



**SLOVENSKI STANDARD**  
**SIST EN 60947-1:1999/A1:1999**  
**01-julij-1999**

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**Low-voltage switchgear and controlgear - Part 1: General rules. Amendment A1  
(IEC 60947-1:1996/A1:1997)**

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 60947-1:1997/A1:1998**

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**ICS:**

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear
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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60947-1/A1**

January 1998

ICS 29.120.60

Descriptors: Low-voltage switchgear and controlgear, characteristics, specification, test

English version

**Low-voltage switchgear and controlgear**  
**Part 1: General rules**  
(IEC 60947-1:1996/A1:1997)

Appareillage à basse tension.  
Partie 1: Règles générales  
(CEI 60947-1:1996/A1:1997)

Niederspannungsschaltgeräte  
Teil 1: Allgemeine Festlegungen  
(IEC 60947-1:1996/A1:1997)

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This amendment A1 modifies the European Standard EN 60947-1:1997; it was approved by CENELEC on 1998-01-01. 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, Czech Republic, 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/855/FDIS, future amendment 1 to IEC 60947-1:1996, 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 60947-1:1997 on 1998-01-01.

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) 1998-10-01
- latest date by which the national standards conflicting  
with the amendment have to be withdrawn (dow) 1998-10-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annexes N and ZA are normative.  
Annex ZA has been added by CENELEC.

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### Endorsement notice

The text of amendment 1:1997 to the International Standard IEC 60947-1:1996 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

Addition:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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 60947-5-1	1997	Low-voltage switchgear and controlgear Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices	EN 60947-5-1 + A11	1997 1997

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NORME  
INTERNATIONALE

CEI  
IEC

INTERNATIONAL  
STANDARD

60947-1

1996

AMENDEMENT 1  
AMENDMENT 1  
1997-12

Amendement 1

Appareillage à basse tension –

Partie 1:  
Règles générales

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Amendment 1

SIST EN 60947-1:1999/A1:1999

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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

H

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

## 7.1.6 Additional constructional requirements for equipment suitable for isolation

*Replace the title of this subclause by the following titles:*

### 7.1.6 Additional requirements for equipment suitable for isolation

#### 7.1.6.1 Additional constructional requirements

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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 of 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).

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



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### 8.2.5.3.2 Dependent and independent power operation

*Replace “Under consideration” by the following text:*

During and after the test, the open position shall not be indicated by any of the means provided and the equipment shall not show any damage such as to impair its normal operation.

When the equipment is provided with means for locking in the open position, it shall not be possible to lock the equipment during the test.

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*Add the following new subclause:*

### 8.3.3.4.4 Tests for equipment with protective separation

Tests for equipment with protective separation are given in annex N.

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*Add the following new annex N:*

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Annex N  
(normative)

SIST EN 60947-1:1999/A1:1999

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## Requirements and tests for equipment with protective separation

This annex applies to a device one or more circuits of which being able to be used in SELV (PELV) circuit (the device by itself may not be Class III – see IEC 60536-2, subclause 5.2.4.

### N.1 General

The purpose of this annex is to harmonise as far as practicable all rules and requirements applicable to low voltage switchgear and controlgear having a protective separation between parts intended to be used in SELV (PELV) circuits and others, in order to obtain uniformity of requirements and tests and to avoid the need for testing to different standards.

### N.2 Definitions

#### N.2.1 Functional insulation

Insulation between conductive parts which is necessary only for the proper functioning of the equipment.

#### N.2.2 Basic insulation

Insulation of hazardous live parts which provides basic protection against electric shock.

NOTE – The term basic insulation does not apply to insulation used exclusively for functional purposes. (See N.2.1)