



SLOVENSKI STANDARD
SIST EN 61009-1:2005/A12:2009
01-april-2009

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

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

Fehlerstrom-/Differenzstrom-Schutzschalter mit eingebautem Überstromschutz (RCBOs) für Hausinstallationen und für ähnliche Anwendungen - Teil 1: Allgemeine Anforderungen

Interrupteurs automatiques à courant différentiel résiduel avec protection contre les surintensités incorporée pour installations domestiques et analogues (DD) - Partie 1: Règles générales

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Ta slovenski standard je istoveten z: EN 61009-1:2004/A12:2009

ICS:

29.120.50 Xæ[çæ\ ^Á Ái\ * æ Fuses and other overcurrent protection devices
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SIST EN 61009-1:2005/A12:2009 en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61009-1/A12

February 2009

ICS 29.120.50

English version

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

Interrup-teurs automatiques
à courant différentiel résiduel
avec protection contre les surintensités
incorporée pour installations
domestiques et analogues (DD) -
Partie 1: Règles générales

Fehlerstrom-/Differenzstrom-
Schutzschalter mit eingebautem
Überstromschutz (RCBOs)
für Hausinstallationen
und für ähnliche Anwendungen -
Teil 1: Allgemeine Anforderungen

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This amendment A12 modifies the European Standard EN 61009-1:2004; it was approved by CENELEC on 2008-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: avenue Marnix 17, B - 1000 Brussels

Foreword

This amendment to the European Standard EN 61009-1:2004 was prepared by the Technical Committee CENELEC TC 23E, Circuit breakers and similar devices for household and similar applications.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A12 to EN 61009-1:2004 on 2008-12-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2009-12-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2011-12-01

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Contents

Add:

8.Z2 Electromagnetic compatibility (EMC)

9.Z2 Electromagnetic compatibility (EMC)

8 Requirements for construction and operation

Add the following new Subclause 8.Z2:

8.Z2 Electromagnetic compatibility (EMC)

RCBOs shall operate reliably even in presence of electromagnetic disturbances and shall comply with relevant EMC requirements.

Compliance is checked by the tests of 9.Z2.

9 Tests

9.21.1.4 Replace the last paragraph by the following new paragraph:

The half-wave current I_1 , starting from zero, being steadily increased at an approximate rate of $1,4 I_{\Delta n} / 30$ A per second for RCBOs with $I_{\Delta n} > 0,01$ A and $2 I_{\Delta n} / 30$ A per second for RCBOs with $I_{\Delta n} \leq 0,01$ A, the device shall trip before this half-wave current I_1 reaches a value not exceeding $1,4 I_{\Delta n}$ or $2 I_{\Delta n}$ respectively.

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Add the following new Subclause 9.Z2:

9.Z2 Electromagnetic compatibility (EMC)

EMC tests shall be performed according to EN 61543 as follows:

- *Tests listed in the following table are covered by this standard and have not to be repeated:*

Table Z1 - Tests to be applied for EMC

Reference to Tables 4 and 5 of EN 61543	Electromagnetic phenomena	Tests of EN 61009-1
T 1.3	Voltage amplitude variations	9.9.1.5 and 9.17
T 1.4	Voltage unbalance	9.9.1.5 and 9.17
T 1.5	Power frequency variations	9.2
T 1.8	Magnetic fields	9.12 and 9.18
T 2.4	Current oscillatory transients	9.19

- The remaining tests in Tables 4, 5 and 6 of EN 61543 shall be done according to the test sequences Z1, Z2 and Z3 listed in Annex A of this standard.

For devices containing a continuously operating oscillator, the test of EN 55014 shall be carried out on the samples prior to the tests of EN 61543.

Annex A Test sequence and number of samples to be submitted for certification purposes**Table A.1** Add the following rows Z1, Z2, Z3 and note a):

Test sequence	Clause or subclause	Test (or Inspection)
Z1 ^{a)}	EN 61543 Table 4 - T1.1	Harmonics, interharmonics
	EN 61543 Table 4 - T1.2	Signalling voltage
	EN 61543 Table 5 - T2.3	Conducted unidirectional transients of the ms and μ s time scale
Z2	EN 61543 Table 5 - T2.1 and T2.5	Conducted oscillatory voltages or currents
	EN 61543 Table 5 - T2.2	Conducted unidirectional transients of the ns time scale (burst)
Z3	EN 61543 Table 5 - T2.6	Conducted common mode disturbances in the frequency range lower than 150 kHz
	EN 61543 Table 6 - T3.1	Electrostatic discharges

^{a)} For devices containing a continuously operating oscillator, the test of EN 55014 shall be carried out on the samples prior to the tests of this sequence.

Table A.2 Add the following rows Z1, Z2, Z3 and note e):

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Test sequence	Number of samples	Minimum number of accepted samples ^{a) b)}	Number of samples for repeated tests ^{c)}
Z1 ^{e)}	https://standards.iteh.ai/catalog/standards/sist/18a0c493-438f-4cd8-8a84-f3aad950ebda/sist-en-61009-1-2005-a12-2009 3	2	3
Z2 ^{e)}	3	2	3
Z3 ^{e)}	3	2	3

^{e)} On request of the manufacturer the same set of samples may be subjected to more than one of these test sequences.

Table A.3 Replace Table A.3 by the following new table:

Test sequence	Number of samples according to number of poles ^{a) g)}		
	2 poles ^{b) c)}	3 poles ^{f)}	4 poles ^{e)}
A	1 max. rating I_n min. rating $I_{\Delta n}$	1 max. rating I_n min. rating $I_{\Delta n}$	1 max. rating I_n min. rating $I_{\Delta n}$
B	3 max. rating I_n min. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$
C ₁	3 max. rating I_n min. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$
C ₂	for 2 protected poles 2 max. rating I_n min. rating $I_{\Delta n}$ or for one protected pole 3 max. rating I_n min. rating $I_{\Delta n}$	1 max. rating I_n min. rating $I_{\Delta n}$	1 max. rating I_n min. rating $I_{\Delta n}$
D ₀ + D ₁	3 max. rating I_n min. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$
D ₀	1 for all other ratings of $I_{\Delta n}$ with max. I_n		
E ₀ + E ₁	3 max. rating I_n min. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$
E ₀	1 for all other ratings of I_n with min. $I_{\Delta n}$		
F ₀	3 max. rating I_n min. rating $I_{\Delta n}$ 3 min. rating I_n max. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$ 3 min. rating I_n max. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$ 3 min. rating I_n max. rating $I_{\Delta n}$
F ₁	3 max. rating I_n min. rating $I_{\Delta n}$ 3 min. rating I_n max. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$ 3 min. rating I_n max. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$ 3 min. rating I_n max. rating $I_{\Delta n}$
F ₂	3 ^{h)} max. rating I_n min. rating $I_{\Delta n}$	3 ^{h)} max. rating I_n min. rating $I_{\Delta n}$	3 ^{h)} max. rating I_n min. rating $I_{\Delta n}$
G	3 max. rating I_n min. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$
H ^{h)}	3 max. rating I_n min. rating $I_{\Delta n}$ 3 min. rating I_n max. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$ 3 min. rating I_n max. rating $I_{\Delta n}$	3 max. rating I_n min. rating $I_{\Delta n}$ 3 min. rating I_n max. rating $I_{\Delta n}$
Z1 ^{h)}	3 samples of the same rating chosen at random	3 samples of the same rating chosen at random	3 samples of the same rating chosen at random
Z2 ^{h)}	3 samples of the same rating chosen at random	3 samples of the same rating chosen at random	3 samples of the same rating chosen at random
Z3 ^{h)}	3 samples of the same rating chosen at random	3 samples of the same rating chosen at random	3 samples of the same rating chosen at random

- a) If a test is to be repeated according to the minimum performance criteria of A.2, a new set of samples is used for the relevant test. In the repeated test all test results must be acceptable.
- b) If only 3-pole and/or 4-pole RCBOs are submitted, this column shall also apply to a set of samples with the smallest number of poles.
- c) Also applicable to 2-pole RCBOs with 1 protected pole.
- d) Void.
- e) Also applicable to 4-pole RCBOs with 3 protected poles.
- f) This column is omitted when 4-pole RCBOs have been tested.
- g) If only one value of $I_{\Delta n}$ is submitted, min. rating $I_{\Delta n}$ and max. rating $I_{\Delta n}$ are replaced by $I_{\Delta n}$.
- h) Only the maximum number of poles.

Annex H (normative) List of tests, additional test sequences and numbers of samples for verification of compliance of RCBOs with the requirements of electromagnetic compatibility (EMC)

Delete the whole Annex H.

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