magnetic oxides and associated parts (IEC 60431:1983 + A1:1995)

Dimensions of square cores (RM-cores) made of magnetic oxides and associated parts

Maße quadratischer Kerne (RM-Kerne) aus magnetischen Oxiden und deren Zubehörteile

Dimensions des noyaux carrés (noyaux RM) en oxydes magnétiques et pièces associées

Ta slovenski standard je istoveten z: **EN 60431:1997**

ICS:

29.100.10 Magnetne komponente Magnetic components

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EUROPEAN STANDARD

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English version

Dimensions of square cores (RM-cores) made of magnetic oxides and associated parts (IEC 431:1983 + A1:1995)

Dimensions des noyaux carrés (noyaux RM) en oxydes magnétiques et pièces associées (CEI 431:1983 + A1:1995)

Rechteck-Kerne (RM) aus magnetischen Oxiden Maße und Zubehör (IEC 431:1983 + 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

Ref. No. EN 60431:1997 E

Foreword

The text of the International Standard IEC 431:1983 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 60431 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.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative and annexes A, B and C are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 431:1993 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 97	1970[1]	Grid system for printed circuits	-	-
IEC 133	1967	Dimensions for pot-cores made of ferromagnetic oxides and associated parts	-	-
IEC 317-2	1970[2]	Specifications for particular types of winding wires Part 2: Heat of solvent bonding self-fluxing enamelled round copper wires	-	-
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	-	-

1) IEC 97:1991 is harmonized as EN 60097:1993.

2) IEC 317-2:1990 is harmonized as EN 60317-2:1994.

NORME INTERNATIONALE

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Dimensions des noyaux carrés (noyaux RM) en oxydes magnétiques et pièces associées

Dimensions of square cores (RM-cores) made of magnetic oxides and associated parts

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

DIMENSIONS OF SQUARE CORES (RM-CORES) MADE OF MAGNETIC OXIDES AND ASSOCIATED PARTS

FOREWORD

1) 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.
2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendations and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

PREFACE TO THE FIRST EDITION

This standard has been prepared by IEC Technical Committee No. 51: Magnetic Components and Ferrite Materials.

A first draft was discussed at meetings held in London in 1968 and in Washington in 1970.

As a result of this latter meeting, a draft, Document 51(Central Office)100, was submitted to the National Committees for approval under the Six Months' Rule in January 1971. The comments received were discussed at the meeting held in Leningrad in 1971. Amendments, Document 51(Central Office)128, were submitted to the National Committees for approval under the Two Months' Procedure in March 1972.

The National Committees of the following countries voted explicitly in favour of publication:

Australia	Israel	Romania
Belgium	Italy	Sweden
Canada	Japan	Switzerland
Denmark	Netherlands	Turkey
France	Poland	United Kingdom
Germany	Portugal	United States of America

A first draft for Sub-clauses 3.5, 3.7 and 3.8 was discussed at the meetings held in Leningrad in 1971 and in Zurich in 1974. As a result of this latter meeting, a draft, Document 51(Central Office)159, was submitted to the National Committees for approval under the Six Months' Rule in November 1974.

The following countries voted explicitly in favour of publication of Sub-clauses 3.4 to 3.6:

Canada	Italy	Switzerland
Denmark	Japan	Turkey
France	Netherlands	Union of Soviet Socialist Republics
Germany	Poland	United Kingdom
Hungary	Romania	United States of America
Israel	Spain	

A first draft for Clause 5 was discussed at the meetings held in Washington in 1970, in Leningrad in 1971 and in Zurich in 1974. As a result of this latter meeting, a draft, Document 51(Central Office)160, was submitted to the National Committees for approval under the Six Months' Rule in November 1974.

The following countries voted explicitly in favour of publication of Clause 5:

Canada	Japan	Turkey
Denmark	Netherlands	Union of Soviet Socialist Republics
France	Poland	United Kingdom
Germany	Romania	United States of America
Hungary	Spain	
Israel	Sweden	
Italy	Switzerland	

A first draft for Sub-clause 3.3 and an example of a possible standard for coil formers for RM-cores was discussed at meetings held in Zurich in 1974 and in The Hague in 1975. As a result of this latter meeting, a draft, Document 51(Central Office)188, was submitted to the National Committees for approval under the Six Months' Rule in August 1976.

The following countries voted explicitly in favour of publication of Sub-clause 3.3 and the example of a possible standard for coil formers for RM-cores:

Austria	Hungary	Spain
Belgium	Italy	Sweden
Canada	Japan	Switzerland
Denmark	Netherlands	Turkey
Egypt	Poland	United Kingdom
France	Romania	United States of America
Germany	South Africa (Republic of)	Yugoslavia

A first draft for an extension of Table I was discussed at meetings held in Zurich in 1974 and in The Hague in 1975. As a result of this latter meeting, a draft, Document 51(Central Office)189, was submitted to the National Committees for approval under the Six Months' Rule in August 1976.

The following countries voted explicitly in favour of publication of the further limiting values for Table I:

Austria	Hungary	Spain
Belgium	Italy	Sweden
Canada	Japan	Switzerland
Denmark	Netherlands	Turkey
Egypt	Poland	United Kingdom
France	Romania	United States of America
Germany	South Africa (Republic of)	Yugoslavia

PREFACE TO THE SECOND EDITION

This standard has been prepared by IEC Technical Committee No. 51: Magnetic Components and Ferrite Materials.

It forms the second edition of IEC Publication 431, which includes the first edition (1973), the First Supplement (Publication 431A) issued in 1976, and the Second Supplement (Publication 431B) issued in 1978.

A first draft containing the effective parameter values given in Table IV was discussed at the meeting held in Budapest in 1977. As a result of this meeting, a draft, Document 51(Central Office)209, was submitted to the National Committees for approval under the Six Months' Rule in December 1977.

The National Committees of the following countries voted explicitly in favour of publication of the data contained in Table IV:

Austria	Italy	Turkey
Belgium	Japan	Union of Soviet Socialist Republics
Brazil	Poland	United Kingdom
Canada	South Africa (Republic of)	United States of America
Denmark	Spain	
Egypt	Sweden	
France	Switzerland	

Other IEC publications quoted in this standard:

Publications Nos. 97: Grid-System for Printed Circuits.
133: Dimensions for Pot-cores Made of Ferromagnetic Oxides and Associated Parts.
317-2: Specifications for Particular Types of Winding Wires, Part 2: Heat or Solvent Bonding Self-fluxing Enamelled Round Copper Wires.
367-1: Cores for Inductors and Transformers for Telecommunications, Part 1: Measuring Methods.

Other publication quoted:

ISO Standard: 370: Toleranced Dimensions — Conversion from Inches into Millimetres and Vice Versa.

DIMENSIONS OF SQUARE CORES (RM-CORES) MADE OF MAGNETIC OXIDES AND ASSOCIATED PARTS

1. Scope

This standard specifies the dimensions that are of importance for mechanical interchangeability for a preferred range of square cores (RM-cores) made of magnetic oxides, the dimensional limits for wound coil formers to be used with these cores and the locations of their terminal pins on a 2.54 mm printed wiring grid in relation to the base outlines of the cores. It also specifies the main parameters of a range of standard inductance measuring coils to be used for test purposes.

The general considerations upon which the design of this range of cores is based are given in Appendix A.

2. Conversion system

2.1 The original system is the metric system.

2.2 Toleranced dimensions have been converted by applying the rules of Method A of ISO Standard 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.

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

3. Primary standards

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

3.1 *Pin locations and base outlines*

These shall be as shown in Figure 1, page 20, in which the base is viewed from the pin side, i.e. from the underside of the printed wiring boards.

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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).

The pins shall fit into holes according to IEC Publication 97: Grid System for Printed Circuits, the nominal hole diameter being:

— 1 mm (0.039 in) when the shortest distance between pins is 2.54 mm (0.1 in).

— 1.3 mm (0.051 in) when the shortest distance between pins is 2.54 $\sqrt{2}$ mm (0.1 $\sqrt{2}$ in) or more.

3.2 *Dimensions of square cores*

The dimensions shall be as given in Table I.