ICS 31.060.10 SLOVENSKÁ TECHNICKÁ NORMA Júl 2025

| STN | **Nepremenné elektrické dvojvrstvové kondenzátory na použitie v elektronických zariadeniach Časť 2: Čiastková špecifikácia Elektrické dvojvrstvové kondenzátory na výkonové aplikácie** | **STN EN IEC 62391-2** 35 8225 |
|---|---|---|

Fixed electric double-layer capacitors for use in electronic equipment - Part 2: Sectional specification - Electric double-layer capacitors for power application

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/25

Obsahuje: EN IEC 62391-2:2025, IEC 62391-2:2025

Oznámením tejto normy sa od 30.04.2028 ruší
STN EN 62391-2 (35 8225) z februára 2007

**140637**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN IEC 62391-2

April 2025

ICS 31.060.10

Supersedes EN 62391-2:2006

English Version

# Fixed electric double-layer capacitors for use in electronic equipment - Part 2: Sectional specification - Electric double-layer capacitors for power application (IEC 62391-2:2025)

Condensateurs électriques fixes à double couche utilisés dans les équipements électriques et électroniques - Partie 2: Spécification intermédiaire - Condensateurs électriques à double couche pour application de puissance (IEC 62391-2:2025)

Elektrische Doppelschichtfestkondensatoren zur Verwendung in Geräten der Elektronik - Teil 2: Rahmenspezifikation: Elektrische Doppelschichtfestkondensatoren für Leistungsanwendungen (IEC 62391-2:2025)

This European Standard was approved by CENELEC on 2025-03-20. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**



Ref. No. EN IEC 62391-2:2025 E

# European foreword

The text of document 40/3193/FDIS, future edition 2 of IEC 62391-2, prepared by TC 40 “Capacitors and resistors for electronic equipment” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62391-2:2025.

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) 2026-04-30
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2028-04-30

This document supersedes EN 62391-2:2006 and all of its amendments and corrigenda (if any).

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

This document is read in conjunction with EN IEC 62391-1:2022.

Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

## Endorsement notice

The text of the International Standard IEC 62391-2:2025 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 standard indicated:

| | | |
|---|---|---|
| IEC 60063 | NOTE | Approved as EN 60063 |
| IEC 60068-1:2013 | NOTE | Approved as EN 60068-1:2014 (not modified) |

# Annex ZA
(normative)

## Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where 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.cencenelec.eu.

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| IEC 60068-2–6 | 2007 | Environmental testing - Part 2–6: Tests - Test Fc: Vibration (sinusoidal) | EN 60068-2–6 | 2008 |
| IEC 60068-2–14 | 2023 | Environmental testing - Part 2–14: Tests - Test N: Change of temperature | EN IEC 60068-2–14 | 2023 |
| IEC 60068-2–20 | 2021 | Environmental testing - Part 2–20: Tests - Test Ta and Tb: Test methods for solderability and resistance to soldering heat of devices with leads | EN IEC 60068-2–20 | 2021 |
| IEC 60417 | - | Graphical symbols for use on equipment. Index, survey and compilation of the single sheets. | - | - |
| IEC 61193-2 | 2007 | Quality assessment systems - Part 2: Selection and use of sampling plans for inspection of electronic components and packages | EN 61193-2 | 2007 |
| IEC 62391-1 | 2022 | Fixed electric double-layer capacitors for use in electric and electronic equipment - Part 1: Generic specification | EN IEC 62391-1 | 2022 |
| IEC 62391-2–1 | 2006 | Fixed electric double-layer capacitors for use in electronic equipment - Part 2–1: Blank detail specification - Electric double-layer capacitors for power application - Assessment level EZ | EN 62391-2–1 | 2006 |

# IEC 62391-2

Edition 2.0 2025-02

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

## Fixed electric double-layer capacitors for use in electronic equipment – Part 2: Sectional specification – Electric double-layer capacitors for power application

## Condensateurs électriques fixes à double couche utilisés dans les équipements électriques et électroniques – Partie 2: Spécification intermédiaire – Condensateurs électriques à double couche pour application de puissance

IEC 62391-2:2025-02(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

## Part 2: Sectional specification – Electric double-layer capacitors for power application

## 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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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 62391-2 has been prepared by IEC technical committee 40: Capacitors and resistors for electronic equipment. It is an International Standard.

This International Standard is to be used in conjunction with IEC 62391-1:2022.

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

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

a) the document has been completely restructured to comply with the ISO/IEC Directives, Part 2;

b) introduction of a new technical categorization for the test methods;

c) reorganization of the test methods according to these new categories;

d) revision of the tables, figures and references according to changes.

The text of this International Standard is based on the following documents:

| Draft | Report on voting |
|---|---|
| 40/3193/FDIS | 40/3199/RVD |

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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

## Part 2: Sectional specification – Electric double-layer capacitors for power application

## 1 Scope

This part of IEC 62391 applies to electric double-layer capacitors for power application.

Electric double-layer capacitors for power are intended for applications that require discharge currents in the range from mA to A. The characteristics of the capacitors include such performance as relatively high capacitance and low internal resistance, which is applicable to Class 3 and Class 5 of the measurement classification specified in IEC 62391-1:2022.

The object of this document is to specify preferred ratings and characteristics and to select from IEC 62391-1:2022 the appropriate quality assessment procedures, tests and measuring methods and to give general performance requirements for this type of capacitor. Test severities and requirements specified in detail specifications referring to this document provide specific test severities and requirements of an equal or higher performance level.

The definition of power density and its calculating procedure can be found in Annex A.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60068-2-6:2007, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-14:2023, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-20:2021, *Environmental testing – Part 2-20: Tests – Test Ta and Tb: Test methods for solderability and resistance to soldering heat of devices with leads*

IEC 60417, *Graphical symbols for use on equipment,* available at http://www.graphical-symbols.info/equipment

IEC 61193-2:2007, *Quality assessment systems – Part 2: Selection and use of sampling plans for inspection of electronic components and packages*

IEC 62391-1:2022, *Fixed electric double-layer capacitors for use in electric and electronic equipment – Part 1: Generic specification*

IEC 62391-2-1:2006, *Fixed electric double-layer capacitors for use in electronic equipment – Part 2-1: Blank detail specification – Electric double-layer capacitors for power application – Assessment level EZ*