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მეტროლოგიის ეროვნული სააგენტო
თბილისი

სსტ ენ 60947-5-4:2003/2014

საინფორმაციო მონაცემები

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English version

Low-voltage switchgear and controlgear
Part 5-4: Control circuit devices and switching elements -
Method of assessing the performance of low-energy contacts -
Special tests
 (IEC 60947-5-4:2002)

Appareillage à basse tension
 Partie 5-4: Appareils et éléments
 de commutation pour circuits
 de commande -
 Méthode d'évaluation des performances
 des contacts à basse énergie -
 Essais spéciaux
 (CEI 60947-5-4:2002)

Niederspannungsschaltgeräte
 Teil 5-4: Steuergeräte und Schaltelemente -
 Verfahren zur Abschätzung
 der Leistungsfähigkeit
 von Schwachstromkontakten -
 Besondere Prüfungen
 (IEC 60947-5-4:2002)

This European Standard was approved by CENELEC on 2003-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard 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.

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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

Foreword

The text of the International Standard IEC 60947-5-4:2002, prepared by SC 17B, Low-voltage switchgear and controlgear, of IEC TC 17, Switchgear and controlgear, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60947-5-4 on 2003-12-01.

This European Standard supersedes EN 60947-5-4:1997.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-12-01

Annexes designated "normative" are part of the body of the standard.

In this standard, Annexes A and ZA are normative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60947-5-4:2002 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

**Normative references to international publications
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1 + corr. October + A1	1988 1988 1992	Environmental testing Part 1: General and guidance	EN 60068-1	1994
IEC 60068-2	Series	Environmental testing Part 2: Tests	EN 60068-2 HD 323.2	Series Series
IEC 60605-6	1997	Equipment reliability testing Part 6: Tests for the validity of the constant failure rate or constant failure intensity assumptions	-	-
IEC 60947-1 (mod) A1 A2	1999 2000 2001	Low-voltage switchgear and controlgear Part 1: General rules	EN 60947-1 + corr. October A1 A2	1999 1999 2000 2001
IEC 60947-5-1 A1 A2	1997 1999 1999	Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices	EN 60947-5-1 + A12 A1 A2	1997 1999 1999 2000
IEC 61131-2	1992	Programmable controllers Part 2: Equipment requirements and tests	EN 61131-2	1994 ¹⁾

1) EN 61131-2:1994 is superseded by EN 61131-2:2003 + corrigendum August 2003, which is based on IEC 61131-2:2003.

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60947-5-4

Deuxième édition
Second edition
2002-10

Appareillage à basse tension –

Partie 5-4:

**Appareils et éléments de commutation
pour circuits de commande –
Méthode d'évaluation des performances
des contacts à basse énergie –
Essais spéciaux**

Low-voltage switchgear and controlgear –

Part 5-4:

**Control circuit devices and switching elements –
Method of assessing the performance of
low-energy contacts – Special tests**



Numéro de référence
Reference number
CEI/IEC 60947-5-4:2002

Numérotation des publications

Depuis le 1er janvier 1997, les publications de la CEI sont numérotées à partir de 60000. Ainsi, la CEI 34-1 devient la CEI 60034-1.

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

APPAREILLAGE À BASSE TENSION –

Partie 5-4: Appareils et éléments de commutation pour circuits de commande – Méthode d'évaluation des performances des contacts à basse énergie – Essais spéciaux

AVANT-PROPOS

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La Norme internationale CEI 60947-5-4 a été établie par le sous-comité 17B: Appareillage à basse tension, du comité d'études 17 de la CEI: Appareillage.

Cette deuxième édition annule et remplace la première édition parue comme rapport technique en 1996. Elle a désormais le statut de norme internationale.

Le texte de cette norme est issu des documents suivants:

FDIS	Rapport de vote
17B/1228/FDIS	17B/1254/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette norme.

Cette publication a été rédigée selon les Directives ISO/CEI, Partie 2.

Quelques légères modifications, principalement de nature éditoriale, ont été introduites par rapport à la première édition.

საინფორმაციო ნაწილი. სრული ტექსტის სახსრავად შეიძინეთ სტანდარტი.

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

**Part 5-4: Control circuit devices and switching elements –
Method of assessing the performance of low-energy contacts –
Special tests**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60947-5-4 has been prepared by subcommittee 17B: Low-voltage switchgear and controlgear, of IEC technical committee 17: Switchgear and controlgear.

This second edition cancels and replaces the first edition which was issued as a technical report in 1996. It now has the status of an International Standard.

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

FDIS	Report on voting
17B/1228/FDIS	17B/1254/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

Some slight modifications, mainly of an editorial nature, have been introduced since the first edition.

Le comité a décidé que le contenu de cette publication ne sera pas modifié avant 2006.
A cette date, la publication sera

- reconduite;
- supprimée;
- remplacée par une édition révisée, ou
- amendée.

The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

INTRODUCTION

Les auxiliaires de commande peuvent ne pas être appropriés pour une utilisation à de très basses tensions et il est donc recommandé de demander l'avis du constructeur pour toute utilisation à une faible valeur de la tension d'emploi, par exemple en dessous de 100 V courant alternatif ou courant continu (voir CEI 60947-5-1, note 2 de 4.3.1.1).

Cependant, le développement des systèmes électroniques et des automates programmables dans les processus industriels entraîne une augmentation de l'utilisation des éléments de commutation dans des circuits de commande à basse tension.

Aussi est-il nécessaire de définir de quelle manière il convient d'établir le comportement prévisionnel des contacts utilisés dans ce domaine (avec un niveau de confiance suffisant), en utilisant des méthodes d'essais conventionnelles précises, jusqu'à des valeurs minimales spécifiées (par exemple 24 V, 1 mA; 5 V, 10 mA).

INTRODUCTION

Control switches may not be suitable for use at very low voltages and therefore it is recommended to seek the advice of the manufacturer concerning any application with a low value of operational voltage, for example, below 100 V a.c. or d.c. (see IEC 60947-5-1, note 2 of 4.3.1.1).

However, the development of electronic systems and programmable controllers in industrial processes increases the use of switching elements in low-voltage circuit control.

It is thus necessary to define how predictional behaviour of contacts in this area should be established (with an acceptable confidence level), by using precise conventional testing methods, down to specified values (such as 24 V, 1 mA; 5 V, 10 mA).