Vahelduvvoolumootorite kondensaatorid. Osa 1: Üldnõuded. Talitlus, katsetamine ja nimisuurused. Ohutusnõuded. Paigaldamis- ja talitlusjuhised

AC motor capacitors - Part 1: General - Performance, testing and rating - Safety requirements - Guidance for installation and operation

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60252-1:2011 sisaldab Euroopa standardi EN 60252-1:2011 ingliskeelset teksti.	This Estonian standard EVS-EN 60252-1:2011 consists of the English text of the European standard EN 60252-1:2011.
Standard on kinnitatud Eesti Standardikeskuse 28.02.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 28.02.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 04.02.2011.	Date of Availability of the European standard text 04.02.2011.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 31.060.30, 31.060.70

alternating current, definition, definitions, electrical engineering, instructions of installation, motor capacitors, operating instructions, overload capacity, quality requirements, ratings, safety regulations, testing

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60252-1

February 2011

ICS 31.060.30; 31.060.70

Supersedes EN 60252-1:2001

English version

AC motor capacitors - Part 1: General - Performance, testing and rating - Safety requirements - Guidance for installation and operation

(IEC 60252-1:2010)

Condensateurs des moteurs à courant alternatif -
Partie 1: Généralités -
Caractéristiques fonctionnelles, essais et valeurs assignées -
Règles de sécurité -
Lignes directrices pour l'installation et l'utilisation
(CEI 60252-1:2010)

Motorkondensatoren -
Teil 1: Allgemeines -
Leistung, Prüfung und Bemessung -
Sicherheitsanforderungen -
Leitfaden für die Installation und den Betrieb
(IEC 60252-1:2010)

This European Standard was approved by CENELEC on 2011-01-02. 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, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 60252-1:2011 E

Foreword

The text of document 33/470/FDIS, future edition 2 of IEC 60252-1, prepared by IEC TC 33, Power capacitors, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60252-1 on 2011-01-02.

This European Standard supersedes EN 60252-1:2001.

This EN 60252-1:2011 includes the following significant technical changes with respect to EN 60252-1:2001:

– the definition of "segmented capacitors" has been added, in 3.6;

– the definition of "classes of operation" has been clarified, with the addition of the concept of "probable life" with reference to statistics, in 3.9;

– the following wording "Operation above the rated voltage will reduce the life expectancy of the capacitor" has been introduced in 6.1;

– some clarifications have been added to Clause 8, Marking, mainly for small capacitors.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

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)	2011-10-02
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-01-02

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60252-1:2010 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60110-1:1998	NOTE	Harmonized as EN 60110-1:1998 (not modified).
IEC 60143-1:2004	NOTE	Harmonized as EN 60143-1:2004 (not modified).
IEC 60252-2	NOTE	Harmonized as EN 60252-2.
IEC 60871-1:2005	NOTE	Harmonized as EN 60871-1:2005 (not modified).
IEC 60931-1:1996	NOTE	Harmonized as EN 60931-1:1996 (not modified).
IEC 61048:2006	NOTE	Harmonized as EN 61048:2006 (not modified).
IEC 61071:2007	NOTE	Harmonized as EN 61071:2007 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

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 60062	-	Marking codes for resistors and capacitors	EN 60062	-
IEC 60068	Series	Environmental testing	EN 60068	Series
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-20	-	Environmental testing - Part 2-20: Tests - Test T: Test methods for solderability and resistance to soldering heat of devices with leads	EN 60068-2-20	-
IEC 60068-2-21	-	Environmental testing - Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices	EN 60068-2-21	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60112	-	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	-
IEC 60309-1	-	Plugs, socket-outlets and couplers for industrial purposes - Part 1: General requirements	EN 60309-1	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)		-
IEC 60695-2-10	-	Fire hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	-
IEC 60695-2-11	-	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	EN 60695-2-11	-
ISO 4046	-	Paper, board, pulp and related terms - Vocabulary	-	-

CONTENTS

AC MOTOR CAPACITORS –

Part 1: General – Performance, testing and rating – Safety requirements – Guidance for installation and operation

1 Scope and object

This part of IEC 60252 applies to motor capacitors intended for connection to windings of asynchronous motors supplied from a single-phase system having a frequency up to and including 100 Hz, and to capacitors to be connected to three-phase asynchronous motors so that these motors may be supplied from a single-phase system.

This standard covers impregnated or unimpregnated capacitors having a dielectric of paper, plastic film, or a combination of both, either metallized or with metal-foil electrodes, with rated voltages up to and including 660 V.

Motor start capacitors are covered by IEC 60252-2.

NOTE The following are excluded from this standard:

– shunt capacitors of the self-healing type for a.c. power systems of up to and including 1 000 V nominal voltage (see IEC 60831-1);
– shunt capacitors of non-self-healing type for a.c. power systems of up to and including 1 000 V nominal voltage (see IEC 60931-1);
– shunt capacitors for a.c. power systems having a nominal voltage above 1 000 V (see IEC 60871-1);
– capacitors for induction heat-generating plants, operating at frequencies between 40 Hz and 24 000 Hz (see IEC 60110-1);
– series capacitors (see IEC 60143);
– coupling capacitors and capacitor dividers (see IEC 60358);
– capacitors to be used in power electronic circuits (see IEC 61071);
– small a.c. capacitors to be used for fluorescent and discharge lamps (see IEC 61048);
– capacitors for suppression of radio interference (IEC publication under consideration);
– capacitors intended to be used in various types of electrical equipment and thus considered as components;
– capacitors intended for use with d.c. voltage superimposed on a.c. voltage.

The object of this standard is

a) to formulate uniform rules regarding performance, testing and rating;
b) to formulate specific safety rules;
c) to provide a guidance for installation and operation.

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 60062, *Marking codes for resistors and capacitors*

IEC 60068 (all parts), *Environmental testing*

IEC 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-20, *Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads*

IEC 60068-2-21, *Environmental testing – Part 2-21: Tests – Test U: Robustness of terminations and integral mounting devices*

IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 60112, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60309-1, *Plugs, socket-outlets and couplers for industrial purposes – Part 1: General requirements*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60695-2-10, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60695-2-11,*Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end products*

ISO 4046, *Paper, board, pulps and related terms – Vocabulary*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
motor running capacitor
a power capacitor which, when used in conjunction with an auxiliary winding of a motor, assists the motor to start and improves the torque under running conditions

NOTE The running capacitor is usually connected permanently to the motor winding and remains in circuit throughout the running period of the motor. During the starting period, if it is in parallel with the starting capacitor, it helps to start the motor.

3.2
motor starting capacitor
a power capacitor which provides a leading current to an auxiliary winding of a motor and which is switched out of circuit once the motor is running

3.3
metal foil capacitor
a capacitor, the electrodes of which consist of metal foils or strips separated by a dielectric

3.4
metallized capacitor
a capacitor, in which the electrodes consist of a metallic deposit on the dielectric

3.5
self-healing capacitor
a capacitor, the electrical properties of which, after local breakdown of the dielectric, are rapidly and essentially self-restored