



**SLOVENSKI STANDARD**  
**SIST EN 60947-4-1:1995/A2:1998**  
**01-september-1998**

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**Nizkonapetostne stikalne in krmilne naprave - 4. del: Kontaktorji in motorski zaganjalniki - 1. oddelek: Elektromehanski kontaktorji in motorski zaganjalniki – Dopolnilo A2**

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

**Ta slovenski standard je istoveten z: EN 60947-4-1:1992/A2:1997**

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**ICS:**

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear
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**SIST EN 60947-4-1:1995/A2:1998**      **en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN 60947-4-1/A2

June 1997

UDC 621.316.5.027.2  
ICS 29.120.60

Descriptors: Electrical switchgear and controlgear, low-voltage switchgear and controlgear, control equipment, contactor, starter, short-circuit protection, overload protection, characteristics, test

English version

**Low-voltage switchgear and controlgear**  
**Part 4: Contactors and motor-starters**  
**Section 1: Electromechanical contactors and motor-starters**  
(IEC 947-4-1:1990/A2:1996)

Appareillage à basse tension  
Partie 4: Contacteurs et démarreurs  
de moteurs  
Section 1: Contacteurs et démarreurs  
électromécaniques  
(CEI 947-4-1:1990/A2:1996)

Niederspannung-Schaltgeräte  
Teil 4: Schütze und Motorstarter  
Hauptabschnitt 1: Elektromechanische  
Schütze und Motorstarter  
(IEC 947-4-1:1990/A2:1996)

[SIST EN 60947-4-1:1995/A2:1998](https://standards.iteh.ai/catalog/standards/sist/99a9b5fb-7029-4e56-b2da-bf8dbeef17cd/sist-en-60947-4-1-1995-a2-1998)

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This amendment A2 modifies the European Standard EN 60947-4-1:1992; it was approved by CENELEC on 1996-07-02. 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 60947-4-1:1992/A2:1997 E

### Foreword

The text of document 17B/731/FDIS, future amendment 2 to IEC 947-4-1:1990, 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 60947-4-1:1992 on 1996-07-02.

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

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

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### Endorsement notice

The text of amendment 2:1996 to the International Standard IEC 947-4-1:1990 was approved by CENELEC as an amendment to the European Standard without any modification.

[SIST EN 60947-4-1:1995/A2:1998](https://standards.iteh.ai/catalog/standards/sist/99a9b5fb-7029-4e56-b2da-bf8dbeef17cd/sist-en-60947-4-1-1995-a2-1998)

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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 1000-4-2	1995	Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques -- Section 2: Electrostatic discharge immunity test	EN 61000-4-2	1995
IEC 1000-4-3 (mod)	1995	Section 3: Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	1996
IEC 1000-4-4	1995	Section 4: Electrical fast transient/burst immunity test	EN 61000-4-4	1995
IEC 1000-4-5	1995	Section 5: Surge immunity test	EN 61000-4-5	1995
CISPR 11 (mod)	1990	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment	EN 55011	1991

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**NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD**

**CEI  
IEC**

**947-4-1**

1990

AMENDEMENT 2  
AMENDMENT 2

1996-08

Amendement 2

**Appareillage à basse tension**

**Partie 4:**

**Contacteurs et démarreurs de moteurs**

**Section un: Contacteurs et démarreurs  
électromécaniques**

SIST EN 60947-4-1:1995/A2:1998

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Amendment 2

**Low-voltage switchgear and controlgear**

**Part 4:**

**Contactors and motor-starters**

**Section One: Electromechanical contactors  
and motor-starters**

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

CODE PRIX  
PRICE CODE

**H**

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For price, see current catalogue

## FOREWORD

This amendment has been prepared by sub-committee 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/731/FDIS	17B/762/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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## CONTENTS

*Add the titles of the new subclauses as follows:*

7.3 Electromagnetic compatibility (EMC)

8.4 EMC tests

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[SIST EN 60947-4-1:1995/A2:1998  
https://standards.iteh.ai/catalog/standards/sist/99a9b5fb-7029-4e56-b2da-bf8dbeef17cd/sist-en-60947-4-1-1995-a2-1998](https://standards.iteh.ai/catalog/standards/sist/99a9b5fb-7029-4e56-b2da-bf8dbeef17cd/sist-en-60947-4-1-1995-a2-1998)

## PREFACE

*Add, on page 9, the titles of the following standards to the list of publications:*

IEC 1000-4-2: 1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test – Basic EMC publication*

IEC 1000-4-3: 1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 3: Radiated radio-frequency electromagnetic field immunity test*

IEC 1000-4-4: 1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test – Basic EMC publication*

IEC 1000-4-5: 1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity tests*

CISPR 11: 1990, *Limits and methods of measurement of electromagnetic disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment*



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#### 4.3.5.5 *Starting and stopping characteristics of starters* (see Figure 6)

*Replace the last paragraph of this subclause by the following:*

Unless otherwise stated, starters are designed on the basis of the starting characteristics of the motors compatible with the making capacities of table VII. These making capacities cover both the transient and steady-state starting currents of the great majority of standard motors. However, the starting currents for some large motors may attain peak values corresponding to power factors considerably lower than those specified for the test circuit in table VII. In these cases the operational current of the contactor or starter should be decreased to a value lower than its rated value such that the making capacity of the contactor or starter is not exceeded.

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#### 5.1.2 *Characteristics, basic rated values and utilization*

*Add the following new items at the end of this subclause:*

**EMC:**

- y) environment 1 or 2: see 7.3.1 of part 1;
- z) special requirements, if applicable, for example shielded or twisted conductors.

NOTE – Unshielded or untwisted conductors are considered as normal installation conditions.

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#### 5.3 *Instructions for installation, operation and maintenance*

*Add, at the end of the second paragraph, the following text:*

... and the measures to be taken with regard to the equipment, if any, concerning EMC.

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*Add, after subclause 7.2, the following new subclause:*

### 7.3 *Electromagnetic compatibility (EMC)*

#### 7.3.1 *General*

Subclause 7.3.1 of part 1 applies with the following addition:

Power frequency magnetic field tests are not required because the devices are naturally submitted to such fields. Immunity is demonstrated by the successful completion of the operational performance capability tests (see 8.3.3.5 and 8.3.3.6).