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Capacitors for power electronics

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. 11/25

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NORME EUROPÉENNE

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English Version

**Capacitors for power electronics
(IEC 61071:2017)**Condensateurs pour électronique de puissance
(IEC 61071:2017)Kondensatoren der Leistungselektronik
(IEC 61071:2017)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

EN IEC 61071:2025 (E)**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 (dop) 2026-08-31 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2028-08-31 document have to be withdrawn

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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)

EN IEC 61071:2025 (E)

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)

EN IEC 61071:2025 (E)**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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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	-
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	EN IEC 60695-2-12	-
IEC 60947-1	2007	Low-voltage switchgear and controlgear - Part 1: General rules	-	-



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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Capacitors for power electronics

Condensateurs pour électronique de puissance



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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Capacitors for power electronics

Condensateurs pour électronique de puissance

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
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INTERNATIONALE

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CONTENTS

FOREWORD.....	5
1 Scope.....	7
2 Normative references	7
3 Terms and definitions	8
4 Service conditions	14
4.1 Normal service conditions	14
4.1.1 General	14
4.1.2 Altitude	14
4.1.3 Operating temperature (θ_{\max}).....	14
4.1.4 Operating temperature with forced cooling.....	14
4.2 Unusual service conditions	14
5 Quality requirements and tests	15
5.1 Test requirements.....	15
5.1.1 General	15
5.1.2 Test conditions	15
5.2 Classification of tests	15
5.2.1 General	15
5.2.2 Routine tests	15
5.2.3 Type tests.....	16
5.3 Capacitance and $\tan \delta$ measurements (routine test).....	16
5.3.1 Measuring procedure	16
5.3.2 Capacitance tolerances	17
5.3.3 Loss requirements ($\tan \delta$).....	17
5.4 Measurement of the tangent of the loss angle ($\tan \delta$) of a capacitor (type test)	17
5.4.1 Measurements.....	17
5.4.2 Loss requirements	17
5.5 Voltage test between terminals	17
5.5.1 General	17
5.5.2 Routine test.....	17
5.5.3 Type test	18
5.6 AC voltage test between terminals and case.....	18
5.6.1 Routine test.....	18
5.6.2 Type test	18
5.7 Test of internal discharge device.....	19
5.8 Sealing test.....	19
5.9 Surge discharge test.....	19
5.10 Thermal stability test.....	20
5.10.1 General	20
5.10.2 Measuring procedure	20
5.11 Self-healing test.....	21
5.12 Resonance frequency measurement	21
5.13 Environmental testing	21
5.13.1 Change of temperature	21
5.13.2 Damp heat, steady state.....	22
5.14 Mechanical testing	22
5.14.1 Mechanical tests of terminals.....	22

5.14.2	External inspection	22
5.14.3	Vibration and shocks	22
5.15	Endurance test.....	23
5.15.1	General	23
5.15.2	Conditioning of the units before the test.....	23
5.15.3	Initial capacitance and loss factor measurements	23
5.15.4	Endurance test	23
5.15.5	Final capacitance and $\tan \delta$ measurement	24
5.15.6	Acceptance criteria	24
5.16	Destruction test.....	24
5.16.1	General	24
5.16.2	Test sequence for a.c. capacitors	25
5.16.3	Test sequence for d.c. capacitors	27
5.17	Disconnecting test on internal fuses	29
5.17.1	General	29
5.17.2	Disconnecting requirements.....	30
5.17.3	Withstand requirements	30
5.17.4	Test procedure	30
5.17.5	Capacitance measurement	31
5.17.6	Visual checking	31
5.17.7	Voltage test	31
6	Overloads.....	32
6.1	Maximum permissible voltages	32
7	Safety requirements	32
7.1	Discharge device	32
7.2	Case connections	32
7.3	Protection of the environment	33
7.4	Other safety requirements.....	33
8	Markings.....	33
8.1	Marking of the units – Rating plate.....	33
9	Guidance on installation and operation	34
9.1	General.....	34
9.2	Choice of rated voltage	34
9.3	Operating temperature	34
9.3.1	General	34
9.3.2	Installation.....	35
9.3.3	Unusual cooling conditions	35
9.4	Special service conditions.....	35
9.5	Overvoltages	36
9.6	Overcurrents	36
9.7	Switching and protective devices	36
9.8	Choice of creepage distance and clearance	36
9.8.1	Creepage distance.....	36
9.8.2	Air clearances.....	36
9.9	Connections.....	37
9.10	Parallel connections of capacitors	37
9.11	Series connections of capacitors.....	37
9.12	Magnetic losses and eddy currents	37

9.13	Guidance for internal fuse and disconnecter protection in capacitors	37
9.14	Guidance for unprotected capacitors	38
Annex A (informative)	Waveforms	39
Annex B (normative)	Operational limits of capacitors with sinusoidal voltages as a function of frequency and at maximum temperature (θ_{max}).....	41
Annex C (normative)	Resonance frequency measuring methods – Examples	43
C.1	Method 1.....	43
C.2	Method 2.....	44
Bibliography	45
Figure 1	– Destruction test arrangement	26
Figure 2	– <i>N</i> source DC – Type 1	28
Figure 3	– <i>N</i> source DC – Type 2.....	29
Figure A.1	– Example of waveforms and their circuits	40
Figure B.1	– Supply conditions	41
Figure C.1	– Measuring circuit	43
Figure C.2	– Relation between the voltage across the capacitor and the supply frequency.....	43
Figure C.3	– Discharge current wave shape.....	44
Table 1	– Test voltage between terminals	17
Table 2	– Testing the robustness of terminals.....	22
Table 3	– Endurance test.....	24
Table 4	– Destruction test as a function of type of safety system	25
Table 5	– Maximum permissible voltages.....	32

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CAPACITORS FOR POWER ELECTRONICS

FOREWORD

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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

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

FDIS	Report on voting
33/610/FDIS	33/612/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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 filtering, switching circuits, energy storage, auxiliary inverters, etc.

The following are excluded from this document:

- capacitors for induction heat-generating plants operating at frequencies 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 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 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

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

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: 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 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*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN