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## **Anordningar för skydd mot nätfrekventa överspänningar för användning i hushåll och liknande (POP)**

*Power frequency overvoltage protective devices (POPs) for household and similar applications*

Som svensk standard gäller europastandarden EN IEC 63052:2021. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 63052:2021.

### **Nationellt förord**

Europastandarden EN IEC 63052:2021

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 63052, First edition, 2019<sup>\*)</sup> - Power frequency overvoltage protective devices (POPs) for household and similar applications**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 50550, utgåva 1, 2011 med ändringarna SS-EN 50550 AC1:2012 och SS-EN 50550/A1:2015, gäller ej fr o m 2024-08-20.

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<sup>\*)</sup>Corrigendum No. 1, November 2019 till IEC 63052:2019 är inarbetat i standarden.

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English Version

**Power frequency overvoltage protective devices (POPs) for  
household and similar applications  
(IEC 63052:2019 + COR1:2019)**

Dispositifs de protection contre les surtensions à fréquence  
industrielle (POP) pour les applications domestiques et  
similaires  
(IEC 63052:2019 + COR1:2019)

Schutzeinrichtungen gegen netzfrequente Überspannungen  
für Hausinstallationen und für ähnliche Anwendungen  
(POP)  
(IEC 63052:2019 + COR1:2019)

This European Standard was approved by CENELEC on 2019-09-25. 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.

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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**

## European foreword

The text of document 23E/1131/FDIS, future edition 1 of IEC 63052, prepared by SC 23E "Circuit-breakers and similar equipment for household use" of IEC/TC 23 "Electrical accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63052:2021.

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) 2022-02-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-08-20

This document supersedes EN 50550:2011 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 given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZZ, which is an integral part of this document.

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 63052:2019 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 60060-2	NOTE	Harmonized as EN 60060-2
IEC 60068-2-30:2005	NOTE	Harmonized as EN 60068-2-30:2005 (not modified)
IEC 60068-3-4:2001	NOTE	Harmonized as EN 60068-3-4:2002 (not modified)
IEC 60085	NOTE	Harmonized as EN 60085
IEC 60112	NOTE	Harmonized as EN IEC 60112
IEC 60364-4-41	NOTE	Harmonized as HD 60364-4-41
IEC 60364-4-44	NOTE	Harmonized as HD 60364-4-444

## 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.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60065 (mod)	2014	Audio, video and similar electronic apparatus - Safety requirements	EN 60065	2014
-	-		+ A11	2017
IEC 60269	series	Low-voltage fuses	EN 60269	series
IEC 60364	series	Low-voltage electrical installations	HD 60364	series
IEC 60384-14	2013	Fixed capacitors for use in electronic equipment - Part 14: Sectional specification - Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	EN 60384-14	2013
+ A1	2016		+ A1	2016
IEC 60417	-	Graphical symbols for use on equipment	-	
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
+ A1	1999		+ A1	2000
+ A2	2013		+ A2	2013
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60664-3	2016	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	2017
IEC 60695-2-10	2013	Fire hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2013
IEC 60695-2-11	2014	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (GWEPT)	EN 60695-2-11	2014

## EN IEC 63052:2021 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60898-1 (mod)	2015	Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 1: Circuit-breakers for a.c. operation	EN 60898-1	2019
IEC 60898-2	2016	Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 2: Circuit-breakers for AC and DC operation	EN 60898-2	2006
IEC 61000-4-2	2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3	2020	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61004-4-3	2020
IEC 61000-4-4	2012	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2012
IEC 61000-4-5	2014	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2014
+ A1	2017		+ A1	2017
IEC 61000-4-6	2013	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	2014
IEC 61000-4-16	2015	Electromagnetic compatibility (EMC) - Part 4-16: Testing and measurement techniques - Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz	EN 61000-4-16	2016
IEC 61000-6-3	2020	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments	EN 61000-6-3	2007
-	-		+ A1	2011
IEC 61008-1 (mod)	2010	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) - Part 1: General rules	EN 61008-1	2012
+ A1 (mod)	2012		+ A1	2014
+ A2 (mod)	2013		+ A2	2014
-	-		+ A11	2015
-	-		+ A12	2017

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61009-1 (mod)	2010	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) - Part 1: General rules	EN 61009-1	2012
+ A1 (mod)	2012		+ A1	2014
+ A2 (mod)	2013		+ A2	2014
-	-		+ A11	2015
-	-		+ A12	2016
IEC 61249-2	series	Materials for printed boards and other interconnecting structures	EN 61249-2	series
IEC 61543	1995	Residual current-operated protective devices (RCDs) for household and similar use - Electromagnetic compatibility	EN 61543	1995
+ A1	2004		-	-
-	-		+ corrigendum Dec.	1997
-	-		+ A11	2003
-	-		+ A12	2005
+ A2	2005		+ A2	2006
IEC 61558-1	2017		EN IEC 61558-1	2019
IEC 61558-2	series	Safety of power transformers, power supplies, reactors and similar products	EN 61558-2	series
IEC 62423	2009	Type F and type B residual current operated circuit-breakers with and without integral overcurrent protection for household and similar uses	EN 62423	2012
IEC 62873-2	2016	Residual current operated circuit-breakers for household and similar use – Part 2: Residual current devices (RCDs) – Vocabulary	-	-
IEC 62873-3-1	2016	Residual current operated circuit-breakers for household and similar use – Part 3-1: Particular requirements for RCDs with screwless-type terminals for external copper conductors	-	-
IEC 62873-3-2	2016	Residual current operated circuit-breakers for household and similar use – Part 3-2: Particular requirements for RCDs with flat quick-connect terminations	-	-
IEC 62873-3-3	2016	Residual current operated circuit-breakers for household and similar use – Part 3-3: Specific requirements for RCDs with screw-type terminals for external untreated aluminium conductors and with aluminium screw-type terminals for use with copper or with aluminium conductors	-	-

## EN IEC 63052:2021 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 306	2014	Plastics - Thermoplastic materials - Determination of Vicat softening temperature (VST)	EN ISO 306	2014
CISPR 14-1	2016	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission	EN 55014-1	2017
CISPR 32	2015	Electromagnetic compatibility of multimedia equipment - Emission requirements	EN 55032	2015
+ A1	2019		-	-
-	-		+ A11	2020



# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



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**Power frequency overvoltage protection devices (POPs) for household and similar applications**

**Dispositifs de protection contre les surtensions à fréquence industrielle (POP) pour les applications domestiques et similaires**

INTERNATIONAL  
ELECTROTECHNICAL  
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## CONTENTS

FOREWORD.....	8
1 Scope.....	10
2 Normative references .....	10
3 Terms, definitions and abbreviated terms .....	12
3.1 Terms and definitions.....	12
3.2 Abbreviated terms.....	14
4 Classification.....	15
4.1 According to the method of construction .....	15
4.2 According to the number of monitored line-to-neutral conductor voltages .....	15
4.3 According to the method of mounting .....	15
5 Characteristics of POPs.....	15
5.1 Summary of characteristics .....	15
5.2 Rated quantities and other characteristics.....	16
5.2.1 Rated voltage .....	16
5.2.2 Rated current ( $I_n$ ) .....	16
5.2.3 Rated frequency .....	16
5.2.4 Rated making and breaking capacity ( $I_m$ ) .....	16
5.2.5 Rated making and breaking capacity on one pole ( $I_{m1}$ ) .....	16
5.3 Standard and preferred values.....	16
5.3.1 Preferred values of rated voltage ( $U_n$ ) .....	16
5.3.2 Preferred values of rated current ( $I_n$ ).....	17
5.3.3 Preferred values of rated frequency .....	17
5.3.4 Minimum value of the rated making and breaking capacity ( $I_m$ ) .....	17
5.3.5 Minimum value of the rated making and breaking capacity on one pole ( $I_{m1}$ ) .....	17
5.3.6 Standard and preferred values of the rated conditional short-circuit current ( $I_{nc}$ ) and standard and preferred values of the rated conditional short-circuit current for one pole ( $I_{nc1}$ ) .....	17
5.3.7 Limit values of the break times and non-actuating times .....	18
5.3.8 Standard value of rated impulse withstand voltage ( $U_{imp}$ ) .....	18
5.4 Coordination with short-circuit protective devices (SCPDs) .....	18
5.4.1 General .....	18
5.4.2 Rated conditional short-circuit current ( $I_{nc}$ ) and rated conditional short- circuit on one pole ( $I_{nc1}$ ) .....	19
5.4.3 Operating characteristics of opening means for POPs according to 4.1.4.....	19
6 Marking and other product information.....	19
6.1 Marking.....	19
6.2 Additional marking for POPs according to 4.1.4 .....	22
6.2.1 Marking of POPs .....	22
6.2.2 Instructions for wiring and operation .....	22
7 Standard conditions for operation in service and for installation.....	22
7.1 Standard conditions .....	22
7.2 Conditions of installation .....	23
7.3 Pollution degree.....	23
8 Requirements for construction and operation.....	23
8.1 General.....	23

8.2	Mechanical design .....	24
8.2.1	General .....	24
8.2.2	Mechanism .....	25
8.2.3	Clearances and creepage distances .....	26
8.2.4	Screws, current-carrying parts and connections .....	29
8.2.5	Terminals for external conductors .....	30
8.3	Protection against electric shock .....	32
8.4	Dielectric properties and isolating capability .....	33
8.5	Temperature-rise .....	33
8.5.1	Temperature-rise limits .....	33
8.5.2	Ambient air temperature .....	34
8.6	Operating characteristics .....	34
8.6.1	Operating characteristics of the MPD part .....	34
8.6.2	Operating characteristics of the POP .....	34
8.7	Mechanical and electrical endurance .....	34
8.8	Performance at short-circuit currents .....	35
8.9	Resistance to mechanical shock and impact .....	35
8.10	Resistance to heat .....	35
8.11	Resistance to abnormal heat and to fire .....	35
8.12	Safety performance of overstressed POPs .....	35
8.13	Behaviour of POPs in case of current surges caused by impulse voltages .....	35
8.14	Reliability .....	35
8.15	Electromagnetic compatibility (EMC) .....	35
9	Testing procedure .....	36
9.1	General .....	36
9.1.1	General testing procedure for the different type of POPs .....	36
9.1.2	Characteristics of POPs are checked by means of type tests .....	37
9.1.3	For certification purposes, type tests are carried out in test sequences .....	38
9.2	Test conditions .....	38
9.3	Test of indelibility of marking .....	39
9.4	Test of reliability of screws, current-carrying parts and connections .....	39
9.5	Test of reliability of terminals for external conductors .....	41
9.6	Verification of protection against electric shock .....	42
9.7	Test of dielectric properties .....	42
9.7.1	Resistance to humidity .....	42
9.7.2	Insulation resistance of the main circuit .....	43
9.7.3	Dielectric strength of the main circuit .....	44
9.7.4	Insulation resistance and dielectric strength of auxiliary circuits .....	44
9.7.5	Capability of control circuits connected to the main circuit withstanding high DC voltages due to insulation measurements .....	45
9.7.6	Verification of impulse withstand voltages and of leakage current across open contacts .....	46
9.8	Test of temperature-rise .....	48
9.8.1	Ambient air temperature .....	48
9.8.2	Test procedure .....	48
9.8.3	Measurement of the temperature of parts .....	49
9.8.4	Temperature-rise of a part .....	49
9.9	Verification of the operating characteristics .....	49
9.9.1	Test circuit .....	49

9.9.2	Off-load characteristic tests with sinusoidal alternating voltages at the reference temperature of 20 °C ± 5 °C .....	49
9.9.3	Test of the effect of the ambient air temperature on the operating characteristics .....	50
9.10	Verification of mechanical and electrical endurance .....	50
9.10.1	General test conditions .....	50
9.10.2	Test procedure .....	50
9.10.3	Additional test for POP according to 4.1.4 .....	51
9.10.4	Condition of the POP after the test .....	51
9.11	Verification of the behaviour of the POP under short-circuit conditions.....	52
9.11.1	General .....	52
9.11.2	Short-circuit tests for POPs according to 4.1.4.....	52
9.12	Verification of resistance to mechanical shock and impact .....	59
9.12.1	Mechanical shock .....	59
9.12.2	Mechanical impact.....	60
9.13	Test of resistance to heat.....	62
9.13.1	Test on complete product .....	62
9.13.2	Ball pressure test.....	63
9.14	Test of resistance to abnormal heat and to fire .....	64
9.15	Test of safety performance of overstressed POPs.....	65
9.16	Verification of behaviour of POPs in case of current surges caused by impulse voltages .....	65
9.16.1	General .....	65
9.16.2	Verification of behaviour at surge currents up to 3 000 A (8/20 µs surge current test) .....	66
9.17	Verification of ageing of electronic components .....	66
9.18	Electromagnetic compatibility (EMC).....	67
9.18.1	General .....	67
9.18.2	EMC tests covered by other clauses/subclauses of the present document .....	67
9.18.3	EMC tests to be performed .....	67
9.18.4	POPs performance criteria.....	69
9.18.5	Emission tests .....	70
9.19	Tests of creepage distances and clearances for electronic circuits (abnormal conditions) .....	71
9.19.1	General .....	71
9.19.2	Abnormal conditions .....	71
9.19.3	Test procedure .....	71
9.20	Requirements for capacitors and specific resistors and inductors used in electronic circuits .....	73
9.20.1	General .....	73
9.20.2	Capacitors .....	73
9.20.3	Resistors .....	74
9.20.4	Inductors and windings .....	74
Annex A (normative) Test sequences and number of samples to be submitted for certification purposes.....		91
A.1	Test sequences .....	91
A.2	Number of samples to be submitted for full test procedure .....	96
A.3	Number of samples to be submitted for simplified test procedures in case of simultaneous submission of a range of POPs of the same fundamental design.....	96

Annex B (normative) Determination of clearances and creepage distances .....	98
B.1 General.....	98
B.2 Orientation and location of a creepage distance.....	98
B.3 Creepage distances where more than one material is used.....	98
B.4 Creepage distances split by floating conductive part.....	98
B.5 Measurement of creepage distances and clearances .....	98
Annex C (normative) Arrangement for the detection of the emission of ionized gases during short-circuit tests .....	102
Annex D (informative) Methods of determination of short-circuit power factor .....	105
D.1 General.....	105
D.2 Method I – Determination from DC components .....	105
D.3 Method II – Determination with pilot generator .....	105
Annex E (informative) Examples of terminal designs.....	106
Annex F (informative) Correspondence between ISO and AWG copper conductors.....	109
Annex G (informative) SCPDs for short-circuit tests .....	110
G.1 General.....	110
G.2 Silver wires .....	110
G.3 Declared protective devices .....	110
G.4 Other means .....	111
Annex H (informative) POP configurations according to classification in 4.1 .....	112
Bibliography.....	113
Figure 1 – Thread forming tapping screw .....	74
Figure 2 – Thread cutting tapping screw .....	74
Figure 3 – Standard test finger (see 9.6).....	75
Figure 4 – Typical diagram for all short circuit tests except for the verification of the suitability in IT systems.....	76
Figure 5 – Typical diagram for the verification of the suitability in IT systems.....	77
Figure 6 – Detail of impedance $Z$ , $Z_1$ and $Z_2$ in Figure 4 and Figure 5 .....	77
Figure 7 – Example of calibration record for short-circuit test (see 9.11.2.2 j)) .....	79
Figure 8 – Mechanical shock test apparatus (see 9.12.1).....	80
Figure 9 – Mechanical impact test apparatus (see 9.12.2).....	81
Figure 10 – Striking element for pendulum impact test apparatus (see 9.12.2).....	82
Figure 11 – Mounting support for sample for mechanical impact test (see 9.12.2) .....	83
Figure 12 – Example of mounting of unenclosed POPs for mechanical impact test (see 9.12.2) .....	84
Figure 13 – Example of mounting of panel mounting type POPs for mechanical impact test (see 9.12.2) .....	85
Figure 14 – Application of force for mechanical test of rail mounted POPs (see 9.12.2) .....	86
Figure 15 – Ball-pressure test apparatus (see 9.13.2) .....	86
Figure 16 – Surge current impulse 8/20 $\mu$ s.....	87
Figure 17 – Test circuit for the surge current test.....	87
Figure 18 – Example of test circuit for verification of ageing of electronic components (see 9.17) .....	88
Figure 19 – Minimum creepage distances and clearances measured in millimetres.....	89

Figure 20 – Minimum creepage distances and clearances as a function of peak value of operating voltage .....	90
Figure C.1 – Test arrangement .....	103
Figure C.2 – Grid .....	104
Figure C.3 – Grid circuit.....	104
Figure E.1 – Examples of pillar terminals .....	106
Figure E.2 – Examples of screw terminals and stud terminals .....	107
Figure E.3 – Examples of saddle terminals .....	108
Figure E.4 – Examples of lug terminals .....	108
Figure G.1 – Test apparatus for the verification of the minimum $I^2t$ and $I_p$ values to be withstood by the POP .....	111
Figure H.1 – POP according to classification in 4.1 .....	112
Table 1 – Limit values of break times and non-actuating times .....	18
Table 2 – Rated impulse withstand voltage as a function of the nominal voltage of the installation .....	18
Table 3 – Marking and position of marking .....	20
Table 4 – Standard conditions for operation in service .....	23
Table 5 – Minimum clearances and creepage distances.....	27
Table 6 – Connectable cross-sections of copper conductors for screw-type terminals .....	31
Table 7 – Temperature-rise values.....	33
Table 8 – List of type tests.....	38
Table 9 – Test copper conductors corresponding to the rated currents.....	39
Table 10 – Screw thread diameters and applied torques .....	40
Table 11 – Pulling forces .....	41
Table 12 – Test voltage of auxiliary circuits .....	45
Table 13 – Test voltage for verification of impulse withstand voltage .....	47
Table 14 – Test voltage for verifying the suitability for isolation, in reference to the rated impulse withstand voltage of the POP and the altitude at which the test is carried out .....	48
Table 15 – Tests to be made to verify the behaviour of POPs under short-circuit conditions .....	52
Table 16 – Minimum values of $I^2t$ and $I_p$ .....	54
Table 17 – Power factors for short-circuit tests .....	55
Table 18 – Tests already covered in this document.....	67
Table 19 – Tests to be applied for EMC .....	68
Table 20 – Emission test conditions .....	70
Table 21 – Maximum permissible temperatures under abnormal conditions .....	72
Table A.1 – Test sequences for POPs classified according to 4.1.1 .....	92
Table A.2 – Test sequences for POPs classified according to 4.1.2 .....	93
Table A.3 – Test sequences for POPs classified according to 4.1.3 .....	94
Table A.4 – Test sequences for POPs classified according to 4.1.4 .....	95
Table A.5 – Number of samples for full test procedure .....	96
Table A.6 – Number of samples for simplified test procedure .....	97
Table F.1 – ISO and AWG copper conductor correspondence .....	109

Table G.1 – Indication of silver wire diameters as a function of rated currents and short-circuit currents .....	110
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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## POWER FREQUENCY OVERVOLTAGE PROTECTION DEVICES (POPs) FOR HOUSEHOLD AND SIMILAR APPLICATIONS

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International Standard IEC 63052 has been prepared by subcommittee 23E: Circuit-breakers and similar equipment for household use, of IEC technical committee 23: Electrical accessories.

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

FDIS	Report on voting
23E/1131/FDIS	23E/1155/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 following differing practices of a less permanent nature exist in the countries indicated below.



5.3.6.2: In Korea, the values of 1 000 A, 1 500 A, 2 000 A, 2 500 A, 7 500 A, 9 000 A are also considered as standard values.

6.1: In Australia, this marking is mandatory but is not required to be visible after installation.

8.2.2: In the USA, the colours red and green are not used for contact position indication.

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.

The contents of the corrigendum of November 2019 have been included in this copy.

**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.**

# POWER FREQUENCY OVERVOLTAGE PROTECTION DEVICES (POPs) FOR HOUSEHOLD AND SIMILAR APPLICATIONS

## 1 Scope

This document applies to devices for power frequency overvoltage protection (hereafter referred to as "POP") for household and similar uses, with a rated frequency of 50 Hz, 60 Hz or 50/60 Hz, with rated voltage not exceeding 230 V AC (between phase and neutral), and with rated current not exceeding 63 A, either consisting of a functional unit in combination with a main protective device (MPD), or as one single device having opening means able to open the protected circuit in specified conditions.

The main protective device is a circuit-breaker, an RCCB or an RCBO.

NOTE 1 A POP, as one single device, is not a protective device to be used for automatic disconnection of the supply within the meaning specified in IEC 60364-4-41.

POPs are intended for use in an environment with pollution degree 2 and overvoltage category III. Devices for POPs are suitable for isolation.

POPs can be designed as a POP unit assembled to or integrated in a main protective device by the manufacturer or as an assembly of a main protective device mechanically or electrically coupled on site with the POP unit, or as one single POP having opening means able to open the protected circuit in specified conditions.

POPs are intended to mitigate the effects of power frequency overvoltages between a phase and neutral conductor (e.g. caused by loss of a neutral conductor in the three-phase supply upstream of the POP) for downstream equipment by opening the protected circuit when an overvoltage between phase and neutral is detected.

NOTE 2 In this context, the verb "mitigate" means that the POP will provide protection in most cases of power frequency overvoltages.

POPs intended for monitoring one line-to-neutral conductor voltage can be used between two-phase conductors in a phase-to-phase electrical supply system not exceeding 230 V if both conductors are switched and declared as such by the manufacturer.

POPs according to this document are suitable for use in an IT system provided all active conductors are switched.

This document does not apply to protection against common mode overvoltages.

This document does not apply to surge protective devices.

## 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 60065:2014, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60269 (all parts), *Low-voltage fuses*

IEC 60364 (all parts), *Low-voltage electrical installations*

IEC 60384-14:2013, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification – Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

IEC 60384-14:2013/AMD1:2016

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

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

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60664-3, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

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

IEC 60695-2-11:2014, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)*

IEC 60898-1:2015, *Electrical accessories – Circuit-breakers for overcurrent protection for household and similar installations – Part 1: Circuit-breakers for a.c. operation*

IEC 60898-2:2016, *Electrical accessories – Circuit-breakers for overcurrent protection for household and similar installations – Part 2: Circuit-breakers for AC and DC operation*

IEC 61000-4-2, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5:2014, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61000-4-6, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-16:2015, *Electromagnetic compatibility (EMC) – Part 4-16: Testing and measurement techniques – Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz*

IEC 61000-6-3, *Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments*

IEC 61008-1:2010, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) – Part 1: General rules*

IEC 61008-1:2010/AMD1:2012

IEC 61008-1:2010/AMD2:2013

IEC 61009-1:2010, *Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) – Part 1: General rules*

IEC 61009-1:2010/AMD1:2012

IEC 61009-1:2010/AMD2:2013

IEC 61249-2 (all parts), *Materials for printed boards and other interconnecting structures*

IEC 61543:1995, *Residual current-operated protective devices (RCDs) for household and similar use – Electromagnetic compatibility*

IEC 61543:1995/AMD1:2004

IEC 61543:1995/AMD2:2005

IEC 61558-1, *Safety of transformers, reactors, power supply units and combinations thereof – Part 1: General requirements and tests*

IEC 61558-2 (all parts), *Safety of transformers, reactors, power supply units and combinations thereof*

IEC 62423, *Type F and type B residual current operated circuit-breakers with and without integral overcurrent protection for household and similar uses*

IEC 62873-2, *Residual current operated circuit-breakers for household and similar use – Part 2: Residual current devices (RCDs) – Vocabulary*

IEC 62873-3-1, *Residual current operated circuit-breakers for household and similar use – Part 3-1: Particular requirements for RCDs with screwless-type terminals for external copper conductors*

IEC 62873-3-2, *Residual current operated circuit-breakers for household and similar use – Part 3-2: Particular requirements for RCDs with flat quick-connect terminations*

IEC 62873-3-3, *Residual current operated circuit-breakers for household and similar use – Part 3-3: Specific requirements for RCDs with screw-type terminals for external untreated aluminium conductors and with aluminium screw-type terminals for use with copper or with aluminium conductors*

ISO 306, *Plastics – Thermoplastic materials – Determination of Vicat softening temperature (VST)*

CISPR 14-1, *Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission*

CISPR 32, *Electromagnetic compatibility of multimedia equipment – Emission requirements*