SVENSK STANDARD

SS-EN IEC 61071, utg 2:2025

2025-12-17

REDLINE VERSION

Kondensatorer för kraftelektronik

Capacitors for power electronics

En så kallad ”Redline version” (RLV) innehåller både standarden som fastställts som SEK-publikation och en ändringsmarkerad IEC-standard. Alla tillägg och borttagningar sedan den tidigare utgåvan av IEC-standarden är markerade med färg. Med en RLV sparar du mycket tid när du ska identifiera och bedöma aktuella ändringar i standarden. SEK Svensk Elstandard kan bara ge ut RLV i de fall den finns tillgänglig från IEC.

IEC 61071

Edition 2.0 2017-08

REDLINE VERSION

colour inside

Capacitors for power electronics

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 31.060.70

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CAPACITORS FOR POWER ELECTRONICS

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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This Redline version provides you with a quick and easy way to compare all the changes between this standard and its previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

International Standard IEC 61071 has been prepared by IEC technical committee 33: Power capacitors and their applications.

This second edition cancels and replaces the first edition published in 2007. This edition constitutes a technical revision.

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

- Introduction of new terms and definitions
- clarifications for surge discharge test
- indications for measuring procedure during thermal stability test
- clarifications for self-healing test
- clarifications for endurance test
- clarifications for destruction test
- update of normative references
- general editorial review

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33/610/FDIS	33/612/RVD

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IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

CAPACITORS FOR POWER ELECTRONICS

1 Scope

This International Standard applies to capacitors for power electronics applications.

The operating frequency of the systems in which these capacitors are used is usually up to 15 kHz, while the pulse frequencies may be up to 5 to 10 times the operating frequency.

The document distinguishes between AC and DC capacitors which are considered as components when mounted in enclosures.

This document covers an extremely wide range of capacitor technologies for numerous applications, e.g. overvoltage protection, DC and ~~a.c.~~ filtering, switching circuits, ~~d.c.~~ energy storage, auxiliary inverters, etc.

The following are excluded from this document:

- capacitors for induction heat-generating plants operating at frequencies ~~between 40 Hz and 24 000 Hz~~ range up to 50 kHz (see IEC 60110-1 and IEC 60110-2);
- capacitors for motor applications and the like (see IEC 60252-1 and IEC 60252 -2);
- capacitors to be used in circuits for blocking one or more harmonics in power supply networks;
- small AC capacitors as used for fluorescent and discharge lamps (see IEC 61048 and IEC 61049);
- capacitors for suppression of radio interference (see IEC 60384-14);
- shunt capacitors for AC power systems having a rated voltage above 1 000 V (see ~~IEC 60871-1 and IEC 60871-2~~ the IEC 60871 standards);
- shunt power capacitors of the self-healing type for AC systems having a rated voltage up to and including 1 000 V (see IEC 60831-1 and IEC 60831-2);
- shunt power capacitor of the non-self-healing type for AC systems having a rated voltage up to and including 1 000 V (see ~~IEC 60931-1 and IEC 60931-2~~ the IEC 60931 standards);
- electronic capacitors not used in power circuits;
- series capacitors for power systems (see IEC 60143);
- coupling capacitors and capacitors dividers (see IEC 60358);
- capacitors for microwave ovens (see IEC 61270-1);
- capacitors for railway applications (see IEC 61881).

Examples of applications are given in 9.1.

2 Normative references

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

IEC 60068-2-20, *Environmental testing – Part 2-20: Tests – Test T: ~~Soldering~~ 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 60071-1, *Insulation coordination – Part 1: Definitions, principle and rules*~~

~~IEC 60071-2, *Insulation coordination – Part 2: Application guide*~~

IEC 60269-1, *Low-voltage fuses – Part 1: General requirements*

IEC 60664-1, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

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

IEC 60695-2-12, *Fire hazard testing – Part 2-12: Glowing/hot-wire based test methods – Glow-wire flammability index (GWFI) test method for materials*

IEC 60947-1:2007, *Low-voltage switchgear and controlgear – Part 1: General rules*

SVENSK STANDARD

SS-EN IEC 61071, utg 2:2025

Fastställd	Sida	Ansvarig kommitté
2025-12-17	1 (50)	SEK TK 33

Kondensatorer för kraftelektronik

Capacitors for power electronics

Som svensk standard gäller europastandarden EN IEC 61071:2025. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 61071:2025.

Nationellt förord

Europastandarden EN IEC 61071:2025

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 61071, Second edition, 2017 - Capacitors for power electronics**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 61071, utg 1:2007 med eventuella tillägg, ändringar och rättelser gäller ej fr o m 2028-08-31.

ICS 31.060.70

Denna standard är fastställd av SEK Svensk Elstandard,
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Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61071

August 2025

ICS 31.060.70

Supersedes EN 61071:2007

English Version

Capacitors for power electronics (IEC 61071:2017)

Condensateurs pour électronique de puissance (IEC 61071:2017)

Kondensatoren der Leistungselektronik (IEC 61071:2017)

This European Standard was approved by CENELEC on 2024-10-16. 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.

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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 61071:2025 E

SEK Svensk Elstandard

SS-EN IEC 61071, utg 2:2025

European foreword

The text of document 33/610/FDIS, future edition 2 of IEC 61071, prepared by TC 33 "Power capacitors and their applications" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61071:2025.

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) 2026-08-31
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2028-08-31

This document supersedes EN 61071:2007 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 has been prepared under a standardization request addressed to CENELEC by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

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 61071:2017 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 60146-1-1:2009	NOTE Approved as EN 60146-1-1:2010 (not modified)
IEC 61287-1:2014	NOTE Approved as EN 61287-1:2014 (not modified)
IEC 60110-1:1998	NOTE Approved as EN 60110-1:1998 (not modified)
IEC 60143 (series)	NOTE Approved as EN IEC 60143 (series)
IEC 60252-1:2010	NOTE Approved as EN 60252-1:2011 (not modified)
IEC 60252-1:2010/A1:2013	NOTE Approved as EN 60252-1:2011/A1:2013 (not modified)
IEC 60358-1:2012	NOTE Approved as EN 60358-1:2012 (not modified)
IEC 60384-14:2013	NOTE Approved as EN 60384-14:2013 (not modified)
IEC 60831-1:2014	NOTE Approved as EN 60831-1:2014 (not modified)
IEC 60831-2:2014	NOTE Approved as EN 60831-2:2014 (not modified)

IEC 60871-1:2014	NOTE	Approved as EN 60871-1:2014 (not modified)
IEC 60931-1:1996	NOTE	Approved as EN 60931-1:1996 (not modified)
IEC 60931-2:1995	NOTE	Approved as EN 60931-2:1996 (not modified)
IEC 61048:2006	NOTE	Approved as EN 61048:2006 (not modified)
IEC 61048:2006/A1:2015	NOTE	Approved as EN 61048:2006/A1:2016 (not modified)
IEC 61270-1:1996	NOTE	Approved as EN 61270-1:1996 (not modified)
IEC 61881-1:2010	NOTE	Approved as EN 61881-1:2011 (not modified)
IEC 61881-2:2012	NOTE	Approved as EN 61881-2:2012 (not modified)
IEC 61881-3:2012	NOTE	Approved as EN 61881-3:2012 (not modified)
IEC 61881-3:2012/A1:2013	NOTE	Approved as EN 61881-3:2012/A1:2013 (not modified)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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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	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-14	-	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN IEC 60068-2-14	-
IEC 60068-2-20	-	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	-
IEC 60068-2-21	-	Environmental testing - Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices	EN IEC 60068-2-21	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60269-1	-	Low-voltage fuses - Part 1: General requirements	EN IEC 60269-1	-
IEC 60664-1	-	Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests	EN IEC 60664-1	-
IEC 60695-2-11	-	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end products (GWEPT)	EN IEC 60695-2-11	-
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IEC 60947-1	2007	Low-voltage switchgear and controlgear - Part 1: General rules	-	-

IEC 61071

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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