



SLOVENSKI STANDARD
SIST EN 60947-4-1:2002/A2:2006
01-januar-2006

**Nizkonapetostne stikalne naprave - 4-1. del: Kontaktorji in motorski zaganjalniki -
Elektromehanski kontaktorji in motorski zaganjalniki (IEC 60947-4- 1:2000/A2:2005)**

Low-voltage switchgear and controlgear -- Part 4-1: Contactors and motor-starters -
Electromechanical contactors and motor-starters

Niederspannungsschaltgeräte -- Teil 4-1: Schütze und Motorstarter -
Elektromechanische Schütze und Motorstarter

Appareillage à basse tension -- Partie 4-1: Contacteurs et démarreurs de moteurs -
Contacteurs et démarreurs électromécaniques

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Ta slovenski standard je istoveten z: EN 60947-4-1:2001/A2:2005

ICS:

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear
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SIST EN 60947-4-1:2002/A2:2006 **en**

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EUROPEAN STANDARD

EN 60947-4-1/A2

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2005

ICS 29.130.20; 29.120.99

English version

**Low-voltage switchgear and controlgear
Part 4-1: Contactors and motor-starters –
Electromechanical contactors and motor-starters
(IEC 60947-4-1:2000/A2:2005)**

Appareillage à basse tension
Partie 4-1: Contacteurs et démarreurs
de moteurs –
Contacteurs et démarreurs
électromécaniques
(CEI 60947-4-1:2000/A2:2005)

Niederspannungsschaltgeräte
Teil 4-1: Schütze und Motorstarter -
Elektromechanische Schütze und
Motorstarter
(IEC 60947-4-1:2000/A2:2005)

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This amendment A2 modifies the European Standard EN 60947-4-1:2001; it was approved by CENELEC on 2005-07-01. 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, 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

Foreword

The text of document 17B/1412/FDIS, future amendment 2 to IEC 60947-4-1:2000, 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 60947-4-1:2001 on 2005-07-01.

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) 2006-04-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2008-07-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of amendment 2:2005 to the International Standard IEC 60947-4-1:2000 was approved by CENELEC as an amendment to the European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60664-1 NOTE Harmonized as EN 60664-1:2003 (not modified).
<https://standards.iteh.ai/catalog/standards/sist/520662ff-f4c1-4a56-a24b-8cd2297c2b49/sist-en-60947-4-1-2002-a2-2006>

Replace Annex ZA of EN 60947-4-1:2001/A1:2002 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 Where 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 60034-1	2004	Rotating electrical machines Part 1: Rating and performance	EN 60034-1	2004
IEC 60034-11	2004	Part 11: Thermal protection	EN 60034-11	2004
IEC 60050-441	1984	International Electrotechnical Vocabulary (IEV) Chapter 441: Switchgear, controlgear and fuses	-	-
A1	2000		-	-
IEC 60076-1 (mod)	1993	Power transformers Part 1: General	EN 60076-1 A11	1997
A1	1999		A1 A12	1997 2000 2002
IEC 60085	2004	Electrical insulation - Thermal classification	EN 60085	2004
IEC 60112	2003	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	2003
IEC 60255-8 (mod)	1990	Electrical relays Part 8: Thermal electrical relays	EN 60255-8	1998
IEC 60269-1	1998	Low-voltage fuses Part 1: General requirements	EN 60269-1	1998
IEC 60269-2	1986	Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application)	EN 60269-2	1995
A1	1995		A1	1998
A2	2001		A2	2002
IEC 60269-2-1 (mod)	2004	Part 2-1: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) -- Sections I to VI: Examples of types of standardized fuses	HD 60269-2-1	2005

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60410	1973	Sampling plans and procedures for inspection by attributes	-	-
IEC 60947-1	2004	Low-voltage switchgear and controlgear Part 1: General rules	EN 60947-1 + corr. November	2004 2004
IEC 60947-2	2003	Part 2: Circuit-breakers	EN 60947-2	2003
IEC 60947-3	1999	Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units	EN 60947-3	1999
A1	2001		A1	2001
IEC 60947-5-1	2003	Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices	EN 60947-5-1 + corr. July	2004 2005
IEC 61000-4-2	1995	Electromagnetic compatibility (EMC) Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995
A1	1998		A1	1998
A2	2000		A2	2001
IEC 61000-4-3	2002	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2002
A1	2002		A1	2002
IEC 61000-4-4	1995	Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4 ¹⁾	1995
A1	2000		A1	2001
A2	2001		A2	2001
IEC 61000-4-5	1995	Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	1995
A1	2000		A1	2001
IEC 61095	1992	Electromechanical contactors for household and similar purposes	EN 61095	1993
A1	2000		A1 + A1/corr. April	2000 2001
IEC 61810-1	2003	Electromechanical elementary relays Part 1: General and safety requirements	EN 61810-1	2004
CISPR 11	2003	Industrial scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement	-	-

¹⁾ EN 61000-4-4 is superseded by EN 61000-4-4:2005, which is based on IEC 61000-4-4:2004.

**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC**

60947-4-1

2000

AMENDEMENT 2
AMENDMENT 2
2005-06

Amendement 2

Appareillage à basse tension –

Partie 4-1:

**Contacteurs et démarreurs de moteurs –
Contacteurs et démarreurs électromécaniques**

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Amendment 2

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Low-voltage switchgear and controlgear –

Part 4-1:

**Contactors and motor-starters –
Electromechanical contactors and
motor-starters**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

V

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/1412/FDIS	17B/1421/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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Change, throughout the standard, ~~“solid state”~~ by ~~“electronic”~~.
<https://standards.iteh.ai/catalog/standards/sist/520662ff-f4c1-4a56-a24b-8cd2297c2b49/sist-en-60947-4-1-2002-a2-2006>

Page 3 and amendment 1, page 3

CONTENTS

Modify the title of Clause 3 to read:

3 Terms, definitions, symbols and abbreviations

Insert the following:

3.4 Symbols and abbreviations

Replace “5.9 Switching overvoltages” by “5.9 Vacant”.

Add, on page 5, the title of the new Annexes G, H and I:

Annex G (informative) Rated operational currents and rated operational powers of switching devices for electrical machines

Annex H (normative) Extended functions within electronic overload relays

Annex I (informative) AC1 contactors for use with semiconductor controlled motor loads

Add, on page 5, the title of new Figures 8 and H.1:

Figure 8 – Thermal memory test

Figure H.1 – Test circuit for the verification of the operating characteristic of a residual current electronic overload relay

Modify, on page 5, the title of Table 2 to read:

Table 2 – Trip classes of overload relays

Modify, on page 5, the title of Table 4 to read:

Table 4 – Limits of operation of three-pole time-delay overload relays when energized on two poles only

[SIST EN 60947-4-1:2002/A2:2006
https://standards.iteh.ai/catalog/standards/sist/520662ff-f4c1-4a56-a24b-8cd2297c2b49/sist-en-60947-4-1-2002-a2-2006](https://standards.iteh.ai/catalog/standards/sist/520662ff-f4c1-4a56-a24b-8cd2297c2b49/sist-en-60947-4-1-2002-a2-2006)

Add, on page 7, the title of new Tables G.1 and H.1

Table G.1 – Rated operational power and currents

Table H.1 – Operating time of residual current electronic overload relays

Page 9

FOREWORD

Replace, on page 11, the two last paragraphs, by the following:

Annexes A, B, F and H form an integral part of this standard.

Annexes D, E, G and I are for information only.

Page 19 and amendment 1, page 5

2 Normative references

Replace the existing text of the 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.

Replace the reference to IEC 60034-1:1996 by the following:

IEC 60034-1:2004, *Rotating electrical machines – Part 1: Rating and performance*

Replace the reference to IEC 60034-11:1978 by the following:

IEC 60034-11:2004, *Rotating electrical machines – Part 11: Thermal protection*

Add, after IEC 60050(441), the following reference:

Amendment 1 (2000)

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Replace the reference to IEC 60085:1984 by the following:

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

Replace the reference to IEC 60112:1979 by the following:

IEC 60112:2003, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

Replace the reference to IEC 60269-2-1:1998 by the following:

IEC 60269-2-1:2004, *Low-voltage fuses – Part 2-1: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) – Sections I to VI: Examples of types of standardized fuses*

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

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

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

IEC 60947-2:2003, *Low-voltage switchgear and controlgear – Part 2: Circuit-breakers*

Replace the reference to IEC 60947-5-1:1997 by the following:

IEC 60947-5-1:2003, *Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices*

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)

Replace the reference to IEC 61810-1:1998 by the following:

IEC 61810-1:2003, *Electromechanical elementary relays – Part 1: General and safety requirements*

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)

Page 21

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3 Definitions

Replace the existing title by the following:

<https://standards.iteh.ai/catalog/standards/sist/520662ff-f4c1-4a56-a24b-8cd229712b49/sist-en-60947-4-1-2002-a2-2006>

3 Terms, definitions, symbols and abbreviations

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

	Reference
A	
Auto-transformer starter.....	3.2.5.2
C	
Close transition (with an auto-transformer starter or star-delta starter).....	3.2.23
Combination starter	3.2.8
Combination switching device	3.2.27
Contactors (mechanical).....	3.1.1
D	
Direct-on-line starter	3.2.2
E	
Electromagnetic contactor.....	3.1.2
Electromagnetic starter	3.2.10
Electronic overload relay with current or voltage asymmetry function.....	H.2.2
Electronic overload relay with phase reversal function	H.2.3
Electronic overload relay with residual current (earth fault) function.....	H.2.1
Electronically controlled coil for electromagnet	3.1.8
Electro-pneumatic contactor	3.1.4
Electro-pneumatic starter.....	3.2.13

Inching (jogging)	3.2.24
Inhibit current	H.2.5
Inhibit time	3.2.30
J	
Jam sensitive electronic overload relay	3.2.29
L	
Latched contactor	3.1.5
M	
Manual starter	3.2.9
Mirror contact	F.2.1
Motor-operated starter	3.2.11
N	
<i>n</i> -step starter	3.2.16
O	
Open transition (with an auto-transformer starter or star-delta starter)	3.2.22
Over-voltage sensitive electronic overload relay	H.2.4
P	
Phase loss sensitive thermal overload relay or release	3.2.17
Plugging	3.2.25
Pneumatic contactor	3.1.3
Pneumatic starter	3.2.12
Position of rest (of a contactor)	3.1.7
Protected starter	3.2.7
Protected switching device	3.2.26
R	
Reduced voltage starter	3.2.5
Reversing starter	3.2.3
Rheostatic rotor starter	3.2.6.2
Rheostatic starter	3.2.6
Rheostatic stator starter	3.2.6.1
S	
Single-step starter	3.2.14
Stall sensitive electronic overload relay	3.2.28
Star-delta starter	3.2.5.1
Starter	3.2.1
Starting time (of a rheostatic starter)	3.2.20
Starting time (of an auto-transformer starter)	3.2.21
T	
Two-direction starter	3.2.4
Two-step starter	3.2.15
U	
Under-current relay or release	3.2.18
Under-voltage relay or release	3.2.19
V	
Vacuum contactor (or starter)	3.1.6