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Ferrite cores – Dimensions –

Part 8:
E-cores

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards. Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62317-8 has been prepared IEC technical committee 51: Magnetic components and ferrite materials.

This standard cancels and replaces IEC 61246 published in 1994, its amendment 1 (2002) and replaces Table A.1 and Table B.1 of IEC 62358:2004. New rectangular centre leg E-cores, which have been developed in the industry, were introduced in IEC 62358, and are in widespread use. This standard has been revised to specify dimensions and effective parameters for these newer rectangular centre leg E-cores.

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

FDIS	Report on voting
51/864/FDIS	51/872/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

IEC 62317 consists of the following parts, under the general title *Ferrite cores – Dimensions*:

Part 1: General specification (under consideration)

Part 2: Pot cores (under consideration, currently available as IEC 60133: Dimensions of pot-cores made of magnetic oxides and associated parts)

Part 3: Half pot cores (under consideration, currently available as IEC 62323: Dimensions of half pot-cores made of ferrite for inductive proximity switches)

Part 4: RM-cores and associated parts

Part 5: EP-cores (under consideration, currently available as IEC 61596: Magnetic oxide EP-cores and associated parts for use in inductors and transformers – Dimensions)

Part 6: ETD-cores (under consideration, currently available as IEC 61185: Ferrite cores (ETD-cores) intended for use in power supply applications – Dimensions)

Part 7: EER-cores

Part 8: E-cores

Part 9: Planar cores

Part 10: PM-cores (under consideration, currently available as IEC 61247: PM-cores made of magnetic oxides and associated parts – Dimensions)

Part 11: EC-cores (under consideration, currently available as IEC 60647: Dimensions for magnetic oxide cores intended for use in power supplies (EC-cores))

Part 12: Uncoated ring cores (under consideration, currently available as IEC TR 61604: Dimensions of uncoated ring cores of magnetic oxides)

Part 13: PQ-cores (under consideration)

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

A bilingual version of this publication may be issued at a later date.

FERRITE CORES – DIMENSIONS –

Part 8: E-cores

1 Scope

This part of IEC 62317 specifies the dimensions that are of importance for mechanical interchangeability for E-cores with rectangular cross-section made of ferrite, the dimensions of coil formers to be used with them, and the effective parameter values to be used in calculations involving them.

The selecting core sizes to this standard is based on the philosophy of including those sizes, which are industrial standards, either by inclusion in national standards, or by broad-based use in industry. See IEC 62317-1 for more detail concerning the philosophy of selecting core sizes to be included.

NOTE Cores covered by this standard are intended for general applications at both low and high flux densities, but they also find uses in special applications such as pulse transformers. They are generally used in pairs.

Whilst the main application of this standard is expected to be for ferrite cores, its validity for iron powder cores should not be overlooked.

Coil formers are not specified for E-cores smaller than E 8/2, which are also used in SMD assemblies.

The use of “derived” standards, which give a more detailed specification of component parts whilst still permitting compliance with this standard, is discussed in Annex A.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60205:2006, *Calculation of the effective parameters of magnetic piece parts*

3 Primary standards

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

3.1 Dimensions of E-cores with rectangular cross-section

3.1.1 Main dimensions

The main dimensions of E-cores with rectangular cross-section shall be as given in Table 1.

NOTE The dimensions of the cores may be checked by means of gauges, an example of which 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 thereby permitted.

3.1.2 Effective parameter and A_{min} values

The effective parameter and A_{min} values of a pair of cores whose dimensions comply with 3.1.1 shall be as given in Table 2 (see IEC 60205, for the definitions of these parameters and their calculation; and 2.2 of IEC 60205, for the definition of A_{min}).