



SLOVENSKI STANDARD

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01-april-2016

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SIST EN 62391-1:2006

Nespremenljivi električni dvoplastni kondenzatorji za električno in elektronsko opremo - 1. del: Rodovna specifikacija

Fixed electric double-layer capacitors for use in electric and electronic equipment - Part 1: Generic specification

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Condensateurs électriques fixes à double couche utilisés dans les équipements électriques et électroniques - Partie 1: Spécification générique

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ICS:

31.060.10 Fiksni kondenzatorji Fixed capacitors

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EUROPEAN STANDARD

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NORME EUROPÉENNE

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February 2016

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Supersedes EN 62391-1:2006

English Version

**Fixed electric double-layer capacitors for use in electric and
electronic equipment - Part 1: Generic specification
(IEC 62391-1:2015)**

Condensateurs électriques fixes à double couche utilisés
dans les équipements électriques et électroniques -
Partie 1: Spécification générique
(IEC 62391-1:2015)

Elektrische Doppelschichtkondensatoren zur Verwendung
in elektrischen und elektronischen Geräten -
Teil 1: Fachgrundspezifikation
(IEC 62391-1:2015)

This European Standard was approved by CENELEC on 2015-11-27. 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.

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SIST EN 62391-1:2016

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

EN 62391-1:2016**European foreword**

The text of document 40/2393/FDIS, future edition 2 of IEC 62391-1, prepared by IEC/TC 40 "Capacitors and resistors for electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62391-1:2016.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-08-27
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-11-27

This document supersedes EN 62391-1:2006.

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

IEC 60068-2-47:2005	NOTE	Harmonized as EN 60068-2-47:2005 (not modified).
IEC 60384-1:2008	NOTE	Harmonized as EN 60384-1:2009 (not modified).
IEC 61881-3:2012	NOTE	Harmonized as EN 61881-3:2012 (not modified).
IEC 62391-1:2006	NOTE	Harmonized as EN 62391-1:2006 ¹⁾ (not modified).
IEC 62391-2:2006	NOTE	Harmonized as EN 62391-2:2006 (not modified).
IEC 62391-2-1:2006	NOTE	Harmonized as EN 62391-2-1:2006 (not modified).
IEC 62576:2009	NOTE	Harmonized as EN 62576:2010 (not modified).
ISO 80000-1:2009	NOTE	Harmonized as EN ISO 80000-1:2013 (not modified).

¹⁾ Superseded by EN 62391-1:2015 (IEC 62391-1:2015).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60027	series	Letter symbols to be used in electrical technology	EN 60027	series
IEC 60050	series	International Electrotechnical Vocabulary	-	-
IEC 60062	-	Marking codes for resistors and capacitors	EN 60062	-
IEC 60063	-	Preferred number series for resistors and capacitors	EN 60063	-
IEC 60068-1	2013	Environmental testing - Part 1: General and guidance	EN 60068-1	2014
IEC 60068-2-1	2007	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	2007
IEC 60068-2-2	2007	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	2007
IEC 60068-2-6	2007	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	2008
IEC 60068-2-14	2009	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	2009
IEC 60068-2-20	2008	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	2008
IEC 60068-2-21	2006	Environmental testing - Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices	EN 60068-2-21	2006
IEC 60068-2-45	1980	Basic environmental testing procedures - Part 2-45: Tests - Test XA and guidance: Immersion in cleaning solvents	EN 60068-2-45	1992
+A1	1993		+A1	1993
IEC 60068-2-54	2006	Environmental testing - Part 2-54: Tests - Test Ta: Solderability testing of electronic components by the wetting balance method	EN 60068-2-54	2006

EN 62391-1:2016

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-58	2015	Environmental testing - Part 2-58: Tests - Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)	EN 60068-2-58	2015
IEC 60068-2-69	2007	Environmental testing - Part 2: Tests - Test Te: Solderability testing of electronic components for surface mounting devices (SMD) by the wetting balance method	EN 60068-2-69	2007
IEC 60068-2-78	2012	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	2013
IEC 60294	2012	Measurement of the dimensions of a cylindrical component with axial terminations	EN 60294	2012
IEC 60617-DB	-	Graphical symbols for diagrams	-	-
IEC 60695-11-5	-	Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	-
IEC 60717	2012	Method for the determination of the space required by capacitors and resistors with unidirectional terminations	EN 60717	2012
IEC 61193-2	-	Quality assessment systems - Part 2: Selection and use of sampling plans for inspection of electronic components and packages	EN 61193-2	-



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**Fixed electric double-layer capacitors for use in electric and electronic equipment –
Part 1: Generic specification**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

—————

**FIXED ELECTRIC DOUBLE-LAYER CAPACITORS
FOR USE IN ELECTRIC AND ELECTRONIC EQUIPMENT –**
Part 1: Generic specification**FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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 62391-1 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment.

This second edition cancels and replaces the first edition published in 2006 and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) enhancement of the scope to include electric (high power) application;
- b) implementation of Annex Q, replacing Clause 3 in the first edition;
- c) in addition, minor revisions related to tables, figures and references.

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

FDIS	Report on voting
40/2393/FDIS	40/2415/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.

A list of all parts of IEC 62391 under the general title *Fixed electric double-layer capacitors for use in electric and electronic equipment* can be found in the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

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

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FIXED ELECTRIC DOUBLE-LAYER CAPACITORS FOR USE IN ELECTRIC AND ELECTRONIC EQUIPMENT –

Part 1: Generic specification

1 Scope

This part of IEC 62391 applies to fixed electric double-layer capacitors (hereafter referred to as capacitor(s)) mainly used in d.c. circuits of electric and electronic equipment.

This part of IEC 62391 establishes standard terms, inspection procedures and methods of test for use in sectional and detail specifications of electronic components for quality assessment or any other purpose.

2 Normative references

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

IEC 60027 (all parts), *Letter symbols to be used in electrical technology*

IEC 60050 (all parts), *International Electrotechnical Vocabulary*
<https://standards.iteh.ai/catalog/standards/sist/a2240cb8-d823-4bf0-8f42-6ad24bcdabd7/sist-en-62391-1-2016>

IEC 60062, *Marking codes for resistors and capacitors*

IEC 60063, *Preferred number series for resistors and capacitors*

IEC 60068-1:2013, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-1:2007, *Environmental testing – Part 2-1: Tests – Tests A: Cold*

IEC 60068-2-2:2007, *Environmental testing – Part 2-2: Tests – Tests B: Dry Heat*

IEC 60068-2-6:2007, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-14:2009, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-20:2008, *Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices of with leads*

IEC 60068-2-21:2006, *Environmental testing – Part 2-21: Tests – Test U: Robustness of terminations and integral mounting devices*

IEC 60068-2-45:1980, *Environmental testing – Part 2-45: Tests – Test XA and guidance: Immersion in cleaning solvents*
Amendment 1:1993)