ICS 29.120.50 SLOVENSKÁ TECHNICKÁ NORMA Január 2016

| STN | **Prúdové chrániče s nadprúdovou ochranou alebo bez nadprúdovej ochrany na zásuvky pre domácnosť a podobné použitie.** | **STN 35 4181**<br><br>35 4181 |
|---|---|---|

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. 12/15

Obsahuje: HD 62640:2015, IEC 62640:2011

**121978**

# HARMONIZATION DOCUMENT
# DOCUMENT D'HARMONISATION
# HARMONISIERUNGSDOKUMENT

**HD 62640**

March 2015

ICS 29.120.50

English Version

# Residual current devices with or without overcurrent protection for socket-outlets for household and similar uses (IEC 62640:2011 , modified)

Dispositifs à courant différentiel résiduel avec ou sans protection contre les surintensités pour les socles de prises de courant destinés à des installations domestiques et analogues
(IEC 62640:2011 , modifiée)

Fehlerstrom-/Differenzstrom-Schutzeinrichtung mit oder ohne Überstromschutz für Steckdosen für Hausinstallationen und für ähnliche Anwendungen
(IEC 62640:2011 , modifiziert)

This Harmonization Document was approved by CENELEC on 2015-01-05. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document at national level.

Up-to-date lists and bibliographical references concerning such national implementations may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.


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

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



Ref. No. HD 62640:2015 E

# Contents

Page

# Foreword

This document (HD 62640:2015) consists of the text of IEC 62640:2011 prepared by SC 23E “Circuit-breakers and similar equipment for household use” of IEC/TC 23 “Electrical accessories”, together with the common modifications prepared by CLC/TC 23E ”Circuit breakers and similar devices for household and similar applications”.

The following dates are fixed:

| | | |
|---|---|---|
| • latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2016-01-05 |
| • latest date by which the national standards conflicting with this document have to be withdrawn | (dow) | 2018-01-05 |

Clauses, subclauses, notes, footnotes, tables, figures and annexes which are additional to those in IEC 62640:2011 are prefixed “Z”.

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

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

# Endorsement notice

The text of this draft Harmonization Document consists of the text of the International Standard IEC 62640:2011 with the following common modifications.

COMMON MODIFICATIONS

## 1 Scope

**Replace** the first sentence of Clause 1 by:

“This Harmonization Document applies to residual current-operated devices (RCD) incorporated in, or specifically intended for use with two pole socket-outlets, with provision of earthing of the socket outlet for household and similar use (SRCD: socket-outlet residual current devices).”

At the end of the first paragraph, **delete** “or phase to earthed middle conductor”.

**Replace** the second paragraph by:

“SRCDs are only intended to provide supplementary protection downstream of the SRCD. SRCDs are intended for use in circuits where the fault protection and additional protection are already assured upstream of the SRCD.”

**Replace** the text of Note 1 by “Void”.

**Replace** the text of Note 2 by “Void”.

**Replace** the text of Note 3 by “Void”.

In Note 4, **replace** “IEC 60884-1” by “the national requirements for socket outlets of the country where the product is placed on the market”.

In the fifth paragraph (beginning by “They are not intended”), **replace** “IEC 60439-3” by “IEC 61439-3”.

In the ninth paragraph, **delete** at the end “or 20 A for devices with a rated voltage not exceeding 130 V a.c”.

**Replace** the text of Note 6 by “Void”.

**Replace** the text of Note 7 by “Void”.

In the last paragraph, **delete**“ IEC 60884-1 or”.

## 2 Normative references

**Delete** the reference to IEC 60884-1:2002.

**Add** the following note:

NOTE Normative references to international publications with their corresponding European publications are listed in Annex ZA (normative).

## 3 Terms and definitions

In 3.3.14, **replace** the term and definition by “Void”.

In 3.3.15, **replace** the term and definition by “Void”

## 4 Classification

**Replace** the text of Note 2 by “Void”.

**Replace** the text of Note 3 by “Void”.

In 4.2.1, **replace** the content of b) by “Void”.

In 4.2.2, **replace** the content of a) by “Void”.

In 4.4, **replace** the title and the contents by “Void”.

## 5 Characteristics of SRCDs

In 5.3.1.1, **delete** the note.

In 5.4.1, **replace** the contents by:

“The preferred value of rated voltage according to IEC 60038 is 230 V.”

In 5.4.2, **delete** the first two lines and the two notes.

In 5.4.3, **delete** “0,006 A –“ and the note.

In 5.4.5, **replace** the title and contents by:

**5.4.5 Preferred value of rated frequency**

The preferred value of rated frequency is 50 Hz.

In 5.4.8, **delete** the note.

In 5.4.9, **delete** the note.

In 5.4.10, **delete** the note.

In 5.4.11.1, **delete** the note.

In Table 2, **delete** the note.

## 6 Marking and other product information

In Table 4, row D, second column, **delete** “or 60 Hz”.

In Table 4, **replace** item P by “Void”.

In Table 4, row Q, **delete** “For devices with feed-through means, the supply and feed-through means shall be clearly marked (e.g. “supply” and “feed through”)”.

In Table 4, **delete** Note 1 and Note 2.

In 6.3, **replace** the title and contents by “Void”.

## 8 Requirements for construction and operation

In the last but one paragraph of 8.3.1, **delete** “, if any,”.

In the note of 8.3.2, **replace** “2.7.1.1 and 2.7.1.3” by “4.8.1”.

In Table 6, **delete** columns 2 and 3.

In Table 6, item 2, **add** a reference to table footnote [Z1].

In Table 6, **replace** the contents of item 3 in first column by “Void”.

In Table 6, **replace** the contents of table footnote [j] by “Void”.

In Table 6, **add** the following new table footnote:

[Z1] This applies also to clearance and creepage distances between live parts of different polarity of the SRCD and equipments mounted close to it.

In 8.3.3, **replace** the title and contents by “Void”.

In 8.3.5.2, **replace** the title and contents by “Void”.

In 8.4.1.3, at the end of the first paragraph, **replace** “path” by “pole”.

In 8.5, **replace** the title and contents by “Void”.

In 8.16.3.1, item iv), **replace** “Clause 23 of IEC 60884-1:2002” by **“**the national requirements for socket-outlets of the country where the product is placed on the market*”.*

In 8.16.3.1, last paragraph, **replace** “*Clauses 16 and 23 of IEC 60884-1:2002*” by “*the national requirements for socket outlets of the country where the product is placed on the market*”.

In Table 11, **delete** the table footnote [a] and the references to it.

## 9 Tests

In 9.1.1, first paragraph, **delete “**(including the FE, if applicable, connected to PE via $R_e$)”.

In 9.1.1, fifth paragraph, **replace** “IEC 60884-1” by “the national requirements of the country where the product is placed on the market”.

In 9.1.1, **delete** the sixth paragraph (the one beginning by “In countries where IEC 60884-1…”).

In Table 12, first row, fourth column, **replace** “20” by “16”. **Delete** the last two columns.

In 9.1.1, **delete** the two notes.

In 9.1.1, **add** a paragraph after the last paragraph:

“An operating speed of 0,1 m/s ± 25 % shall be used during actuation for the tests of 9.17 and 9.15.2. The speed is measured at the extremity when and where the operating means of the test apparatus touches the actuating means of the SRCD under test. For rotary knobs, the angular velocity shall correspond substantially to the above conditions, referred to the speed of the operating means (at its extremities) of the SRCD under test.”

In Table 13, fourth row, last column, **delete** “, 9.26”.

In Table 13, sixth row, **replace “**Behaviour of SRCDs with feed through terminals in case of miswiring” by “Void”.

In 9.3.2, first paragraph, **delete** “, $S_4$”.

In Table 16, **delete** the sixth and seven rows (the ones beginning respectively by “20 A” and “32 A”), and **delete** table footnote [d].

In 9.7.1.3, **delete** the note.

In Table 17, **delete** Note 1 and Note 2.

In Table 18, **delete** the note.

In Table 19, **delete** the note.

**Replace** the existing subclause 9.8.2 by the following:

**9.8.2 Verification of behaviour in the case of supply voltage failure**

With test switch $S_2$ in the open position, $S_1$ and the SRCD in the closed position:

Switch $S_1$ is then opened.

Only SRCDs classified according to 4.1.2 a) and 4.1.2 b) shall open automatically.

Switch $S_1$ is reclosed.

Only SRCDs classified according to 4.1.2 b) shall reclose automatically.

For SRCDs with manual opening means, the test is repeated with $S_2$ and the SRCD set in the open position and $S_1$ in the closed position:

Switch $S_1$ is then opened and reclosed.

The SRCD shall not reclose automatically.

For the purposes of this test, the test button is not considered to be a manual opening means.

In 9.8.3.1, **delete** “, $S_4$”.

In 9.8.3.2 a), **delete** “, $S_4$”.

In 9.8.3.2 c), **delete** “, $S_4$”.

In 9.8.3.3, **delete** twice “, $S_4$”.

In 9.8.6, **replace** the title and contents (including subclauses) by “Void”.

In 9.8.7.1, second paragraph, **delete** “and $S_4$”.

In 9.8.7.3, third paragraph, **delete** “, $S_4$” .

In 9.9, **replace** the title and contents by “Void”.

In 9.11.3.1, first paragraph, **delete** “or flying leads”.

In 9.11.3.2, **replace the** title and contents by “Void”.

In 9.13.3, a), **replace** “connected to the FE, if any, and the PE terminal, if any”; by “connected to the PE terminal”;.

In 9.15.2.1, b), fourth dash, **replace “**±5 %**”** by “0, - 5 %”

In 9.15.2.1, d), first paragraph and Note 2, **replace“**105 %**”** by “110 %”.

In 9.15.2.1, i), **replace** the last paragraph by:

“Under the test conditions of 9.8.3.2 a), the SRCD shall trip at a test current of 1,25 $I_{\Delta n}$. One test only is made on one pole taken at random, with measurement of break time. This time shall not exceed the value specified in Table 1 for $I_{\Delta n}$.”

In 9.15.2.2, third paragraph, **delete** “or flying leads”.

In 9.15.2.2, **delete** the fourth paragraph.

In 9.15.2.3, second paragraph, **delete** “or flying leads”.

In 9.15.2.3, **delete** the third paragraph.

In 9.15.2.3, a), third paragraph, **delete** the last sentence (“For SRCDs classified according 4.1.1 and fitted with an FE, the FE is connected and the supply neutral is not connected.”).

In 9.15.2.4, third paragraph, **delete** “or flying leads”.

In 9.15.2.4, **delete** the fourth paragraph.

In 9.15.3, **replace** “*Clause 20 of IEC 60884-1:2002”* by *“the national requirements of the country where the product is placed on the market”.*

In 9.16, first paragraph, **replace** 'item 2, 3 and 4' by 'items 2 and 4'.

In 9.17.1, first paragraph, **replace** “tests of Clause 21 of IEC 60884-1:2002,” by “national requirements of the country where the product is placed on the market”.

In 9.17.1, second paragraph, **replace “**IEC 60884-1” by “the national requirements of the country where the product is placed on the market”.

In Table 33, **delete** the note.

In 9.17.2.1, b), **delete** the last sentence (“For SRCDs classified according to 4.1.1 and fitted with a FE, 250 of these operating cycles are carried out with the neutral disconnected.”).

In 9.19.1.5, **replace** the paragraph by:

“Under the conditions of tests specified in 9.8.3.3, the SRCD shall trip with a test current of 1,25 $I_{\Delta n}$ One test only is made on one pole taken at random, with measurement of break time. This time shall not exceed the value specified in Table 1 for $I_{\Delta n}$.”

In 9.19.2, **replace** the last paragraph by

“Under the conditions of tests specified in 9.8.3.3, the SRCD shall trip with a test current of 1,25 $I_{\Delta n}$. One test only is made on one pole taken at random with measurement of break time. This time shall not exceed the value specified in Table 1 for $I_{\Delta n}$.“

In 9.23.2, second paragraph, **delete** “or flying leads”.

In 9.23.2, **delete** the third paragraph.

In 9.24, **replace** the third paragraph by:

“Under the conditions of tests specified in 9.8.3.3, the SRCD shall trip with a test current of 1,25 $I_{\Delta n}$. One test only is made on one pole taken at random with measurement of break time. This time shall not exceed the value specified in Table 1 for $I_{\Delta n}$.”

In 9.25, a), **replace** “FE terminal and” by “The”.

In 9.25, b), **replace** “The FE terminal and” by “The”.

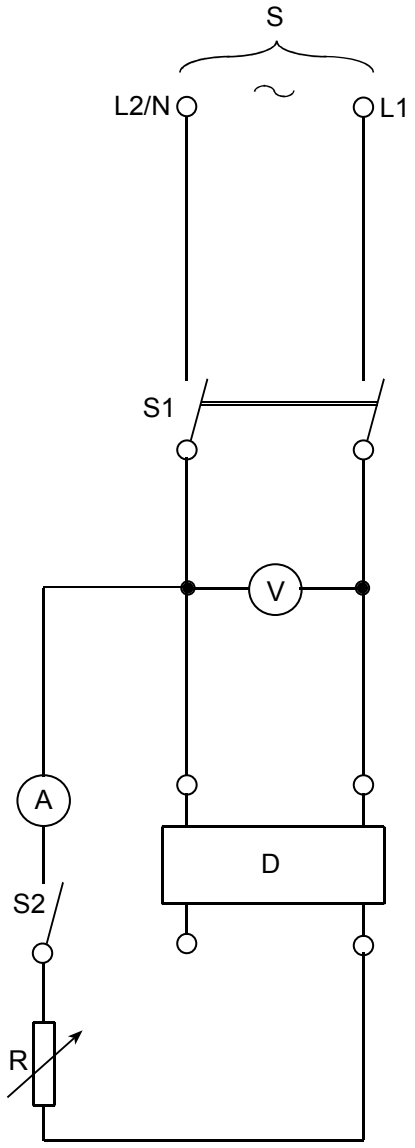
In 9.25, d), **replace** the last paragraph by

“Under the conditions of tests specified in 9.8.3.3, the SRCD shall trip with a test current of 1,25 $_{n}I_{\Delta n}$. One test only is made on one pole taken at random, with measurement of break time. This time shall not exceed the value specified in Table 1 for $I_{\Delta n}$.”

**Delete** 9.26 (including its subclauses).

## Figures

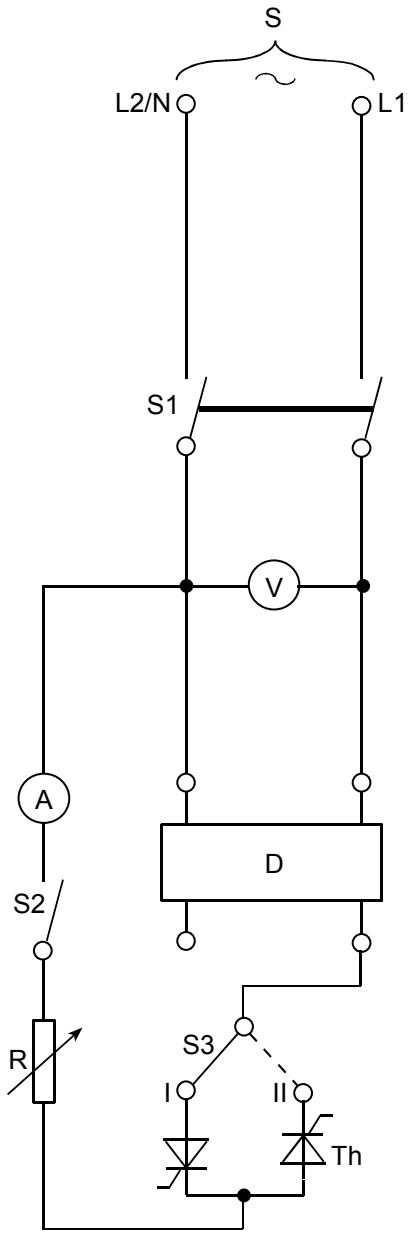
In Figure 2, **replace** the figure by:




In Figure 2, Key, **delete** « or $S_4$ » and the last two lines (the ones beginning with "$R_e$" and "FE").

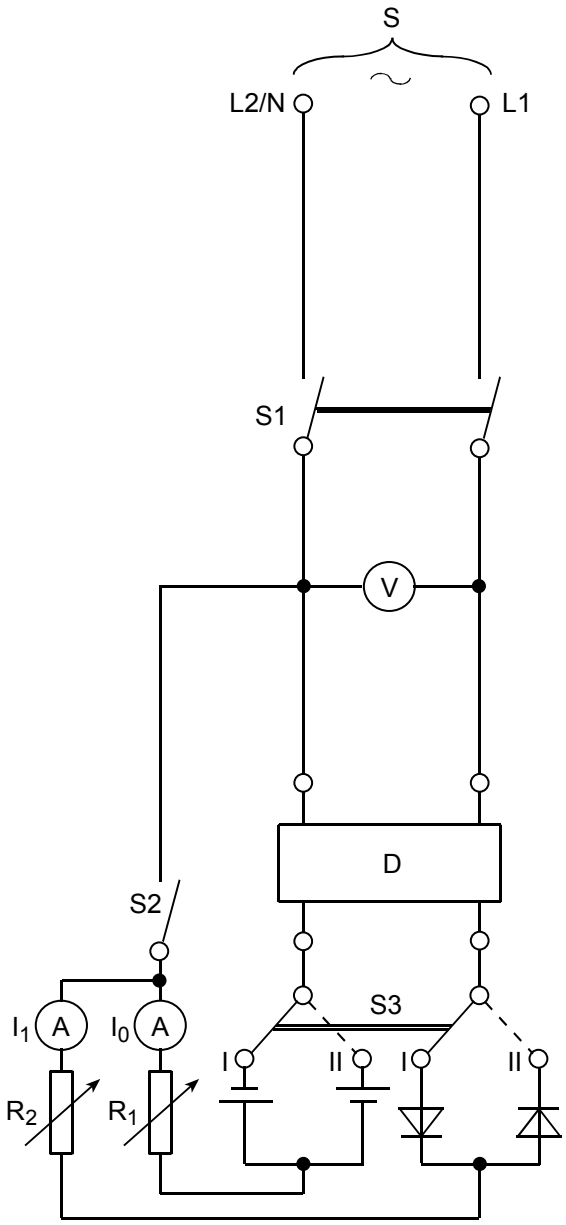
In Figure 13, **delete** the figure and **replace** the title by "Void".

In Figure 14, **replace** the figure by:



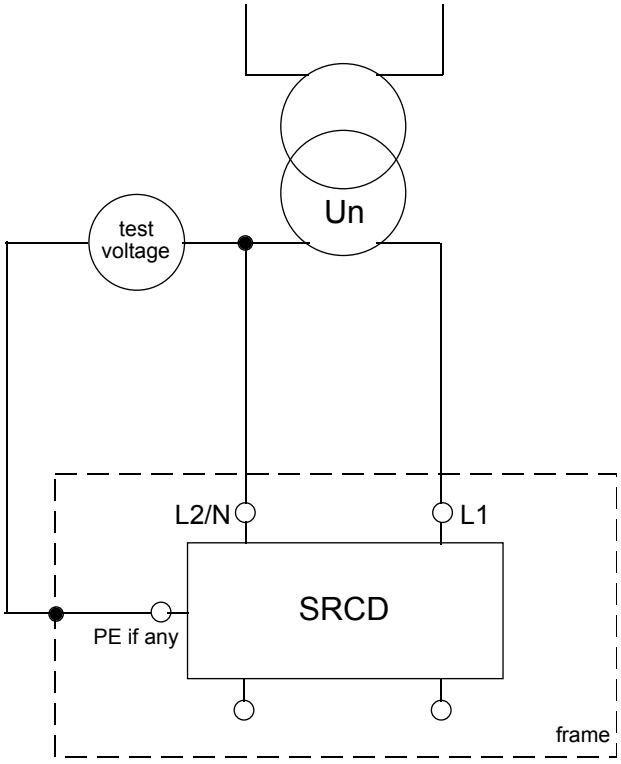

In Figure 14, Key, **delete** the three lines beginning with "$R_e$", "$S_4$" and "FE".

In Figure 15, **replace** the figure by:




In the Key, **delete** the three lines beginning with "$R_e$", "$S_4$" and "FE".

In Figure 29, **replace** the figure by:




## Annexes

In Table A.1, **delete** rows 9.11.3.2 and 9.26.

In Table A.1, **delete** row 9.9.

In Table A.2, **delete** table footnote [g].

After Annex E, **add** the following new annexes.

# 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.

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| IEC 60065 (mod)<br>-<br>+ A1 (mod)<br>-<br>-<br>+ A2 (mod)<br>- | 2001<br>-<br>2005<br>-<br>-<br>2010<br>- | Audio, video and similar electronic apparatus<br>- Safety requirements | EN 60065<br>+ corrigendum Mar.<br>+ A1<br>+ corrigendum Aug.<br>+ A11<br>+ A2<br>+ A12 | 2002<br>2006<br>2006<br>2007<br>2008<br>2010<br>2011 |
| IEC 60068-2-30 | 2005 | Environmental testing<br>Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle) | EN 60068-2-30 | 2005 |
| IEC 60068-3-4 | 2001 | Environmental testing<br>Part 3-4: Supporting documentation and guidance - Damp heat tests | EN 60068-3-4 | 2002 |
| IEC 60384-14 | - | Fixed capacitors for use in electronic equipment<br>Part 14: Sectional specification - Fixed capacitors for electromagnetic interference suppression and connection to the supply mains | EN 60384-14 | - |
| IEC 60529 | - | Degrees of protection provided by enclosures (IP Code) | EN 60529 | - |
| IEC 60664-3 | 2003 | Insulation coordination for equipment within low-voltage systems<br>Part 3: Use of coating, potting or moulding for protection against pollution | EN 60664-3 | 2003 |
| IEC 60670-1 (mod)<br>-<br>- | 2002<br>-<br>- | Boxes and enclosures for electrical accessories for household and similar fixed electrical installations<br>Part 1: General requirements | EN 60670-1<br>+ corrigendum Nov.<br>+ corrigendum Mar. | 2005<br>2007<br>2010 |
| IEC 60695-2-10 | 2000 | Fire hazard testing<br>Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure | EN 60695-2-10 | 2001 |

| | | | | |
|---|---|---|---|---|
| IEC 60695-2-11 | 2000 | Fire hazard testing<br>Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end products | EN 60695-2-11 | 2001 |
| IEC 61008-1 | - | Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's)<br>Part 1: General rules | EN 61008-1 | - |
| IEC 61009-1 | - | Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs)<br>Part 1: General rules | EN 61009-1 | - |
| IEC 61032 | 1997 | Protection of persons and equipment by enclosures - Probes for verification | EN 61032 | 1998 |
| IEC 61084-1 | 1991 | Cable trunking and ducting systems for electrical installations<br>Part 1: General requirements | - [1] | - |
| IEC 61534-1 | 2003 | Powertrack systems<br>Part 1: General requirements | EN 61534-1 | 2003 |
| IEC 61543<br>-<br>+ A1<br>-<br>-<br>+ A2 | 1995<br>-<br>2004 [2]<br>-<br>-<br>2005 | Residual current-operated protective devices (RCDs) for household and similar use - Electromagnetic compatibility | EN 61543<br>+ corrigendum Dec.<br>+ A11<br>+ corrigendum May<br>+ A12<br>+ A2 | 1995<br>1997<br>2003<br>2004<br>2005<br>2006 |
| CISPR 14-1 | - | Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus<br>Part 1: Emission | EN 55014-1 | - |

1) EN 50085-1 applies instead.

2) IEC 61543:1995/A1:2004 is a boomerang of EN 61543:1995/A11:2003.

# Annex ZB
(normative)

# Special national conditions

**Special national condition**: National characteristic or practice that cannot be changed even over a long period: e.g. climatic conditions, electrical earthing conditions.

NOTE If it affects harmonization. it forms part of the European Standard or Harmonization Document.

For the countries in which the relevant special national conditions apply, these provisions are normative, for other countries they are informative.

| Clause | Special National Condition |
|---|---|
| 1 | **United Kingdom** |
| | **Add** after the text *"in boxes in compliance with IEC 60670-1":* |
| | In the UNITED KINGDOM, boxes shall comply with both BS EN 60670–1 and BS 4662. |
| 1 | **Ireland** |
| | **Add** after the text *"in boxes in compliance with IEC 60670-1":* |
| | In IRELAND, boxes shall comply with both IE EN 60670–1 and BS 4662. |
| 5.3.1.1 | **United Kingdom** |
| | **Add** to the end of 5.3.1.1: |
| | In the UNITED KINGDOM, the short-circuit protective device shall comply with BS 1362. |
| 5.3.1.1 | **Ireland** |
| | **Add** to the end of 5.3.1.1: |
| | In IRELAND, the short-circuit protective device shall comply with BS 1362. |
| 5.4.6 | **Italy** |
| | **Add** a new paragraph after "250 A": |
| | In ITALY, 500 A is the minimum accepted value. |
| 5.4.7 | **Italy** |
| | **Add** a new paragraph after "250 A": |
| | In ITALY, 500 A is the minimum accepted value. |
| 6.1 | **United Kingdom** |
| | **Add** to the end of 6.1: |
| | In the UNITED KINGDOM, the information of Table 4, row B, is not used. |
| 6.1 | **Ireland** |
| | **Add** to the end of 6.1: |
| | In IRELAND, the information of Table 4, row B, is not used. |

Table 33 **United Kingdom**

**Add** after Table 33:

In the UNITED KINGDOM, the information in Table 33 does not apply to socket-outlets. In the UNITED KINGDOM, the requirements of BS 1363 shall apply.

Table 33 **Ireland**

**Add** after Table 33:

In IRELAND, the information in Table 33 does not apply to socket-outlets. In IRELAND, the requirements of IS 411 shall apply.

9.7.1.6 **United Kingdom**

**Add:**

In the UNITED KINGDOM, the tests and requirements of this clause do not apply to plugs and socket-outlets. In the UNITED KINGDOM, the tests and requirements of BS 1363 shall apply.

9.7.1.6 **Ireland**

**Add:**

In IRELAND, the tests and requirements of this clause do not apply to plugs and socket-outlets. In IRELAND, the tests and requirements of IS 401 and IS 411 shall apply.

9.7.1.7 **United Kingdom**

**Add:**

In the UNITED KINGDOM, the tests and requirements of this clause do not apply to plugs and socket-outlets. In the UNITED KINGDOM, the tests and requirements of BS 1363 shall apply.

9.7.1.7 **Ireland**

**Add:**

In IRELAND, the tests and requirements of this clause do not apply to plugs and socket-outlets. In IRELAND, the tests and requirements of IS 401 and IS 411 shall apply.

9.11.1 **United Kingdom**

**Add:**

In the UNITED KINGDOM, the requirements of this clause do not apply to plugs. In the UNITED KINGDOM, the requirements of BS 1363 shall apply.

9.11.1 **Ireland**

**Add:**

In IRELAND, the requirements of this clause do not apply to plugs. In IRELAND, the requirements of IS 401 and IS 411 shall apply.

9.18.1, 9.18.5 **United Kingdom**

**Add:**

In the UNITED KINGDOM, the tests and requirements of these clauses do not apply to plugs and socket-outlets. In the UNITED KINGDOM, the tests and requirements of BS 1363 shall apply.

9.18.1, 9.18.5 **Ireland**

**Add:**

In IRELAND, the tests and requirements of these clauses do not apply to plugs and socket-outlets. In IRELAND, the tests and requirements of IS 401 and IS 411 shall apply.

9.20.1.1 **United Kingdom**

**Add:**

In the UNITED KINGDOM, the tests and requirements of this clause do not apply to plugs and socket-outlets. In the UNITED KINGDOM, the tests and requirements of BS 1363 shall apply.

9.20.1.1 **Ireland**

**Add:**

In IRELAND, the tests and requirements of this clause do not apply to plugs and socket-outlets. In IRELAND, the tests and requirements of IS 401 and IS 411 shall apply.

9.20.1.2. **United Kingdom**

**Add:**

In the UNITED KINGDOM, the tests and requirements of this clause do not apply to plugs and socket-outlets. In the UNITED KINGDOM, the tests and requirements of BS 1363 shall apply.

9.20.1.2. **Ireland**

**Add:**

In IRELAND, the tests and requirements of this clause do not apply to plugs and socket-outlets. In IRELAND, the tests and requirements of IS 401 and IS 411 shall apply.

9.21.3 **United Kingdom**

**Add:**

In the UNITED KINGDOM, the tests and requirements of this clause do not apply to plugs and socket-outlets. In the UNITED KINGDOM, the tests and requirements of BS 1363 shall apply.

9.21.3 **Ireland**

**Add:**

In IRELAND, the tests and requirements of this clause do not apply to plugs and socket-outlets. In IRELAND, the tests and requirements of IS 401 and IS 411 shall apply.

A.1 **United Kingdom**

**Add:**

In the UNITED KINGDOM, the requirements of this Annex do not apply to plugs and socket-outlets. In the UNITED KINGDOM, the requirements of BS 1363 shall apply.

A.1 **Ireland**

**Add:**

In IRELAND, the requirements of this Annex do not apply to plugs and socket-outlets. In IRELAND, the requirements of IS 401 and IS 411 shall apply.

# Annex ZZ
(informative)

## Coverage of Essential Requirements of EU Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Article 1 of Annex I of the EU Directive 2004/108/EC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive(s) concerned.

WARNING: Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

# Bibliography

**Replace** the reference “IEC 60439-3” by:

IEC 61439-3, *Low-voltage switchgear and controlgear assemblies - Part 3: Particular requirements for low-voltage switchgear and controlgear assemblies intended to be installed in places where unskilled persons have access for their use - Distribution boards*

| | | |
|---|---|---|
| IEC 61439-3 | NOTE | Harmonized as EN 61439-3. |

**Add** the following notes for the standards indicated:

| | | |
|---|---|---|
| IEC 60038 | NOTE | Harmonized as EN 60038. |
| IEC 60112 | NOTE | Harmonized as EN 60112. |
| IEC 60364 | NOTE | Harmonized in HD 384 / HD 60364 series (partly modified). |
| IEC 60664-1:2007 | NOTE | Harmonized as EN 60664-1:2007 (not modified). |
| IEC 60999-1:1999 | NOTE | Harmonized as EN 60999-1:2000 (not modified). |
| IEC 61008 | NOTE | Harmonized in EN 61008 series (partly modified). |
| IEC 61009 | NOTE | Harmonized in EN 61009 series (partly modified). |
| IEC 61439-1:2009 | NOTE | Harmonized as EN 61439-1:2009 (modified). |
| IEC 61534 | NOTE | Harmonized in EN 61534 series (not modified). |
| ISO 306 | NOTE | Harmonized as EN ISO 306. |
| ISO 2039-2 | NOTE | Harmonized as EN ISO 2039-2. |

IEC 62640

Edition 1.0 2011-01

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

## Residual current devices with or without overcurrent protection for socket-outlets for household and similar uses

## Dispositifs à courant différentiel résiduel avec ou sans protection contre les surintensités pour les socles de prises de courant destinés à des installations domestiques et analogues

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# CONTENTS

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# RESIDUAL CURRENT DEVICES WITH OR WITHOUT OVERCURRENT PROTECTION FOR SOCKET-OUTLETS FOR HOUSEHOLD AND SIMILAR USES

## FOREWORD

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International Standard IEC 62640 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 standard is based on the following documents:

| FDIS | Report on voting |
|---|---|
| 23E/706/FDIS | 23E/713/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.

In this standard, the following print types are used:

– Requirements proper: in roman type.

– *Test specifications: in italic type.*

– Explanatory matter: in smaller roman type.

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

# INTRODUCTION

IEC series 61008 and IEC 61009 are applicable to residual current devices having one to four poles used in any part of an electrical installation. These devices may be installed either at the origin of a whole installation or upstream of one or several circuits of a fixed installation or upstream of a circuit powering one or more socket-outlets, or be integrated in the same enclosure as a socket-outlet.

Such residual current devices are able to provide fault protection (protection against indirect contact), additional protection (protection against direct contact) if the rated residual current is equal to or less than 30 mA and protection against fire hazard due to a persistent earth leakage current without the operation of the overcurrent protection. Equipment meeting the requirements of the series IEC 61008 or IEC 61009 ensure isolation, withstand high levels of electromagnetic disturbances for household and similar applications and allow safe use of an electrical installation.

Although the series IEC 61008 and IEC 61009 may be applicable to “residual current devices integrated in socket-outlets” it is acknowledged that due to the specific use and location of a socket-outlet, at the boundary of the fixed installation and immediately upstream of electrical equipment powered through a plug inserted into the socket-outlet, these devices require different features.

The residual current device at socket-outlet level is normally intended to be installed by skilled or instructed persons. It can be operated several times per day. The isolation function is not necessary since pulling out the plug from the socket-outlet is recognized as providing effective isolation. The absence of permanently connected long conductors downstream of the RCD, together with a limited number of powered appliances, justifies reduced EMC levels. Residual current devices covered by this standard are intended for additional protection in case of direct contact only. These particular features having been considered, it was recognized that a dedicated standard for socket-oulet residual current devices (SRCDs) was necessary.

# RESIDUAL CURRENT DEVICES WITH OR WITHOUT OVERCURRENT PROTECTION FOR SOCKET-OUTLETS FOR HOUSEHOLD AND SIMILAR USES

## 1 Scope

This International Standard applies to residual current-operated devices (RCD) incorporated in, or specifically intended for use with two pole socket-outlets, with or without earthing contact for household and similar uses (SRCD: socket-outlet residual current devices). SRCDs, according to this standard, are intended to be used in single phase systems such as phase to neutral or phase to phase or phase to earthed middle conductor.

SRCDs are only intended to provide additional protection downstream of the SRCD. SRCDs are intended for use in circuits where the fault protection (indirect contact protection) is already assured upstream of the SRCD.

NOTE 1 For example, fault protection (indirect contact protection) can be covered as follows:

– in TT systems, by upstream RCBOs or RCCBs according to IEC 61008-1 and IEC 61009-1;

– in a TN system, an overcurrent protective device can be used upstream.

NOTE 2 In the United States, there is no requirement for providing indirect contact protection upstream of an SRCD.

NOTE 3 In Switzerland these devices are not allowed for protective measures according to the national installation rules.

SRCDs are neither intended to provide an isolation function nor intended to be used in IT systems.

NOTE 4 For SRCDs intended to provide isolation or fault protection, or to be used in IT systems, IEC 61008-1 or IEC 61009-1 should be used, as applicable, in conjunction with IEC 60884-1.

NOTE 5 Requirements and testing for SRCDs intended to be used in IT systems are under consideration.

SRCDs are not used in distribution boards. They are not intended for the protection of a complete distribution circuit or a complete final circuit. These products are intended to be installed

– in boxes in compliance with IEC 60670-1,
– or in cable trunking systems in compliance with the IEC 61084 series,
– or in power track systems in compliance with the IEC 61534 series,
– or in boxes according to one of the above standards adjacent to socket-outlet boxes.

They are not intended to be used in enclosures or distribution boards in conformity with IEC 60670-24, IEC 61439-1 or IEC 60439-3.

RCDs for household and similar use not covered by the scope of this standard are covered by IEC 61008-1 or IEC 61009-1. SRCDs energized from batteries, or a circuit other than the one powering the loads, are not covered by this standard.

The residual current device incorporates the functions of detection of the residual current, of comparison of the value of this current with the residual operating value and of opening the protected circuit when the residual current exceeds this value.

The maximum rated residual operating current is 30 mA.

The maximum rated current is 16 A for devices with a rated voltage not exceeding 250 V a.c. or 20 A for devices with a rated voltage not exceeding 130 V a.c.

NOTE 6 In Australia and New Zealand, the maximum rated current for devices with a rated voltage not exceeding 250 V a.c. is 20 A.

NOTE 7 In Korea, the maximum rated current for devices with a rated voltage not exceeding 250 V a.c. is 32 A.

This International Standard applies to SRCDs incorporating overload or overcurrent protection.

This standard also applies to a connection unit incorporating a residual current device intended to protect only one piece of fixed electrical equipment immediately adjacent to the connection unit (e.g. hand dryer, water cooler, etc).

NOTE 8 SRCDs are designed to be operated by uninstructed persons and not to require maintenance.

The requirements of this standard apply for normal conditions of temperature and environment. Additional requirements may be necessary for devices used in locations having more severe environmental conditions.

The socket-outlet part of an SRCD is covered by IEC 60884-1 or the national requirements of the country where the SRCD is placed on the market.

## 2 Normative references

The following referenced documents are indispensable for the application 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 60065:2001, *Audio, video and similar electronic apparatus – Safety requirements*
Amendment 1 (2005)
Amendment 2 (2010)

IEC 60068-2-30:2005, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h +12 h cycle)*

IEC 60068-3-4:2001, *Environmental testing – Part 3-4: Supporting documentation and guidance – Damp heat tests*

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

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

IEC 60664-3:2003, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 60670-1:2002, *Boxes and enclosures for electrical accessories for household and similar fixed electrical installations – Part 1: General requirements*

IEC 60695-2-10:2000, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60695-2-11:2000, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products*

IEC 60884-1:2002, *Plugs and socket-outlets for household and similar purposes – Part 1: General requirements*

NOTE In the United Kingdom, IEC 60884-1 is not indispensable and is not applicable to SRCDs or plug and socket systems.

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

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

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 61084-1:1991, *Cable trunking and ducting systems for electrical installations – Part 1: General requirements*

IEC 61534-1:2003, *Powertrack systems – Part 1: General requirements*

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

Amendment 1 (2004)

Amendment 2 (2005)

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