

SLOVENSKI STANDARD

SIST EN 60947-4-3:2000/A1:2007

01-september-2007

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Low-voltage switchgear and controlgear -- Part 4-3: Contactors and motor-starters - AC semiconductor controllers and contactors for non-motor loads (IEC 60947-4-3:1999/A1:2006)

Niederspannungsschaltgeräte -- Teil 4-3: Schütze und Motorstarter - Halbleiter-Steuergeräte und -Schütze für nichtmotorische Lasten für Wechselspannung (IEC 60947-4-3:1999/A1:2006)

Appareillage a basse tension -- Partie 4-3: Contacteurs et démarreurs de moteurs - Gradateurs et contacteurs a semiconducteurs pour charges, autres que des moteurs, a courant alternatif (IEC 60947-4-3:1999/A1:2006)

Ta slovenski standard je istoveten z: EN 60947-4-3:2000/A1:2006

ICS:

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear
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SIST EN 60947-4-3:2000/A1:2007 **en,fr,de**

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**Low-voltage switchgear and controlgear
Part 4-3: Contactors and motor-starters -
AC semiconductor controllers and contactors for non-motor loads
(IEC 60947-4-3:1999/A1:2006)**

Appareillage à basse tension
Partie 4-3: Contacteurs
et démarreurs de moteurs -
Gradateurs et contacteurs
à semiconducteurs pour charges,
autres que des moteurs,
à courant alternatif
(CEI 60947-4-3:1999/A1:2006)

Niederspannungsschaltgeräte
Teil 4-3: Schütze und Motorstarter -
Halbleiter-Steuergeräte und -Schütze
für nichtmotorische Lasten
für Wechselspannung
(IEC 60947-4-3:1999/A1:2006)

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This amendment A1 modifies the European Standard EN 60947-4-3:2000; it was approved by CENELEC on 2006-11-01. 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, 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: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 17B/1486/FDIS, future amendment 1 to IEC 60947-4-3:1999, 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 A1 to EN 60947-4-3:2000 on 2006-11-01.

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) 2007-08-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2009-11-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of amendment 1:2006 to the International Standard IEC 60947-4-3:1999 was approved by CENELEC as an amendment to the European Standard without any modification.

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Replace Annex ZA of EN 60947-4-3:2000 by:

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-161 A1 A2	1990 1997 1998	International Electrotechnical Vocabulary (IEV) Chapter 161: Electromagnetic compatibility	- - -	- - -
IEC 60085	2004	Electrical insulation - Thermal classification	EN 60085	2004
IEC 60269-1 A1	1998 2005	Low-voltage fuses Part 1: General requirements	EN 60269-1 A1	1998 2005
IEC 60410	1973	Sampling plans and procedures for inspection by attributes	-	-
IEC 60439-1 A1	1999 2004	Low-voltage switchgear and controlgear assemblies Part 1: Type-tested and partially type-tested assemblies	EN 60439-1 A1	1999 2004
IEC 60664	Series	Insulation coordination for equipment within low-voltage systems	EN 60664-1	Series
IEC 60947-1	2004	Low-voltage switchgear and controlgear Part 1: General rules	EN 60947-1 + corr. November	2004 2004
IEC 60947-4-2 A1 A2	1999 2001 2006	Low-voltage switchgear and controlgear Part 4-2: Contactors and motor-starters - AC semiconductor motor controllers and starters	EN 60947-4-2 A1 A2	2000 2002 2006
IEC/TR 61000-2-1	1990	Electromagnetic compatibility (EMC) Part 2: Environment - Section 1: Description of the environment - Electromagnetic environment for low-frequency conducted disturbances and signalling in public power supply systems	-	-
IEC 61000-3-2 (mod) A1 + A2	2000 2001 2004	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 ¹⁾ A2	2000 2005

¹⁾ EN 61000-3-2 is superseded by EN 61000-3-2:2006, which is based on IEC 61000-3-2:2005.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-2	1995	Electromagnetic compatibility (EMC)	EN 61000-4-2	1995
A1	1998	Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	A1	1998
A2	2000		A2	2001
IEC 61000-4-3	2002	Electromagnetic compatibility (EMC)	EN 61000-4-3 ²⁾	2002
A1	2002	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	A1	2002
IEC 61000-4-4	1995	Electromagnetic compatibility (EMC)	EN 61000-4-4 ³⁾	1995
A1	2000	Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	A1	2001
A2	2001		A2	2001
IEC 61000-4-5	1995	Electromagnetic compatibility (EMC)	EN 61000-4-5 ⁴⁾	1995
A1	2000	Part 4-5: Testing and measurement techniques - Surge immunity test	A1	2001
IEC 61000-4-6	2003	Electromagnetic compatibility (EMC)	-	-
A1	2004	Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	-	-
A2	2006		-	-
IEC 61000-4-11	1994	Electromagnetic compatibility (EMC)	EN 61000-4-11 ⁵⁾	1994
A1	2000	Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	A1	2001
IEC 61131-2	2003	Programmable controllers Part 2: Equipment requirements and tests	EN 61131-2 + corr. August	2003 2003
CISPR 11 (mod) + A1 (mod)	2003 2004	Industrial scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement	EN 55011	200X ⁶⁾
CISPR 14-1	- ⁷⁾	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus Part 1: Emission	EN 55014-1	200X ⁶⁾

²⁾ EN 61000-4-3 is superseded by EN 61000-4-3:2006, which is based on IEC 61000-4-3:2006.

³⁾ EN 61000-4-4 is superseded by EN 61000-4-4:2004, which is based on IEC 61000-4-4:2004.

⁴⁾ EN 61000-4-5 is superseded by EN 61000-4-5:2006, which is based on IEC 61000-4-5:2005.

⁵⁾ EN 61000-4-11 is superseded by EN 61000-4-11:2004, which is based on IEC 61000-4-11:2004.

⁶⁾ To be published.

⁷⁾ Undated reference.

NORME
INTERNATIONALE
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IEC

60947-4-3

1999

AMENDEMENT 1
AMENDMENT 1
2006-10

Amendement 1

Appareillage à basse tension –

Partie 4-3:

**Contacteurs et démarreurs de moteurs –
Gradateurs et contacteurs à semiconducteurs
pour charges, autres que des moteurs,
à courant alternatif**

[SIST EN 60947-4-3:2000/A1:2007](https://standards.iteh.ai/catalog/standards/sist/62100d6e-2f25-4f98-a4a9-5c8fac27b8a5/sist-en-60947-4-3-2000-a1-2007)

<https://standards.iteh.ai/catalog/standards/sist/62100d6e-2f25-4f98-a4a9-5c8fac27b8a5/sist-en-60947-4-3-2000-a1-2007>

Amendment 1

Low-voltage switchgear and controlgear –

Part 4-3:

**Contactors and motor-starters –
AC semiconductor controllers and
contactors for non-motor loads**

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International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

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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/1486/FDIS	17B/1510/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 this amendment and the base publication will remain unchanged until the maintenance result 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.

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<https://standards.iteh.ai/catalog/standards/sist/62100d6e-2f25-4f98-a4a9-5c8fac27b8a5/sist-en-60947-4-3-2000-a1-2007>

CONTENTS

Modify the title of Clause 3 to read:

3 Definitions, symbols and abbreviations

Insert the following:

3.3 Symbols and abbreviations

Delete the subclause 5.9.

Insert, on page 5, the following:

Annex I (normative) Modified test circuit for short-circuit testing of semiconductor contactors and controllers

Annex J (informative) Flowchart for constructing bypassed semiconductor controllers tests

Table 17 – Temperature rise limits for insulated coils in air and in oil

Table 18 – Intermittent duty test cycle data

Page 11

1 Scope and object

Insert, after the third paragraph, the following new paragraph:

This standard characterizes controllers and contactors for use with or without bypass switching devices.

Replace, in the sixth paragraph, the first dashed item by the following:

- operation of a.c. and d.c. motors;

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2 Normative references

Replace the existing text of first paragraph by the following:

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.

Add, after IEC 60050(161), the following references:

Amendment 1 (1997) <https://standards.iteh.ai/catalog/standards/sist/62100d6e-2f25-4f98-a4a9-5c8fac27b8a5/sist-en-60947-4-3-2000-a1-2007>
Amendment 2 (1998)

Insert the following new reference:

IEC 60085:2004, *Electrical insulation – Thermal classification*

Add, after IEC 60269-1, the following reference:

Amendment 1 (2005) ¹⁾

Replace the reference to IEC 60439-1:1992 by the following:

IEC 60439-1:1999, *Low-voltage switchgear and controlgear assemblies – Part 1: Type-tested and partially type-tested assemblies*
Amendment 1 (2004) ²⁾

Replace the reference to IEC 60947-1:1999 by the following:

IEC 60947-1:2004, *Low-voltage switchgear and controlgear – Part 1: General rules*

¹⁾ A consolidated edition 3.1 (2005) exists, that includes edition 3.0 and its amendment.

²⁾ A consolidated edition 4.1 (2004) exists, that includes edition 4.0 and its amendment.

Replace the reference to IEC 60947-4-2:1995 by the following:

IEC 60947-4-2:1999, *Low-voltage switchgear and controlgear – Part 4-2: Contactors and motor-starters – AC semiconductor motor controllers and starters*

Amendment 1 (2001)

Amendment 2 ³⁾

Replace the reference to IEC 61000-3-2:1995 by the following:

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

Amendment 1 (2001)

Amendment 2 (2004)

Delete the reference to IEC 61000-4 (all parts).

Add, after IEC 61000-4-2, the following references:

Amendment 1 (1998)

Amendment 2 (2000) ⁴⁾

Replace the reference to IEC 61000-4-3:1995 by the following:

IEC 61000-4-3:2002, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated radio-frequency electromagnetic field immunity test*

Amendment 1 (2002)

Add, after IEC 61000-4-4, the following references:

Amendment 1 (2000)

Amendment 2 (2001)

Add, after IEC 61000-4-5, the following reference:

Amendment 1 (2000)

Replace the reference to IEC 61000-4-6:1996 by the following:

IEC 61000-4-6:2003, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

Amendment 1 (2004)

Amendment 2 (2006) ⁵⁾

Add, after IEC 61000-4-11, the following reference:

Amendment 1 (2000)

³⁾ To be published.

⁴⁾ A consolidated edition 1.2 (2001) exists, that includes edition 1.0 and its amendments 1 and 2.

⁵⁾ A consolidated edition 2.2 (2006) exists, that includes edition 2.0 and its amendments 1 and 2.

Insert the following new reference:

IEC 61131-2:2003, *Programmable controllers – Part 2: Equipment requirements and tests*

Replace the reference to CISPR 11:1997 by the following:

CISPR 11:2003, *Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement*
Amendment 1 (2004) ⁶⁾

Replace the reference to CISPR 14-1:1993 by the following:

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

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3 Definitions

Replace the existing title by the following:

3 Definitions, symbols and abbreviations

Insert, after the first paragraph the following alphabetical index of definitions:

iTeh STANDARD PREVIEW (standards.iteh.ai)	
SIST EN 60947-4-3:2000/A1:2007 https://standards.iteh.ai/catalog/standards/sist/62100d6e-2f25-4f98-a4a9-5c8fac27b8a5/sist-en-60947-4-3-2000-a1-2007	Reference
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⁶⁾ A consolidated edition 4.1 (2004) exists, that includes edition 4.0 and its amendment.

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