



SLOVENSKI STANDARD
SIST EN 60947-3:1998/A2:1999
01-julij-1999

Low-voltage switchgear and controlgear -- Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units. Amendment A2 (IEC 60947-3:1990/A2:1997)

Low-voltage switchgear and controlgear -- Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units

Niederspannungsschaltgeräte -- Teil 3: Lastschalter, Trennschalter, Lasttrennschalter und Schalter-Sicherungs-Einheiten

Appareillage à basse tension -- Partie 3: Interrupteurs, sectionneurs, interrupteurs-sectionneurs et combinés-fusibles

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Ta slovenski standard je istoveten z: EN 60947-3:1992/A2:1997

ICS:

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear
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SIST EN 60947-3:1998/A2:1999 **en**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60947-3/A2

June 1997

UDC 621.316.5.027.2:620.1
ICS 29.120.40

Descriptors: Low-voltage switchgear and controlgear, switches, disconnectors, switch-disconnectors, fuse-combination units

English version

**Low-voltage switchgear and controlgear
Part 3: Switches, disconnectors, switch-disconnectors
and fuse-combination units
(IEC 60947-3:1990/A2:1997)**

Appareillage à basse tension
Partie 3: Interrupteurs, sectionneurs,
interrupteurs-sectionneurs et
combinés-fusibles
(CEI 60947-3:1990/A2:1997)

Niederspannung-Schaltgeräte
Teil 3: Lastschalter, Trennschalter,
Lasttrennschalter und
Schalter-Sicherungs-Einheiten
(IEC 60947-3:1990/A2:1997)

SIST EN 60947-3:1998/A2:1999

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This amendment A2 modifies the European Standard EN 60947-3:1992; it was approved by CENELEC on 1997-03-11. 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

Foreword

The text of document 17B/768/FDIS, future amendment 2 to IEC 60947-3:1990, 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 60947-3:1992 on 1997-03-11.

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) 1997-10-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 1997-10-01

Endorsement notice

The text of amendment 2:1997 to the International Standard IEC 60947-3:1990 was approved by CENELEC as an amendment to the European Standard without any modification.

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**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC**

60947-3

1990

AMENDEMENT 2
AMENDMENT 2

1997-03

Amendement 2

Appareillage à basse tension –

Partie 3:

**Interrupteurs, sectionneurs, interrupteurs-
sectionneurs et combinés-fusibles**

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Amendment 2

SIST EN 60947-3:1998/A2:1999

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Low-voltage switchgear and controlgear –

Part 3:

**Switches, disconnectors, switch-disconnectors
and fuse-combination units**

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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/768/FDIS	17B/815/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.

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1.1 Scope

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

Auxiliary switches fitted to equipment within the scope of this standard shall comply with the requirements of IEC 60947-5-1.

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5.2 Marking

Replace the beginning of the text of this subclause by the following:

5.2 Marking

Each equipment shall be marked in a durable and legible manner with the following data:

The markings for a), b) and c) below shall be on the equipment itself or on a name-plate or name-plates attached to the equipment, and shall be located at a place such that they are legible from the front after mounting the equipment in accordance with the manufacturer's instructions.

a) Indication of the open and closed position. The open or closed position shall be respectively indicated by the graphical symbols 417-IEC-5007 or 417-IEC-5008 of IEC 60417 (see 7.1.5.1 of part 1).

b) Suitability for isolation

The appropriate symbols of table I shall be used.

c) Additional marking for disconnectors

Devices of utilization category AC-20A, AC-20B, DC-20A and DC-20B shall be marked "Do not open under load" unless the device is interlocked to prevent such opening.

NOTE – Symbols of the various types of equipment are given in table I.

The following data shall also be marked on the equipment but need not be visible from the front when the equipment is mounted:

d) Manufacturer's...

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Add after 7.1.6.1 the following new subclauses:

7.1.6.2 Supplementary requirements for equipment with provision for electrical interlocking with contactors or circuit-breakers

If equipment suitable for isolation is provided with an auxiliary switch for the purpose of electrical interlocking with contactor(s) or circuit-breaker(s) and intended to be used in motor circuits, the following requirements shall apply unless the equipment is rated for AC-23 utilization category.

An auxiliary switch shall be rated according to IEC 60947-5-1 as stated by the manufacturer.

The time interval between the opening of the contacts of the auxiliary switch and the contacts of the main poles shall be sufficient to ensure that the associated contactor or circuit-breaker interrupts the current before the main poles of the equipment open.

Unless otherwise stated in the manufacturer's technical literature, the time interval shall be not less than 20 ms when the equipment is operated according to the manufacturer's instructions.

Compliance shall be verified by measuring the time interval between the instant of opening of the auxiliary switch and the instant of opening of the main poles under no-load conditions when the equipment is operated according to the manufacturer's instructions.

During the closing operation the contacts of the auxiliary switch shall close after or simultaneously with the contacts of the main poles.

A suitable opening time interval may also be provided by an intermediate position (between the ON and OFF positions) at which the interlocking contact(s) is (are) open and the main poles remain closed.

7.1.6.3 Supplementary requirements for equipment provided with means for padlocking the open position

The locking means shall be designed in such a way that it cannot be removed with the appropriate padlock(s) installed. When the equipment is locked by even a single padlock, it shall not be possible by operating the actuator, to reduce the clearance between open contacts to the extent that it no longer complies with the requirements of 7.2.3.1b) of part 1.

Alternatively, the design may provide padlockable means to prevent access to the actuator.

Compliance with the requirements to padlock the actuator shall be verified using a padlock specified by the manufacturer or an equivalent gauge, giving the most adverse conditions, to simulate locking. The force F , specified in 8.2.5.2 shall be applied to the actuator in an attempt to operate the equipment from the open position to the closed position. Whilst the force F is applied, the equipment shall be subjected to a test voltage across open contacts. The equipment shall be capable of withstanding the test voltage required according to table XIV appropriate to the rated impulse withstand voltage.

NOTE – If the same requirements for 7.1.6.3 above are also approved for IEC 60947-1, these requirements for IEC 60947-3 will be withdrawn.

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Add, after 7.2.8, the following new subclause:

7.2.9 Overload requirements for equipment incorporating fuses

The main circuit of an equipment shall be capable of carrying an overload current according to 8.3.7.1 and shall not cause any damage of a nature which impairs the subsequent performance of the equipment in test sequence V.

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Table VII

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Add, under Test column, "Overload test" and indicate "o" for Fuse-switch; Switch-fuse; Disconnecter-fuse; Fuse-disconnector; Switch-disconnector-fuse; and Fuse-switch-disconnector. Indicate "-" for Switch; Disconnecter; and Switch-disconnector.

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8.3.1 Test sequences

Add to the second paragraph:

", apart from the temperature-rise and dielectric properties test of test sequence I, which may with the manufacturer's agreement be conducted on a separate sample."

Table VIII

Add heading for fifth sequence under the column Sequence "Overload performance capability (4) (see 8.3.7 and table XIV).

Add under column Tests "Overload test, Dielectric verification, Leakage current (2), Temperature-rise verification".

At the bottom of the table add "(4) Not required for switches, disconnectors and switch-disconnectors".

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8.3.3.3.1

This correction applies to the French text only.

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Add, after 8.3.6.5, the following new subclauses:

8.3.7 Test sequence V: Overload performance capability.

8.3.7.1 *Overload test*

The equipment shall first be temperature conditioned at room temperature. The test current is $1,6 I_{the}$ or $1,6 I_{th}$ (see 4.3.2.2 of part 1) for a period of 1 h, or until one or more of the fuses blow.

Subclause 8.3.3.1 applies with the exception that no temperatures have to be measured.

Within 3 min after the fuse(s) has(have) operated, the equipment shall be operated once, i.e. opened and closed. The equipment shall not have undergone any impairment hindering such operation.

The time duration of the overload test shall be measured and given in the test report.

8.3.7.2 *Dielectric verification*

Subclause 8.3.3.4 applies.

8.3.7.3 *Leakage current*

Subclause 8.3.3.5 applies.

8.3.7.4 *Temperature-rise verification*

Subclause 8.3.3.6 applies with the addition of the following:

Fuse-links aged during the overload test according to 8.3.7.1 shall be replaced by new fuse-links of the same type and rating.