SVENSK STANDARD SS-EN 61009-1

Fastställd	Utgåva	Sida	Ansvarig kommitté
2004-12-20	2	1 (1+177)	SEK TK 17B

Jordfelsbrytare med inbyggt överströmsskydd för bostadsinstallationer och liknande (RCBO) – Del 1: Allmänna regler

Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's) – Part 1: General rules

Som svensk standard gäller europastandarden EN 61009-1:2004. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61009-1:2004.

Nationellt förord

Europastandarden EN 61009-1:2004[*)]

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC

– **IEC 61009-1, Second edition, 1996**[**)] **- Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's) - Part 1: General rules**

jämte

Corrigendum, May 2003

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 61009-1, utgåva 1, 1995, SS-EN 61009-1/A1, utgåva 1, 1996, SS-EN 61009-1/A2, utgåva 1, 1998, SS-EN 61009-1/A11, utgåva 1, 1996, SS-EN 61009-1/A13, utgåva 1, 1998, SS-EN 61009-1/A14, utgåva 1, 1998, SS-EN 61009-1/A15, utgåva 1, 1998, SS-EN 61009-1/A17, utgåva 1, 1998, SS-EN 61009-1/A19, utgåva 1, 2000 och SS-EN 61009-1 C1, utgåva 1, 1998, gäller ej fr o m 2009-04-01.

[*)] EN 61009-1:2004 ikraftsattes 2004-12-20 som SS-EN 61009-1, utan återgivning av IEC-standarden.

[**)] Amendment No. 1, 2002 till IEC 61009-1:1996 är inarbetat i texten. Ändringarna är markerade med ett lodrätt streck i marginalen.

ICS 29.120.50

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EUROPEAN STANDARD **EN 61009-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM September 2004

ICS 29.120.50

Supersedes EN 61009-1:1994 + A1:1995 + A11:1995 + A2:1998 + A13:1998 + A14:1998 + A15:1998 + A17:1998 + A19:2000

English version

Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's) Part 1: General rules

(IEC 61009-1:1996 + corr. 2003 + A1:2002, modified)

Interrupteurs automatiques à courant différentiel résiduel avec protection contre les surintensités incorporée pour installations domestiques et analogues (DD) Partie 1: Règles générales (CEI 61009-1:1996 + corr. 2003 + A1:2002, modifiée)

Fehlerstrom-/Differenzstrom-Schutzschalter mit eingebautem Überstromschutz (RCBOs) für Hausinstallationen und für ähnliche Anwendungen Teil 1: Allgemeine Anforderungen (IEC 61009-1:1996 + Corr. 2003 + A1:2002, modifiziert)

This European Standard was approved by CENELEC on 2004-03-16. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 61009-1:2004 E

SEK Svensk Elstandard

Foreword

The text of the International Standard IEC 61009-1:1996 and its amendment 1:2002, prepared by SC 23E, Circuit-breakers and similar equipment for household use, of IEC TC 23, Electrical accessories, together with common modifications prepared by the Technical Committee CENELEC TC 23E, Circuit breakers and similar devices for household and similar applications, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 61009-1 on 2004-03-16.

This European Standard supersedes EN 61009-1:1994 + corrigendum Dec. 1997 + A1:1995 + A1:1995/corrigendum Dec. 1997 + A11:1995 + A11:1995/corrigendum Dec. 1997 + A2:1998 + A13:1998 + A13:1998/corrigendum Apr. 1998 + A14:1998 + A15:1998 + A17:1998 + A19:2000.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2005-04-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2009-04-01

This European Standard was prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directives. See Annex ZZ..

Annexes, clauses, subclauses, figures and tables that are additional to those in IEC 61009-1 are prefixed with the letter Z.

Endorsement notice

The text of the International Standard IEC 61000-9-1:1996 + corrigendum May 2003 + A1:2002 [*)] was approved by CENELEC as a European Standard with agreed common modifications as given below.

[*)] In view of some inconsistencies between the English and French versions of IEC 61009-1:1996, it is advisable to use the consolidated IEC text published in February 2003 for compiling the text of this European Standard.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

IEC publication	Date	Title	EN / EN	Date
IEC 60038	1983	IEC standard voltages	HD 472 S1	1989
IEC 60050-151	1978	International Electromechanical Vocabulary (IEV) – Chapter 151	–	–
IEC 60050-441	1984	International Electromechanical Vocabulary (IEV) – Chapter 441 Switchgear controlgear and fuses	–	–
IEC 60051	Series	Direct acting indicating analogue electrical measuring instruments and their accessories	EN 60051	Series
IEC 60060-2	1994	High-voltage test techniques -- Part 2: Measuring systems	EN 60060-2	1994
IEC 60068-2-30 + A1	1980 1985	Environmental testing -- Part 2: Tests - Test Db and guidance: Damp heat, cyclic (12 + 12 hour cycle)	EN 60068-2-30	1999
IEC 60068-3-4	2001	Environmental testing -- Part 3-4: Supporting documentation and guidance - Damp heat tests	EN 60068-3-4	2002
IEC 60112	2003	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	EN 60112	2003
IEC 60364, mod	Series	Electrical installations of buildings	HD 384	Series
IEC 60364-5-53	2001	Electrical installations of buildings – Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control	–	–
IEC 60417	Data-base	Graphical symbols for use on equipment. Index survey and compilation of the single sheets	–	–
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
IEC 60664-1 + A1 + A2	1992 2000 2002	Insulation co-ordination for equipment within low voltage systems – Part 1: Principles requirements and tests	EN 60664-1	2003
IEC 60695-2-10	2000	Fire Hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2001
IEC 60715	1981	Dimensions of low-voltage switchgear and controlgear. Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations	EN 60715	2001
IEC 60755	1983	General requirements for residual current operated protective devices	–	–
IEC 60884-1	2002	Plugs and socket-outlets for household and similar purposes – Part 1: general requirements	–	–
IEC 60898-1	2002	Circuit-breakers for overcurrent protection for household and similar installations	EN 60898-1	2003
IEC 60947-1	1999 2004	Low-voltage switchgear and controlgear - Part 1: General rules	EN 60947-1	1999 2004
IEC 60947-2	1995 2003	Low-voltage switchgear and controlgear - Part 2: Circuit-breakers	EN 60947-2	1996 2003
IEC 61008	Series	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses	EN 61008	Series

IEC publication	Date	Title	EN / EN	Date
IEC 61543	1995	Residual current-operated protective devices (RCDs) for household and similar use - Electromagnetic compatibility	EN 61543	1995
ISO 7000	1989	Graphical symbols, for use on equipment Index and synopsis	–	–
CISPR 14-1	2000	Electromagnetic compatibility - Requirements for household appliances , electric tools and similar apparatus - Part 1: Emission	EN 55014-1	2000

CONTENTS

RESIDUAL CURRENT OPERATED CIRCUIT-BREAKERS WITH INTEGRAL OVERCURRENT PROTECTION FOR HOUSEHOLD AND SIMILAR USES (RCBOs) –

Part 1: General rules

1 Scope

This International Standard applies to residual current operated circuit-breakers with integral overcurrent protection functionally independent of, or functionally dependent on, line voltage for household and similar uses (hereafter referred to as RCBOs), for rated voltages not exceeding 440 V a.c., rated currents not exceeding 125 A and rated short-circuit capacities not exceeding 25 000 A for operation at 50 Hz or 60 Hz.

These devices are intended to protect people against indirect contact, the exposed conductive parts of the installation being connected to an appropriate earth electrode and to protect against overcurrents the wiring installations of buildings and similar applications. They may be used to provide protection against fire hazards due to a persistent earth fault current, without the operation of the overcurrent protective device.

RCBOs having a rated residual operating current not exceeding 30 mA are also used as a means for additional protection in the case of failure of the protective means against electric shock.

This standard applies to devices performing simultaneously the function of detection of the residual current, of comparison of the value of this current with the residual operating value and of opening of the protected circuit when the residual current exceeds this value, and also of performing the function of making, carrying and breaking overcurrents under specified conditions.

NOTE 1 The content of the present standard related to the operation under residual current conditions is based on IEC 61008.

The content of the present standard related to protection against overcurrents is based on IEC 60898.

NOTE 2 RCBOs are essentially intended to be operated by uninstructed persons and designed not to require maintenance. They may be submitted for certification purposes.

NOTE 3 Installation and application rules of RCBOs are given in IEC 60364.

RCBOs of the general type are resistant to unwanted tripping, including the case where surge voltages (as a result of switching transients or induced by lightning) cause loading currents in the installation without occurrence of flashover.

RCBOs of the S type are considered to be sufficiently proof against unwanted tripping even if the surge voltage causes a flashover and a follow-on current occurs.

NOTE 4 Surge arresters installed downstream of the general type of RCBOs and connected in common mode may cause unwanted tripping.

NOTE 5 RCBOs within the scope of the present standard are considered as suitable for isolation (see 8.1.3).

Special precautions (e.g. lightning arresters) may be necessary when excessive overvoltages are likely to occur on the supply side (for example in the case of supply through overhead lines) (see IEC 60364-4-443).

NOTE 6 For RCBOs having a degree of protection higher than IP20 special constructions may be required.

This standard also applies to RCBOs obtained by the assembly of an adaptable residual current device with a circuit-breaker. The mechanical assembly shall be effected in the factory by the manufacturer, or on site, in which case the requirements of annex G shall apply. It also applies to RCBOs having more than one rated current, provided that the means for changing from one discrete rating to another is not accessible in normal service and that the rating cannot be changed without the use of a tool.

Supplementary requirements may be necessary for RCBOs of *the* plug-in type.

Particular requirements are necessary for RCBOs incorporated in or intended only for association with plugs and socket-outlets or with appliance couplers for household and similar general purposes.

NOTE 7 For the time being, for RCBOs incorporated in, or intended only for plugs and socket-outlets, the requirements of this standard in conjunction with the requirements of IEC 600884-1 may be used, as far as applicable.

This standard does not apply to:

– RCBOs intended to protect motors,

– RCBOs the current setting of which is adjustable by means accessible to the user in normal service.

The requirements of this standard apply for normal environmental conditions (see 7.1). Additional requirements may be necessary for RCBOs used in locations having severe environmental conditions.

RCBOs including batteries are not covered by this standard.

A guide for the co-ordination of RCBOs with fuses is given in annex F.

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 60038:1983, *IEC standard voltages*

IEC 60050(151):1978, *International Electrotechnical Vocabulary (IEV) – Chapter 151: Electrical and magnetic devices*

IEC 60050(441):1984, *Chapter 441: Switchgear, controlgear and fuses*

IEC 60051, *Direct acting indicating analogue electrical measuring instruments and their accessories*

IEC 60060-2:1994, *High-voltage test techniques – Part 2: Measuring Systems*

IEC 60068-2-28:1990, *Environmental testing – Part 2: Tests – Guidance for damp heat tests*

IEC 60068-2-30:1980, *Environmental testing – Part 2: Test Db and guidance: Damp heat, cyclic (12 + 12 hour cycle)*
Amendment 1 (1985)

IEC 60364: *Electrical installations of buildings*

IEC 60364-4-443:1995, *Part 4: Protection for safety – Chapter 44: Protection against overvoltages – Section 443: Protection against overvoltages of atmospheric origin or due to switching*

IEC 60364-5-53:1994, *Part 5: Selection and erection of electrical equipment – Chapter 53: Switchgear and controlgear*

IEC 60417:1973, *Graphical symbols for use on equipment. Index, survey and compilation of the single sheets*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Codes)*

IEC 60695-2-1/0:1994, *Fire hazard testing – Part 2: Test methods – Section 1/sheet 0: Glow-wire test methods – General*

IEC 60755:1983, *General requirements for residual current operated protective devices*

IEC 60884-1:1994, *Plugs and socket-outlets for household and similar purposes – Part 1: General requirements*

IEC 60898:1995, *Electrical accessories – Circuit-breakers for overcurrent protection for household and similar installations*

IEC 61008-1:1990, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) – Part 1: General rules*

Amendment 1 (1992), Amendment 2 (1995)

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