



SLOVENSKI STANDARD SIST EN 60947-2:1995

01-december-1995

Low-voltage switchgear and controlgear - Part 2: Circuit-breakers (IEC 947-2:1989 + Corrigendum Jun. 1989 + Apr. 1990)

Low-voltage switchgear and controlgear -- Part 2: Circuit-breakers

Niederspannungsschaltgeräte -- Teil 2: Leistungsschalter

Appareillage à basse tension -- Partie 2: Disjoncteurs

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Ta slovenski standard je istoveten z: EN 60947-2:1991/A1:1993

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ICS:

29.130.20	Niskonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear
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EUROPEAN STANDARD

EN 60947-2

NORME EUROPEENNE

EUROPÄISCHE NORM

October 1991

UDC 621.316.542:620.1

Supersedes HD 418.1 S1:1982

Descriptors: Low-voltage switchgear and controlgear, circuit-breaker,
definition, classification, characteristics, test

ENGLISH VERSION

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR
PART 2: CIRCUIT-BREAKERS
(IEC 947-2:1989 + corrigenda 1989/1990)

Appareillage à basse tension
Deuxième partie: Disjoncteurs
(CEI 947-2:1989 +
corrigenda 1989/1990)

Niederspannung-Schaltgeräte
Teil 2: Leistungsschalter
(IEC 947-2:1989 +
Corrigenda 1989/1990)

This European Standard was approved by CENELEC on 1991-03-15.
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which stipulate the conditions for giving this European Standard the status of
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Up-to-date lists and bibliographical references concerning such national standards
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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 Central Secretariat
has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium,
Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg,
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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

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Ref. No. EN 60947-2:1991 E

FOREWORD

The CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 947-2:1989 and its corrigenda of 1989 and 1990 could be accepted without textual changes, has shown that no CENELEC common modifications were necessary for the acceptance as European Standard. The reference document was submitted to the CENELEC members for formal vote and was approved by CENELEC as EN 60947-2 on 15 March 1991.

This European Standard supersedes HD 418.1 S1:1982.

The following dates were fixed:

- latest date of publication of
an identical national standard (dop) 1992-06-30
- latest date of withdrawal of
conflicting national standards (dow) 1992-09-30

Annexes designated "normative" are part of the body of the standard. In this standard, annex ZA is normative.

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INTRODUCTION

All subjects left "under consideration" in IEC 947-2:1989 are not part of this European Standard.

This means that:

- for the following clauses the title and text are to be replaced by "Vacant":

Appendix B Circuit-breakers incorporating residual current protection

- in the following clauses the appropriate paragraphs or notes are to be deleted:

- 7.2.6 Switching overvoltages
- 7.2.7 Additional requirements for circuit-breakers suitable for isolation
- 8.1.3 Routine or sampling tests include the following tests
- 8.3.2 General test conditions
 - 8.3.2.1 General requirements
 - 8.3.3.1.3 Opening under overload conditions
 - 8.3.3.1.4 Additional test for definite time-delay releases

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Up-to-date information concerning the subjects dealt with in these clauses can be obtained from the secretariat of CENELEC TC 17B.

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ENDORSEMENT NOTICE

The text of the International Standard IEC 947-2:1989 and its corrigenda of 1989 and 1990 was approved by CENELEC as a European Standard without any modification.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

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

IEC				
<u>Publication</u>	<u>Date</u>	<u>Title</u>	<u>EN/HD</u>	<u>Date</u>
50(441)	1984	International Electrotechnical Vocabulary (IEV) - Chapter 441: Switchgear, controlgear and fuses	-	-
112	1979	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	HD 214 S2	1980
269-1	1986	Low-voltage fuses - Part 1: General requirements	EN 60269-1	1989
269-2	1986	Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application)	-	-
269-3	1987	Part 3: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications)	-	-
755	1983	General requirements for residual current operated protective devices	-	-
898, mod	1987	Circuit-breakers for overcurrent protection for household and similar installations	EN 60898* + corr	1991 1991
934, mod	1988	Circuit-breakers for equipment (CBE)	EN 60934	1990
947-1, mod	1988	Low-voltage switchgear and controlgear Part 1: General rules	EN 60947-1	1991
947-4	1989	Part 4: Contactors and motor-starters (Under consideration)	-	-

* EN 60898 includes IEC 898 + corrigendum May 1988 + A2:1989 + A3:1990 + corrigendum August 1990

EUROPEAN STANDARD

EN 60947-2/A1

NORME EUROPEENNE

EUROPÄISCHE NORM

April 1993

UDC 621.316.542:620.1

Descriptors: Low-voltage switchgear and controlgear, circuit-breaker, definition, classification, characteristics, test

Amendment A1 to the English version of EN 60947-2

Low-voltage switchgear and controlgear
Part 2: Circuit-breakers
(IEC 947-2:1989/A1:1992)

Appareillage à basse tension
Deuxième partie: Disjoncteurs
(CEI 947-2:1989/A1:1992)

Niederspannung-Schaltgeräte
Teil 2: Leistungsschalter
(IEC 947-2:1989/A1:1992)

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This amendment A1 modifies the European Standard EN 60947-2:1991. It was approved by CENELEC on 1993-03-09. 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, 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 -

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Ref. No. EN 60947-2:1991/A1:1993 E

FOREWORD

At the request of the CENELEC Technical Committee TC 17B, Low-voltage switchgear and controlgear including dimensional standardization, the text of amendment 1:1992 to the International Standard IEC 947-2:1989 was submitted to the CENELEC Unique Acceptance Procedure (UAP) in April 1992 for acceptance as a European Standard.

The text of the amendment to the International Standard was approved by CENELEC as amendment A1 to EN 60947-2 on 9 March 1993.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1994-03-01
- latest date of withdrawal of conflicting national standards (dow) 1994-03-01

For products which have complied with EN 60947-2:1991 before 1994-03-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1999-03-01.

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Annexes designated "normative" are part of the body of the standard. In this standard, annex ZA is normative.

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ENDORSEMENT NOTICE

The text of amendment 1:1992 to the International Standard IEC 947-2:1989 was approved by CENELEC as an amendment to the European Standard without any modification.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

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

IEC Publication	Date	Title	EN/HD	Date
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68-2-30	1980	Environmental testing Part 2: Tests - Test Db and guidance: Damp heat, cyclic (12 + 12-hour cycle)	HD 323.2.30 S3*	1988
364-4-41	1982*	Electrical installations of buildings Part 4: Protection for safety Chapter 41: Protection against electric shock	-	-
1008	series	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's)	-	-
1009	series	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's)	-	-

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* HD 323.2.30 S3 includes A1:1985 to IEC 68-2-30
IEC 364-4-41:1977 was harmonized as HD 384.4.41 S1:1980

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NORME
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CEI
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Appareillage à basse tension

Deuxième partie:
Disjoncteurs

iTeh STANDARD PREVIEW
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Low-voltage switchgear and controlgear

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Part 2:
Circuit-breakers

DESKRIPTORJI: NIZOVNAPETOSKI ENERGIJSKI I OSIGURAVNI TOVOKROBU; ZAŠCITA TOVOKROBU; ELEKTRICNA ZAŠCITA; TRETOKOVNA ZAŠCITA



Numéro de référence
Reference number
CEI/IEC 947-2: 1989

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR**Part 2: Circuit-breakers**

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.
- 4) The IEC has not laid down any procedure concerning marking as an indication of approval and has no responsibility when an item of equipment is declared to comply with one of its recommendations.

iTeh STANDARD PREVIEW
 PREFACE
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This standard has been prepared by Sub-Committee 17B: Low-voltage switchgear and controlgear, of IEC Technical Committee No. 17: Switchgear and controlgear.

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

Six Months' Rule	Reports on Voting	Two Months' Procedure	Reports on Voting
17B(CO) 127 17B(CO) 135	17B(CO) 131 and 131A 17B(CO) 146	17B(CO) 150 17B(CO) 165	17B(CO) 157 17B(CO) 172

Full information on the voting for the approval of this standard can be found in the Voting Reports indicated in the above table.

The following IEC publications are quoted in this standard:

- Publications Nos. 50 (441) (1984): International Electrotechnical Vocabulary (IEV), Chapter 441; Switchgear, controlgear and fuses.
- 112 (1979): Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions.
- 269-1 (1986): Low-voltage fuses, Part 1: General requirements.
- 269-2 (1986): Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application).
- 269-3 (1987): Part 3: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications).
- 755 (1983): General requirements for residual current operated protective devices.
- 898 (1987): Circuit-breakers for overcurrent protection for household and similar installations.
- 934 (1988): Circuit-breakers for equipment (CBE).
- 947-1 (1988): Low-voltage switchgear and controlgear, Part 1: General rules.
- 947-4 (1989): Part 4: Contactors and motor-starters. (Under consideration.)

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR

Part 2: Circuit-breakers

1. General

The provisions of the general rules dealt with in Part 1 (IEC Publication 947-1) are applicable to this standard, where specifically called for. Clauses and sub-clauses, tables, figures and appendices of the general rules thus applicable are identified by reference to Part 1, e.g., Sub-clause 1.2.3 of Part 1, Table IV of Part 1, or Appendix A of Part 1.

1.1 Scope

This standard applies to circuit-breakers, the main contacts of which are intended to be connected to circuits, the rated voltage of which does not exceed 1000 V a.c. or 1500 V d.c.; it also contains additional requirements for integrally fused circuit-breakers.

It applies whatever the rated currents, the method of construction or the proposed applications of the circuit-breakers may be.

Supplementary requirements for circuit-breakers used as direct-on-line starters are given in IEC Publication 947-4, applicable to low-voltage contactors and starters.

The requirements for circuit-breakers for the protection of wiring installations in buildings and similar applications, and designed for use by uninstructed persons, are contained in IEC Publication 898.

The requirements for circuit-breakers for equipment (e.g. electrical appliances) are contained in IEC Publication 934.

The requirements for circuit-breakers which are also intended to provide earth-leakage protection are under consideration (see also IEC Publication 755).

For certain specific applications (e.g. traction, rolling mills, marine service) particular or additional requirements may be necessary.

Note. - Circuit-breakers which are dealt with in this standard may be provided with devices for automatic opening under pre-determined conditions other than those of over-current and undervoltage as, for example, reversal of power or current. This standard does not deal with the verification of operation under such pre-determined conditions.

1.2 Object

The object of this standard is to state:

- a) the characteristics of circuit-breakers;
- b) the conditions with which circuit-breakers shall comply with reference to:
 - 1) operation and behaviour in normal service;
 - 2) operation and behaviour in case of overload and operation and behaviour in case of short circuit, including co-ordination in service (discrimination and back-up protection);
 - 3) dielectric properties;