SLOVENSKI STANDARD
SIST EN 125500:2002

01-september-2002

Sectional specification: Magnetic oxide ring cores for interference suppression and low level signal transformer application

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Rahmenspezifikation: Ferritringkerne für Entstörfilter und Breitbandübertrageranwendungen

Spécification intermédiaire: Noyaux toriques en oxyde magnétique pour applications d'antiparasitage et transformateurs faibles signaux

Ta slovenski standard je istoveten z: **EN 125500:1996**

ICS:

29.100.10 Magnetne komponente Magnetic components

SIST EN 125500:2002 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 125500

June 1996

ICS 29.100.10

Descriptors: Magnetic oxide ring cores, interference suppression, low level signal transformer, identification, marking, characteristics

English version

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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 125500:1996 E

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Foreword

This European Standard was prepared by the Technical Committee CENELEC/TC CECC/SC 51X, Magnetic components: Cores and soft magnetic materials.

It is based, wherever possible, on the publications of the International Electrotechnical Commission and in particular on IEC 367, Cores for inductors and transformers for telecommunications.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 125500 on 1995-07-04.

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) 1996-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-09-01

1 Scope

This Sectional Specification prescribes the characteristics, ratings and inspection requirements of assessed quality for ring cores made of soft magnetic oxides and iron powders. Such cores are intended for chokes for interference suppression and also for low level signal transformers for professional and industrial applications (see note below). In order to increase winding ease and to improve voltage breakdown, the cores are often provided with protective coatings.

In annex A methods for testing voltage breakdown are given.; in annex B a standard series of ring cores is listed.

NOTE: Ring cores used for power application are covered by CECC 25 300. Ring cores used for other applications (e.g. pulse, memory storage) are not considered here.

It selects from the Generic Specification CECC 25 000, the appropriate methods of test to be used in Detail Specifications derived from this specification, and contains the test schedules to be used in the preparation of such specifications. Each test schedule, referenced by a CECC number, when taken with the appropriate information in clause 5 of this specification, forms a Blank Detail Specification.

2 General

2.1 Related documents

Document CECC 25 000 and any other reference documents, as appropriate.

2.2 Classification

A core is classified by :

- shape : ring core (form of cross section may be different)
- size : e.g. 10 x 6 x 4 mm
- grade : (combined electromagnetic properties, e.g. initial permeability as function of temperature and frequency).

  Since no systematic classification of the electromagnetic properties is available in the CECC, each Detail Specification shall clearly define the grade to which it applies. It may also state the appropriate grade designation.
- insulation : (if required) e.g. by coating

Normally, a Detail Specification will cover cores of one shape, size, grade and insulation.

3 Quality assessment procedures

The tests given in table 1 shall be included in each Detail Specification for magnetic oxide ring cores.

These tests shall be carried out in accordance with measuring methods presented in clauses 2 and 4 of CECC 25 000.

Table 1: Quality conformance inspection

Group	Test	Inspection level	AQL %
A lot by lot	Visual examination, Marking	I	1
	Dimensions	I	1
	Low frequency properties : . Inductance factor (A_L) . Loss factor (tgδ/μ) or Quality factor (Q) (if required)	 I S3	 1 4
	High frequency properties, if required : . Inductance factor (A_L) . Parallel resistance (R_p)	 I S3	 1 4
B lot by lot	voltage breakdown (U) (only for insulated ring cores)	I	1

4 Additional information

Additional information in the form of curves and graphs may be given by the manufacturers. This should not be used for inspection purposes.

5 Blank Detail Specification

The following information should be included in each Detail Specification together with the required values.

The general data necessary to identify the harmonized Detail Specification and the component shall preferably be presented as shown in 5.9.

Numbers between square brackets on page 8 correspond to indications given in 5.1 and 5.2.

5.1 Identification of the harmonized Detail Specification

The name of the National Standards Organization under whose authority the Detail Specification is drafted. [1]

The CECC number of the relevant Blank Detail Specification allotted by the CECC General Secretariat. [2]

The number and issue number of the national Generic Specification. [3]

The national number of the Detail Specification, date of issue and any further information required by the national system. [4]

5.2 Identification of the core

Magnetic oxide ring core for interference suppression and low level signal transformer applications and the grade of material. [5]

Typical construction (core shape, size and type of insulation). [6]

Detail drawing and dimensions (cf. 5.5.2), showing the outlines of the edges. [7]

Application or group of applications covered by the Detail Specification. [8]

5.3 Limiting conditions (not for inspection purposes)

- Operating conditions :

  Any mechanical or environmental conditions which shall not be exceeded, shall be stated as absolute values, e.g. temperature range for initial permeability or frequency range, climatic category rating (IEC 68-1).

  Any known interdependence of these conditions shall also be stated.

- Storage conditions :

  1) for uninsulated magnetic oxide cores : e.g. - 55°C to + 100°C

  2) for insulated magnetic oxide cores, depending on the type of insulation, a restricted temperature range may be required.

5.4 Marking of components and package

5.4.1 Component (minimum information)

- grade or designation of material (e.g. indicated by a colour coding)

5.4.2 Package (minimum information in the following sequence)

- Detail Specification reference
- Manufacturer's component designation reference and name of manufacturer or trademark
- Manufacturer batch identification code
- Quantity
- A_L value

5.5 Characteristics

5.5.1 Visual inspection

The conditions, workmanship and finish shall be satisfactory as determinated by visual examination. The permissibility of any physical imperfections shall be judged on the basis of IEC 424. Sharp edges are not allowed.

5.5.2 Dimensions

Dimensions must be in accordance with the relevant drawings.

5.5.3 Effective parameters

The effective parameters are calculated in accordance with IEC 205.

5.5.4 Electrical properties

5.5.4.1 Low frequency properties

5.5.4.1.1 AL, Specify winding, *B*, f, T ;
indicate U (test according to 4.3, 4.5 and 4.6 of CECC 25 000).

5.5.4.1.2 if required, $\tan\delta_{r+F}$ or $\tan\delta_{r+F} / \mu_i$

specify winding, f, *B*, N ;
indicate U (test according to 4.10.4 of CECC 25 000)

5.5.4.2 High frequency properties, if required

5.5.4.2.1 A_L, specify winding, *B*, f, T ;
indicate U (test according to 4.3, 4.5 and 4.6 of CECC 25 000

5.5.4.2.2 $\tan\delta_{r+F}$ or $\tan\delta_{r+F} / \mu_i$
(test according to 4.10.4 of CECC 25 000) or R_p.

Specify winding, f, *B* ; indicate U.

5.5.4.3 Voltage breakdown, only for insulated cores

Specify U (kV) and the measuring method (see Annex A).

5.6 Certified test records

According to 3.6 of CECC 25 000, the certified test records shall contain attributes information from Group B test.

When Certified test records are not required for the Detail Specification, this shall be included by the statement : "Not applicable".

5.7 Additional information

As appropriate : e.g. application information

5.8 Ordering information

5.8.1 Detail Specification reference

5.8.2 Manufacturer's component designation reference

5.8.3 Other information specified by the manufacturer to identify the product

5.8.4 A_L value

5.9 Format of the Detail Specification CECC 25 501

(see pages 8 to 11)