SLOVENSKI STANDARD
SIST EN 62423:2013

01-februar-2013

Nadomešča:
SIST EN 62423:2009

Odklopniki na preostali tok tipov F in B z vgrajeno nadtokovno zaščito ali brez nje za gospodinjsko in podobno rabo (IEC 62423:2009, spremenjen + popravek dec. 2011)

Type F and type B residual current operated circuit-breakers with and without integral overcurrent protection for household and similar uses (IEC 62423:2009, modified + corrigendum Dec. 2011)

Fehlerstrom-/Differenzstrom-Schutzschalter Typ F und Typ B mit und ohne eingebautem Überstromschutz für Hausinstallationen und für ähnliche Anwendungen (IEC 62423:2009, modified + corrigendum Dec. 2011) (IEC 62423:2009, modifiziert)

Interrupteurs automatiques à courant différentiel résiduel de type B et de type F avec et sans protection contre les surintensités incorporée pour usages domestiques et analogues ((IEC 62423:2009, modified + corrigendum Dec. 2011)CEI 62423:2009, modifiée)

Ta slovenski standard je istoveten z: **EN 62423:2012**

ICS:

29.120.50	Varovalke in druga medtokovna zaščita	Fuses and other overcurrent protection devices

SIST EN 62423:2013 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62423

December 2012

ICS 29.120; 29.120.50

Supersedes EN 62423:2009

English version

Type F and type B residual current operated circuit-breakers with and without integral overcurrent protection for household and similar uses
(IEC 62423:2009, modified + corrigendum Dec. 2011)

Interrupteurs automatiques à courant différentiel résiduel de type B et de type F avec et sans protection contre les surintensités incorporée pour usages domestiques et analogues
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(IEC 62423:2009, modifiziert + corrigendum Dez. 2011)

This European Standard was approved by CENELEC on 2012-06-19. 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.

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.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

This document (EN 62423:2012) consists of the text of IEC 62423:2009 + corrigendum 2011 prepared by IEC/TC 23E "Circuit-breakers and similar equipment for household use", 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) 2013-06-19
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2017-06-19

This document supersedes EN 62423:2009.

EN 62423:2012 includes the following significant technical changes with respect to EN 62423:2009:

– requirements and tests for Type F RCD have been introduced;

– requirements and tests for two-pole Type B RCD have been introduced;

– new additional requirements and tests for Type B RCDs have been introduced to cover requirements and tests for Type F too.

This European Standard is to be read in conjunction with the following standards:

EN 61008-1:2012, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) – Part 1: General rules*

EN 61009-1:2012, *Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) – Part 1: General rules*

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

Endorsement notice

The text of the International Standard IEC 62423:2009 + corrigendum 2011 was approved by CENELEC as a European Standard with agreed common modifications.

COMMON MODIFICATIONS

Clause	Common modification
Introduction	**Delete** “with rated frequency 50 Hz or 60 Hz”.
1 Scope	**Replace** the first two paragraphs by : The scope of EN 61008-1 and EN 61008-2-1 or EN 61009-1 and EN 61009-2-1 applies with the following additions. "This standard specifies requirements and tests for Type F and Type B RCDs (Residual current devices). Requirements and tests given in this standard are in addition to the requirements of Type A residual current devices according to EN 61008-2-1 or EN 61009-2-1. This standard can only be used together with EN 61008-1 and EN 61009-1."
1	In third paragraph, **delete** “with rated frequency 50 Hz or 60 Hz”.
1	In sixth paragraph, **replace** “IEC” with “EN”.
1	**Add** a new paragraph after fourth paragraph: "Type F and type B RCDs have high resistance against unwanted tripping even if the surge voltage causes a flashover and a follow-on current occurs and in case of inrush residual currents with a maximum duration of 10 ms which can occur in case of switching ON electronic equipment or EMC-filters."
1	**Delete** the seventh paragraph.
1	**Modify** note 2 by: “Note 2 : deleted”
2	**Replace** the contents of Clause 2 with: “Normative references to international publications are listed in Annex ZA.”
5.2.3	**Delete** the value "60 Hz" three times: in the title of 5.2.3, in the title of Table 2 and in note 4 of Table 2.
9.2.1.1	**Delete** the third paragraph in 9.2.1.1.
9.2.1.2 b)	**Replace** last paragraph by: *The maximum break time shall not exceed 0,3 s for general type RCDs and for S-type RCDs the maximum break time shall not exceed 0,5 s.*
9.2.1.7.1	Add a note after the first paragraph in 9.2.1.7.1 : Note: The open circuit voltage of the DC source should be high enough to guarantee stable smooth d.c. current (e.g. more than 24 V).
9.2.2	Delete the paragraph before the note.
Figure 2	**Delete** “or 60 Hz”.
Annexes A, B, C and D	See modified Annexes A to D at the end of the document (modifications in red).
Annex ZA	See new Annex ZA at the end of this document.

Annex A
(normative)

Number of samples to be submitted and test sequences to be applied for verification of conformity for type F RCCBs

Verification of conformity may be made

– by the manufacturer for the purpose of suppliers declaration (13.5.1 of ISO/IEC Guide 2);

– by an independent body for certification (13.5.2 of ISO/IEC Guide 2).

According to the terminology of ISO/IEC Guide 2 the term "certification" can be used for the second case only.

The tests are made according to Table A.1 below, where the tests in each sequence are carried out in the order indicated.

The sampling procedure is given in A.2 and A.3 of EN 61008-1:2012 .

Table A.1 – Test sequences for Type F RCCBs

Test sequence		Tests according to EN 61008-1 and EN 61008-2-1	Additional tests according to this standard	Test (or Inspection)
A		6	6	Marking
		8.1.1	No	General
		8.1.2	No	Mechanism
		9.3	No	Indelibility of marking
		8.1.3	No	Clearance and creepage distances (external parts only)
		9.15	No	Trip-free mechanism
		9.4	No	Reliability of screws, current-carrying parts and connections
		9.5	No	Reliability of terminals for external conductors
		9.6	No	Protection against electric shock
		9.13.1	No	Resistance to heat
		9.13.2 9.13.3	No	
		8.1.3	No	Clearances and creepage distances (internal parts)
		9.14	No	Resistance to abnormal heat and to fire
B		9.7	No	Test of dielectric properties
		9.8	No	Temperature rise
		9.20	No	Resistance of insulation against impulse voltages
		9.22.2	No	Reliability at 40 °C
		9.23	No	Ageing of electronic components
C		9.10	No	Mechanical and electrical endurance
D		9.9		Residual operating characteristics
	D_0		9.1.2	Verification of the correct operation in case of a steady increase of composite residual current
			9.1.3	Verification of the correct operation in case of sudden appearance of composite residual current
	D_1	~~9.17~~	~~No~~	~~Behaviour in the case of failure of the line voltage~~
		9.19	9.1.5	Unwanted tripping Behaviour in the case of surge currents

		……	9.1.6	Behaviour in the case of inrush residual currents
			9.1.4	Correct operation for RCD powered on two poles only
		9.21.4	9.1.7	Type A residual current devices
		9.11.2.3 a) and b)	No	Performance at $I_{\Delta m}$
		9.16	No	Test device
		9.12	No	Resistance to mechanical shock and impact
		9.18	No	Non-operating current under overcurrent conditions
	D_2	9.11.2.3 c)	No	Verification of the suitability in IT system
E		9.11.2.4 a)	No	Coordination at I_{nc}
		9.11.2.2	No	Performance at I_m
F		9.11.2.4 b)	No	Coordination at I_m
		9.11.2.4 c)	No	Coordination at $I_{\Delta c}$
G_0		9.22.1	No	Reliability (climatic tests)
G_1		9.Z1	No	Verification of correct operation at low ambient air temperature of RCCBs for use in the range of .-25 °C to +40 °C
H[a]		EN 61543:1995, Table 4 -T1.1 EN 61543:1995, Table 4 -T1.2 EN 61543:1995, Table 5 -T2.3	No	Harmonics, interharmonics Signalling voltage Conducted unidirectional transients of the ms and µs time scale
I		EN 61543:1995, Table 5 -T2.1 EN 61543:1995, Table 5 -T2.5 EN 61543:1995, Table 5 -T2.2	No	Conducted oscillatory voltages or currents Radiated high-frequency phenomena Conducted unidirectional transients of the ns time scale (burst)
J		EN 61543:1995, Table 5 -T2.6 EN 61543:1995, Table 6 -T3.1	No	Conducted common mode disturbances in the frequency range lower than 150 kHz Electrostatic discharges

[a] For devices containing a continuously operating oscillator, the test of CISPR 14-1 shall be carried out on the samples prior to the tests of this sequence.

Annex B
(normative)

Number of samples to be submitted and test sequences to be applied for verification of conformity for Type F RCBOs

Verification of conformity may be made

– by the manufacturer for the purpose of suppliers declaration (13.5.1 of ISO/IEC Guide 2);

– by an independent body for certification (13.5.2 of ISO/IEC Guide 2).

According to the terminology of ISO/IEC Guide 2 the term "certification" can be used for the second case only.

The tests are made according to Table B.1 below, where the tests in each sequence are carried out in the order indicated.

The sampling procedure is given in A.2 and A.3 of EN 61009-1:2012.

Table B.1 – Test sequences for Type F RCBOs

Test sequence		Tests according to EN 61009-1 and EN 61009-2-1	Additional tests according to this standard	Test (or Inspection)
A		6	6	Marking
		8.1.1	No	General
		8.1.2	No	Mechanism
		9.3	No	Indelibility of marking
		8.1.3	No	Clearance and creepage distances (external parts only)
		8.1.6	No	Non-interchangeability
		9.11	No	Trip-free mechanism
		9.4	No	Reliability of screws, current-carrying parts and connections
		9.5	No	Reliability of terminals for external conductors
		9.6	No	Protection against electric shock
		9.14.1	No	Resistance to heat
		9.14.2 9.14.3	No	
		8.1.3	No	Clearances and creepage distances (internal parts)
		9.15	No	Resistance to abnormal heat and to fire
B		9.7	No	Dielectric properties
		9.8	No	Temperature rise
		9.20	No	Resistance of insulation against impulse voltages
		9.22.2	No	Reliability at 40 °C
		9.23	No	Ageing of electronic components
C		9.10	No	Mechanical and electrical endurance
	C_1	9.12.11.2.1 (and 9.12.12)	No	Performance at reduced short-circuit currents (Verification of the RCBO after the short-circuit tests)
	C_2	9.12.11.2.2 (and 9.12.12)	No	Short-circuit test for verifying the suitability of RCBOs for use in IT systems (Verification of the RCBO after the short-circuit tests)
D	D_0	9.9.1		Operating characteristics under residual current conditions

			9.1.2	Verification of the correct operation in case of a steady increase of composite residual current
			9.1.3	Verification of the correct operation in case of sudden appearance of composite residual current
	D_1	~~9.17~~	~~No~~	~~Behaviour in the case of failure of the line voltage~~
		9.19	9.1.5	Unwanted tripping Behaviour in the case of surge currents.
		…	9.1.6	Behaviour in the case of inrush residual currents
			9.1.4	Correct operation for RCD powered on two poles only
		9.21~~.1~~	9.1.7	Type A residual current devices
		~~9.12.13~~	~~No~~	~~Performance at $I_{\Delta m}$~~
		9.16	No	Test device
E	E_0	9.9.2	No	Overcurrent operating characteristics
		9.18	No	~~Limiting value of overcurrent in case of a single-phase load through a 3-pole or 4-pole RCBO~~
	E_1	9.13	No	Resistance to mechanical shock and impact
		9.12.11.3 (and 9.12.12)	No	Short-circuit performance at 1 500 A
F	F_0	9.12.11.4 b) (and 9.12.12)	No	Performance at service short-circuit capacity
	F_1	9.12.11.4 c) (and 9.12.12.2)	No	Performance at rated short-circuit capacity
	F_2	9.12.11.4 d) (and 9.12.12.2)	No	Performance at $I_{\Delta m}$ (Verification of RCBO after short-circuit test)
G	G_0	9.22.1	No	Reliability (climatic tests)
	G1	9.Z1	No	Verification of correct operation at low ambient air temperature of RCBOs for use in the range of .-25 °C to +40 °C
H[a]		IEC 61543:1995, Table 4 - T1.1 IEC 61543:1995, Table 4 - T1.2 IEC 61543:1995, Table 5 - T2.3	No	Harmonics, interharmonics Signalling voltage Conducted unidirectional transients of the ms and µs time scale
I		IEC 61543:1995, Table 5 - T2.1 IEC 61543:1995, Table 5 - T2.5 IEC 61543:1995, Table 5 - T2.2	No	Conducted sine-wave voltages or currents Radiated high-frequency phenomena Fast Conducted unidirectional transients of the ns time scale (burst)
J		IEC 61543:1995, Table 5 - T2.6 IEC 61543:1995, Table 6 - T3.1	No	Conducted common mode disturbances in the frequency range lower than 150 kHz Electrostatic discharges

a) For devices containing a continuously operating oscillator, the test of CISPR 14-1 shall be carried out on the samples prior to the tests of this sequence.

Annex C
(normative)

Number of samples to be submitted and test sequences to be applied for verification of conformity for Type B RCCBs

Verification of conformity may be made

– by the manufacturer for the purpose of suppliers declaration (13.5.1 of ISO/IEC Guide 2);

– by an independent body for certification (13.5.2 of ISO/IEC Guide 2).

According to the terminology of ISO/IEC Guide 2 the term "certification" can be used for the second case only.

The tests are made according to Table C.1 below, where the tests in each sequence are carried out in the order indicated.

The sampling procedure is given in A.2 and A.3 of EN 61008-1:2012.

Table C.1 – Test sequences for Type B RCCBs

Test sequence		Tests according to EN 61008-1 and EN 61008-2-1	Additional tests according to this standard	Test (or inspection)	
A		6	6	Marking	
		8.1.1	No	General	
		8.1.2	No	Mechanism	
		9.3	No	Indelibility of marking	
		8.1.3	No	Clearance and creepage distances (external parts only)	
		9.15	No	Trip-free mechanism	
		9.4	No	Reliability of screws, current-carrying parts and connections	
		9.5	No	Reliability of terminals for external conductors	
		9.6	No	Protection against electric shock	
		9.13.1	9.2.4	Verification of the RCD after test sequence	Resistance to heat
		9.13.2 9.13.3	No		
		8.1.3	No	Clearances and creepage distances (internal parts)	
		9.14	No	Resistance to abnormal heat and to fire	
B		9.7	No	Test of dielectric properties	
		9.8	No	Temperature rise	
		9.20	No	Resistance of insulation against impulse voltages	
		9.22.2	No	Reliability at 40 °C	
		9.23	No	Ageing of electronic components	
		--	9.2.4	Verification of the RCD after test sequence	
C		9.10	No	Mechanical and electrical endurance	
		--	9.2.4	Verification of the RCD after test sequence	
D	D_0	9.9	No	Residual operating characteristics	
			9.1.2	Verification of the correct operation in case of a steady increase of composite residual current	
			9.1.3	Verification of the correct operation in case of sudden appearance of composite residual current	

			9.2.1.7.1	Verification of the correct operation in case of residual smooth direct current without load for ratings of $I_{\Delta n}$ not tested in D_1
	D_1	9.17	No	Behaviour in the case of failure of the line voltage
		9.19	9.1.5	~~Unwanted tripping~~ Behaviour in the case of surge currents
			9.1.6	Behaviour in the case of inrush residual currents
			9.1.4	Correct operation for RCD powered on two poles only
			9.2.3	Correct operation for RCD powered on two poles only
		9.21.1 [a]	9.1.7	Type A residual current devices
			9.2.1	Type B residual current devices
			9.2.2	Tests at temperature limits
		9.11.2.3 a) and b)	No	Performance at $I_{\Delta m}$
		9.16	No	Test device
		9.12	No	Resistance to mechanical shock and impact
		9.18	No	Non-operating current under overcurrent conditions
		--	9.2.4	Verification of the RCD after test sequence
D2		9.11.2.3 c)	No	Verification of the suitability in IT system
		--	9.2.4	Verification of the RCD after test sequence
E		9.11.2.4 a)	No	Coordination at I_{nc}
		9.11.2.2	No	Performance at I_m
		--	9.2.4	Verification of the RCD after test sequence
F		9.11.2.4 b)	No	Coordination at I_m
		9.11.2.4 c)	No	Coordination at $I_{\Delta c}$
		--	9.2.4	Verification of the RCD after test sequence
G_0		9.22.1	No	Reliability (climatic tests)
		--	9.2.4	Verification of the RCD after test sequence
G_1		9.Z1	No	Verification of correct operation at low ambient air temperature of RCCBs for use in the range of -25 °C to +40 °C
			9.2.4	Verification of the RCD after test sequence
H[b]		EN 61543:1995, Table 4 -T1.1 EN 61543:1995, Table 4 -T1.2 EN 61543:1995, Table 5 -T2.3	No	Harmonics, interharmonics Signalling voltage Conducted unidirectional transients of the ms and µs time scale
I		EN 61543:1995, Table 5 -T2.1 EN 61543:1995,Table 5 -T2.5 EN 61543:1995, Table 5 -T2.2	No	Conducted oscillatory voltages or currents Radiated high-frequency phenomena Conducted unidirectional transients of the ns time scale (burst)
J		EN 61543:1995, Table 5 -T2.6 EN 61543:1995, Table 6 –T3.1	No	Conducted common mode disturbances in the frequency range lower than 150 kHz Electrostatic discharges

[a] For devices having different residual current detection systems, for which the test according to 9.21.1 was made without supply voltage, an additional test according to 9.21.1.1 shall be made with a supply voltage of 1,1 U_n to verify that there is no interference between the different systems. Only the lower limits of the tripping currents are verified.

[b] For devices containing a continuously operating oscillator, the test of CISPR 14-1 shall be carried out on the samples prior to the tests of this sequence.

Annex D
(normative)

Number of samples to be submitted and test sequences to be applied for verification of conformity for Type B RCBOs

Verification of conformity may be made

– by the manufacturer for the purpose of suppliers declaration (13.5.1 of ISO/IEC Guide 2);

– by an independent body for certification (13.5.2 of ISO/IEC Guide 2).

According to the terminology of ISO/IEC Guide 2 the term "certification" can be used for the second case only.

The tests are made according to Table D.1 below, where the tests in each sequence are carried out in the order indicated.

The sampling procedure is given in A.2 to A.5 of EN 61009-1:2012.

Table D.1 – Test sequences for Type B RCBOs

Test sequence		Tests according to EN 61009-1 and EN 61009-2-1	Additional tests according to this standard	Test (or Inspection)	
A		6	6	Marking	
		8.1.1	No	General	
		8.1.2	No	Mechanism	
		9.3	No	Indelibility of marking	
		8.1.3	No	Clearance and creepage distances (external parts only)	
		8.1.6	No	Non-interchangeability	
		9.11	No	Trip-free mechanism	
		9.4	No	Reliability of screws, current-carrying parts and connections	
		9.5	No	Reliability of terminals for external conductors	
		9.6	No	Protection against electric shock	
		9.14.1	9.2.4	Verification of the RCD after test sequence	Resistance to heat
		9.14.2 9.14.3	No		
		8.1.3	No	Clearances and creepage distances (internal parts)	
		9.15	No	Resistance to abnormal heat and to fire	
B		9.7	No	Dielectric properties	
		9.8	No	Temperature rise	
		9.20	No	Resistance of insulation against impulse voltages	
		9.22.2	No	Reliability at 40 °C	
		9.23	No	Ageing of electronic components	
		--	9.2.4	Verification of the RCD after test sequence	
C	C_1	9.10	No	Mechanical and electrical endurance	
		--	9.2.4	Verification of the RCD after test sequence	
		9.12.11.2.1 (and 9.12.12)	No	Performance at reduced short-circuit currents (Verification of the RCBO after the short-circuit tests)	

	C_2	9.12.11.2.2 (and 9.12.12)	No	Short-circuit test for verifying the suitability of RCBOs for use in IT systems (Verification of the RCBO after the short-circuit tests)
D	D_0	9.9.1	No	Operating characteristics under residual current conditions
			9.1.2	Verification of the correct operation in case of a steady increase of composite residual current
			9.1.3	Verification of the correct operation in case of sudden appearance of composite residual current
			9.2.1.7.1	Verification of the correct operation in case of residual smooth direct current without load for ratings of $I_{\Delta n}$ not tested in D_1
	D_1	9.17	No	Behaviour in the case of failure of the line voltage
		9.19	9.1.5	Behaviour in the case of surge currents
			9.1.6	Behaviour in the case of inrush residual currents
			9.1.4	Correct operation for RCD powered on two poles only
			9.2.3	Correct operation for RCD powered on two poles only
		9.21~~.1~~[a]	~~9.1.7~~	Type A residual current devices
			9.2.1	Type B residual current devices
			9.2.2	Tests at temperature limits
		~~9.12.13~~	~~No~~	~~Performance at $I_{\Delta m}$~~
		9.16	No	Test device
		--	9.2.4	Verification of the RCD after test sequence
E_0		9.9.2	No	Overcurrent operating characteristics
		~~9.18~~	~~No~~	~~Limiting value of overcurrent in case of a single-phase load through a 3-pole or 4-pole RCBO~~
E_1		9.13	No	Resistance to mechanical shock and impact
		9.12.11.3 (and 9.12.12)	No	Short-circuit performance at 1 500 A
F_0		9.12.11.4 b) (and 9.12.12)	No	Performance at service short-circuit capacity
F_1		9.12.11.4 c) (and 9.12.12.2)	No	Performance at rated short-circuit capacity
F_2		9.12.11.4 d) (and 9.12.12.2)	No	Performance at $I_{\Delta m}$ (Verification of RCBO after short-circuit test)
G_0		9.22.1	No	Reliability (climatic tests)
		--	9.2.4	Verification of the RCD after test sequence
G_1		9.Z1	No	Verification of correct operation at low ambient air temperature of RCBOs for use in the range of .-25 °C to +40 °C
			9.2.4	Verification of the RCD after test sequence
H [b]		EN 61543:1995, Table 4 -T1.1 EN 61543:1995, Table 4 -T1.2 EN 61543:1995 Table 5 -T2.3	No	Harmonics, interharmonics Signalling voltage Conducted unidirectional transients of the ms and µs time scale
I		EN 61543:1995, Table 5 -T2.1 EN 61543:1995, Table 5 -T2.5 EN 61543:1995, Table 5 -T2.2	No	Conducted oscillatory voltages or currents Radiated high-frequency phenomena Conducted unidirectional transients of the ns time scale (burst)
J		EN 61543:1995, Table 5 -T2.6 EN 61543:1995, Table 6 –T3.1	No	Conducted common mode disturbances in the frequency range lower than 150 kHz Electrostatic discharges

[a] For devices having different residual current detection systems, for which the test according to 9.21.1 was made without supply voltage, an additional test according to 9.21.1.1 shall be made with a supply voltage of 1,1 U_n to verify that there is no interference between the different systems. Only the lower limits of the tripping currents are verified.

[b] For devices containing a continuously operating oscillator, the test of CISPR 14-1 shall be carried out on the samples prior to the tests of this sequence.

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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
CISPR 14-1 + corr. January	2005 2009	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission	EN 55014-1	2006
IEC/TS 60479-1	-	Effects of current on human beings and livestock - Part 1: General aspects	-	-
IEC/TS 60479-2	-	Effects of current on human beings and livestock - Part 2: Special aspects	-	-
IEC 61008	Series	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's)	EN 61008	Series
IEC 61009	Series	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's)	EN 61009	Series
IEC 61543	1995	Residual current-operated protective devices (RCDs) for household and similar use - Electromagnetic compatibility	EN 61543 + corr. December + A12	1995 1997 2005