



SLOVENSKI STANDARD
SIST EN 60947-5-1:2000/A2:2001
01-marec-2001

Nizkonapetostne stikalne in krmilne naprave – 5-1. del: Krmilne naprave in stikalni elementi – Elektromehanske krmilne naprave – Dopolnilo A2

Low-voltage switchgear and controlgear -- Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices

Niederspannungsschaltgeräte -- Teil 5-1: Steuergeräte und Schaltelemente - Elektromechanische Steuergeräte

Appareillage à basse tension -- Partie 5-1: Appareils et éléments de commutation pour circuits de commande - Appareils électromécaniques pour circuits de commande

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Ta slovenski standard je istoveten z: EN 60947-5-1:1997/A2:2000

ICS:

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear
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SIST EN 60947-5-1:2000/A2:2001 **en**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60947-5-1/A2

January 2000

ICS 29.130.20

English version

Low-voltage switchgear and controlgear
Part 5-1: Control circuit devices and switching elements
Electromechanical control circuit devices
(IEC 60947-5-1:1997/A2:1999)

Appareillage à basse tension
Partie 5-1: Appareils et éléments
de commutation pour circuits de
commande
Appareils électromécaniques pour
circuits de commande
(CEI 60947-5-1:1997/A2:1999)

Niederspannungsschaltgeräte
Teil 5-1: Steuergeräte und
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This amendment A2 modifies the European Standard EN 60947-5-1:1997; it was approved by CENELEC on 1999-12-01. 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/1004/FDIS, future amendment 2 to IEC 60947-5-1, 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 60947-5-1:1997 on 1999-12-01.

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) 2000-09-01
- latest date by which the national standards conflicting
with the amendment have to be withdrawn (dow) 2002-12-01

Endorsement notice

The text of amendment 2:1999 to the International Standard IEC 60947-5-1:1997 was approved by CENELEC as an amendment to the European Standard without any modification.

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**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC**

60947-5-1

1997

AMENDEMENT 2
AMENDMENT 2
1999-10

Amendement 2

Appareillage à basse tension –

Partie 5-1:

**Appareils et éléments de commutation pour
circuits de commande –**

**Appareils électromécaniques pour circuits de
commande**

SIST EN 60947-5-1:2000/A2:2001

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Amendment 2 60947-5-1-2000-a2-2001

Low-voltage switchgear and controlgear –

Part 5-1:

**Control circuit devices and switching elements –
Electromechanical control circuit devices**

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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/1004/FDIS	17B/1020/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.

Page 93

Table A.2 – Examples of semiconductors switching element ratings for 50 Hz and/or 60 Hz

Change the "Minimum operational current" value for SD from 0,02 A to 0,05 A.

Page 165

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Add, after annex K, the following new annex L:

[SIST EN 60947-5-1:2000/A2:2001](https://standards.iteh.ai/catalog/standards/sist/36aad20e-9c2f-4faa-bb8e-f7be8335bbe/sist-en-60947-5-1-2000-a2-2001)
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Annex L
(normative)

Special requirements for mechanically linked contact elements

L.1 General

L.1.1 Scope

This annex applies to mechanically linked auxiliary contact elements included in control circuit devices where actuating force is provided internally, such as contactor-relays.

Linkage between the auxiliary and main contacts is not covered by this annex.

NOTE 1 A typical application of mechanically linked contact elements is e.g. self-monitoring in machine control circuits.

NOTE 2 Mechanically linked contact elements have previously been referred to as forced contacts, positively activated contacts, or linked contacts, or, in French: "contacts forcés" or in German: "Zwangsgeführte Kontakte".

NOTE 3 Control circuit devices actuated externally (e.g. push-button or limit-switches) do not have an actuating force limited to a maximum value (see L.8.4 a) 2)), so they cannot have mechanically linked contact elements. For such devices, safety applications generally use contacts with "direct opening action" (see annex K).

L.1.2 Object

This annex provides additional specifications (definition, requirements and tests) which shall be used for stating the required design characteristics, marking and performance of mechanically linked contact elements.

L.2 Definition

The following additional definition applies:

L.2.1

mechanically linked contact elements

combination of n Make contact element(s) and m Break contact element(s) designed in such a way that they cannot be in closed position simultaneously under conditions defined in L.8.4

NOTE 1 One control circuit device may have more than one group of mechanically linked contact elements.

NOTE 2 See also L.7.1.9.

L.3 Classification

Clause 3 applies.

L.4 Characteristics

All mechanically linked contact elements shall also comply with the relevant requirements given in this standard.

L.5 Product information

Clause 5 applies with the following addition:

L.5.2.7 Mechanically linked contact elements identification and marking

Mechanically linked contact elements shall be clearly identified:

- on the control circuit device itself;
- or in the manufacturer's documentation;
- or both.

The mechanical linkage shall be identified in circuit diagrams by a double parallel line connecting a filled circle on each of the mechanically linked contact symbols. An example is given in figure L.1.

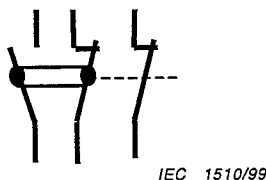
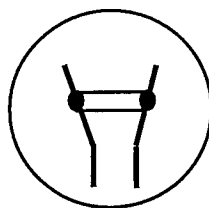


Figure L.1 – Example of representation of NO and NC contacts which are mechanically linked and NC non-linked contact

If devices containing some or all mechanically linked contacts are marked, the symbol shown in figure L.2 shall be used.



IEC 1511/99

Figure L.2 – Symbol for device containing mechanically linked contacts

L.6 Normal service, mounting and transport conditions

There are no supplementary requirements.

L.7 Constructional and performance requirements

Clause 7 applies with the following addition:

L.7.1.9 Requirements for mechanically linked contact elements

While any of the n Make contact element(s) is closed, none of the m Break contact element(s) shall be closed.

While any of the m Break contact element(s) is closed, none of the n Make contact element(s) shall be closed.

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L.8 Tests

Clause 8 applies with the following addition:

L.8.4 Special test for mechanically linked contact elements

This special test shall be carried out on a sample of $(m + n)$ products where m is the number of break contact element(s) and n is the number of make contact element(s).

A different sample is used for each test.

The tests shall be carried out on products in new and clean condition. The test procedure shall be as follows:

a) Test of NC contact:

- 1) the NC contact element shall be maintained in the closed position e.g. by welding or gluing each point of contact (e.g. for double breaking contact, welding is done at the two contacts points). The thickness of welding or gluing shall be such that the distance between contacts is not modified by more than 0,02 mm;
- 2) an actuating force shall be applied by energising the operating coil at 110 % of its rated voltage;
- 3) while applying the force, an impulse test voltage of 2,5 kV (1,2/50 μ s at sea level; correction should be made according to table 12 of IEC 60947-1) shall be applied across every NO contact. There shall be no disruptive discharge.

NOTE This test ensures a minimum gap of 0,5 mm in accordance with table 13 of IEC 60947-1.