



SLOVENSKI STANDARD
SIST EN 60947-1:2000/A2:2003
01-februar-2003

Nizkonapetostne stikalne in krmilnih naprave – 1. del: Splošna pravila – Dopolnilo A2

Low-voltage switchgear and controlgear -- Part 1: General rules

Niederspannungsschaltgeräte -- Teil 1: Allgemeine Festlegungen

Appareillage à basse tension -- Partie 1: Règles générales

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Ta slovenski standard je istoveten z: EN 60947-1:1999/A2:2001

SIST EN 60947-1:2000/A2:2003
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ICS:

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear
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SIST EN 60947-1:2000/A2:2003 **en**

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EUROPEAN STANDARD

EN 60947-1/A2

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2001

ICS 29.130.20

English version

Low-voltage switchgear and controlgear
Part 1: General rules
(IEC 60947-1:1999/A2:2001)

Appareillage à basse tension
Partie 1: Règles générales
(CEI 60947-1:1999/A2:2001)

Niederspannungsschaltgeräte
Teil 1: Allgemeine Festlegungen
(IEC 60947-1:1999/A2:2001)

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This amendment A2 modifies the European Standard EN 60947-1:1999; it was approved by CENELEC on 2001-12-01. 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.

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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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, 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

Foreword

The text of document 17B/1158/FDIS, future amendment 2 to IEC 60947-1:1999, prepared by SC 17B, Low-voltage switchgear and controlgear, of IEC TC 17, Switchgear and controlgear, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A2 to EN 60947-1:1999 on 2001-12-01.

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) 2002-09-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2004-12-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative and annex P is informative.
Annex ZA has been added by CENELEC.

Endorsement notice

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The text of amendment 2:2001 to the International Standard IEC 60947-1:1999 was approved by CENELEC as an amendment to the European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

Delete the following references:

IEC 60099-1:1991
IEC 60536-2:1992
IEC 60695-2-1/2:1994
IEC 60695-2-1/3:1994
CISPR 22:1993

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
Replace the references to IEC 60664-1 and CISPR 11 by:				
IEC 60664-1 (mod)	1992	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	HD 625.1 S1	1996
A1	2000		-	-
CISPR 11 (mod)	1997	Industrial, scientific and medical (ISM) radio-frequency equipment - Radio disturbance characteristics - Limits and methods of measurement	EN 55011	1998
A1	1999	SIST EN 60947-1:2000/A2:2003	A1	1999
Add: https://standards.iteh.ai/catalog/standards/sist/3a6fd992-fb4c-4905-a07e-87be0649f82a/sist-en-60947-1-2000-a2-2003				
IEC 61000-3-2 (mod)	2000	Electromagnetic compatibility (EMC) Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)	EN 61000-3-2	2000
IEC 61000-3-3	1994	Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection	EN 61000-3-3	1995
IEC 61000-4-6	1996	Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	1996
A1	2000		A1	2001
IEC 61000-4-8	1993	Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8	1993

EN 60947-1:1999/A2:2001

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-11	1994	Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	1994
A1	2000		A1	2001
IEC 61000-4-13		Part 4-13: Testing and measurement techniques - Harmonics and interharmonics, including mains signalling at a.c. power port, low frequency immunity tests - Basic EMC publication	-	-
IEC 61140	1997	Protection against electric shock - Common aspects for installation and equipment	EN 61140	2001

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NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC

60947-1

1999

AMENDEMENT 2
AMENDMENT 2
2001-10

Amendement 2

Appareillage à basse tension –

Partie 1:

Règles générales

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Amendment 2

[SIST EN 60947-1:2000/A2:2003](https://standards.iteh.ai/catalog/standards/sist/3a6fd992-fb4c-4905-a07e-87be0049182a/sist-en-60947-1-2000-a2-2003)

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Low-voltage switchgear and controlgear–

Part 1:

General rules

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

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Pour prix, voir catalogue en vigueur
For price, see current catalogue

FOREWORD

This amendment has been prepared by subcommittee 17B: Low-voltage switchgear and controlgear, of IEC technical committee 17: Switchgear and controlgear.

The text of this amendment is based on the following documents:

FDIS	Report on voting
17B/1158/FDIS	17B/1166/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2004. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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Replace, on page 5, "Table 18 – Emission limits for environment 1" by "Table 18 – Vacant".

Replace, on page 5, "Table 19 – Emission limits for environment 2" by "Table 19 – Vacant".

Add, on page 5, "Table 24 – Acceptance criteria when EM disturbances are present".

Add, on page 7, "Annex P (informative) Terminal lugs for low voltage switchgear and controlgear connected to copper conductors".

Page 13

1.2 Normative references

Delete the following reference:

IEC 60099-1:1991, *Surge arresters – Part 1: Non-linear resistor type gapped surge arresters for a.c. systems*

Delete, on page 15, the following references:

IEC 60536-2:1992, *Classification of electrical and electronic equipment with regard to protection against electric shock – Part 2: Guidelines to requirements for protection against electric shock*

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

IEC 60695-2-1/3:1994, *Fire hazard testing – Part 2: Test methods – Section 1/sheet 3: Glow-wire ignitability test on materials*

Add, after IEC 60664-1, the following reference:

Amendment 1 (2000)

Add, on page 17, the following references:

IEC 61000-3-2:2000, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*

IEC 61000-3-3:1994, *Electromagnetic compatibility (EMC) – Part 3: Limits – Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤ 16 A*

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IEC 61000-4-6:1996, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 6: Immunity to conducted disturbances, induced by radio-frequency fields*

Amendment 1 (2000)

<https://standards.iteh.ai/catalog/standards/sist/3a6fd992-fb4c-4905-a07e-87be0649f82a/sist-en-60947-1-2000-a2-2003>

IEC 61000-4-8:1993, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 8: Power frequency magnetic field immunity test – Basic EMC Publication*
Amendment 1 (2000)

IEC 61000-4-11:1994, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 11: Voltage dips, short interruptions and voltage variations immunity tests*

Amendment 1 (2000)

IEC 61000-4-13:____, *Electromagnetic compatibility (EMC) – Part 4-13: Testing and measurement techniques – Harmonics and interharmonics including mains signalling at a.c. power ports, low-frequency immunity tests – Basic EMC Publication 1)*

IEC 61140:1997, *Protection against electric shock – Common aspects for installation and equipment*

Replace, on page 17, the reference to CISPR 11:1990 by the following:

CISPR 11:1997, *Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement*
Amendment 1 (1999)

1) To be published.

Delete, on page 17, the following reference:

CISPR 22:1993, *Limits and methods of measurement of radio disturbance characteristics of information technology equipment*

Page 83

5.1 Nature of information

On page 85, seventh dash, "class of protection, etc.", replace the words "(under consideration)" by "(see IEC 61140)".

Page 87

5.3 Instructions for installation, operation and maintenance

Replace the first paragraph by the following:

The manufacturer shall specify in his documents or catalogues the conditions for installation, operation and maintenance, if any, of the equipment during operation and after a fault.

The manufacturer shall also specify the measures to be taken with regard to EMC, if any. For equipment only suitable in environment A (see 7.3.1) the manufacturer shall provide in the documentation the following notice:

NOTICE

This product has been designed for environment A. Use of this product in environment B may cause unwanted electromagnetic disturbances in which case the user may be required to take adequate mitigation measures.

Page 91

7.1.1.1 Resistance to abnormal heat and fire

Replace the second paragraph by the following:

Tests on equipment shall be made by the glow-wire end-product test of IEC 60695-2-1/0 and IEC 60695-2-1/1.

Replace, on page 93, the third paragraph after the note by the following:

Tests on materials shall be made in accordance with annex M. The hot wire ignition (HWI) and arc ignition (AI) test value requirements related to the material's flammability category shall conform to table M.1.

Page 93

7.1.2 Current-carrying parts and their connections

Replace the third paragraph by the following:

Compliance shall be verified by inspection and by conducting the test sequences according to the relevant product standard.

Delete the fourth paragraph.

Page 99

7.1.7.1 Constructional requirements

Insert, after the fourth paragraph, the following new paragraph and new note 1:

If required by the application, terminals and conductors may be connected by means of cable lugs for copper conductors only.

NOTE 1 Examples of overall dimensions of terminal lugs suitable to be directly connected to the stud terminals of equipment are given in annex F.

Rename the existing NOTE as NOTE 2.

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Page 101

7.1.8 Additional requirements for equipment provided with a neutral pole

Add, before the note, the following new paragraph:

If a pole having an appropriate short-circuit breaking and making capacity (see 2.5.14 and 2.5.15) is used as a neutral pole, then all poles, including the neutral pole, may operate substantially together.

Page 121

7.3 Electromagnetic compatibility (EMC)

Replace the existing subclause by the following new subclause:

7.3 Electromagnetic compatibility (EMC)

7.3.1 General

For products falling within the scope of this standard, two sets of environmental conditions are considered and are referred to as

- a) environment A;
- b) environment B.