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**Elektromehanski osnovni releji – 1. del: Splošne in varnostne zahteve**

Electromechanical elementary relays -- Part 1: General and safety requirements

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EUROPEAN STANDARD

**EN 61810-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2004

ICS 29.120.70

Supersedes EN 61810-1:1998 & EN 61810-5:1998

English version

**Electromechanical elementary relays**  
**Part 1: General and safety requirements**  
(IEC 61810-1:2003)

Relais électromécaniques élémentaires  
Partie 1: Exigences générales  
et de sécurité  
(CEI 61810-1:2003)

Elektromechanische Elementarrelais  
(elektromechanische Schaltrelais ohne  
festgelegtes Zeitverhalten)  
Teil 1: Allgemeine und  
sicherheitsgerichtete Anforderungen  
(IEC 61810-1:2003)

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This European Standard was approved by CENELEC on 2003-12-02. 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.

This European Standard 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, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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 94/182/FDIS, future edition 2 of IEC 61810-1, prepared by IEC TC 94, All-or-nothing electrical relays, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61810-1 on 2003-12-02.

This European Standard supersedes EN 61810-1:1998 and EN 61810-5:1998.

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) 2004-09-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2008-12-01

Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 61810-1:2003 was approved by CENELEC as a European Standard without any modification.

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## Annex ZA (normative)

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

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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 60038 (mod) A1 A2	1983 1994 1997	IEC standard voltages <sup>1)</sup>	HD 472 S1 + A1 + corr. February -	1989 1995 2002 -
IEC 60050	series	International Electrotechnical Vocabulary	-	-
IEC 60068-2-17	1994	Basic environmental testing procedures Part 2: Tests - Test Q: Sealing	EN 60068-2-17	1994
IEC 60068-2-20 + A2	1979 1987	Part 2: Tests - Test T: Soldering	HD 323.2.20 S3	1988
IEC 60085	1984	Thermal evaluation and classification of electrical insulation	HD 566 S1	1990
IEC 60112	2003	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	2003
IEC 60364-4-44	2001	Electrical installations of buildings Part 4-44: Protection for safety - Protection against voltage disturbances and electromagnetic disturbances	-	-
IEC 60417	data- base	Graphical symbols for use on equipment	-	-
IEC 60664-1 + A1 + A2	1992 2000 2002	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	EN 60664-1	2003
IEC 60695-2-2 A1	1991 1994	Fire hazard testing Part 2: Test methods – Section 2: Needle-flame test	EN 60695-2-2 A1	1994 1995

<sup>1)</sup> The title of HD 472 S1 is: Nominal voltages for low-voltage public electricity supply systems.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60695-2-10	2000	Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2001
IEC 60695-10-2	1995 <sup>2)</sup>	Part 10-2: Guidance and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires - Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test	-	-
A1	2001		-	-
IEC 60721-3-3	1994	Classification of environmental conditions Part 3: Classification of groups of environmental parameters and their severities – Section 3: Stationary use at weatherprotected locations	EN 60721-3-3	1995
A1	1995		-	-
A2	1996		A2	1997
IEC 60730-1 (mod)	1999	Automatic electrical controls for household and similar use Part 1: General requirements	EN 60730-1 A11 A12	2000 2002 2003
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 A1 A12 A2	1997 1997 1999 1999 2000
IEC 60950-1 (mod)	2001	Information technology equipment - Safety Part 1: General requirements	EN 60950-1	2001
IEC 60999-1	1999	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm <sup>2</sup> up to 35 mm <sup>2</sup> (included)	EN 60999-1	2000
IEC 61210 (mod)	1993	Connecting devices - Flat quick-connect terminations for electrical copper conductors - Safety requirements	EN 61210	1995
IEC 61760-1	1998	Surface mounting technology Part 1: Standard method for the specification of surface mounting components (SMDs)	EN 61760-1	1998

<sup>2)</sup> IEC 60695-10-2 is superseded by IEC 60695-10-2:2003, which is harmonized as EN 60695-10-2:2003.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61984	2001	Connectors - Safety requirements and tests	EN 61984	2001

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# INTERNATIONAL STANDARD

# IEC 61810-1

Second edition  
2003-08

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## Electromechanical elementary relays –

### Part 1: General and safety requirements

**STANDARD PREVIEW**  
*Relais électromécaniques élémentaires –*  
**(standards.iteh.ai)**

*Partie 1:*  
*Exigences générales et de sécurité*

<https://standards.iteh.ai/catalog/standards/sist/7c1da787-5db5-4270-bd1fa8b34e2e54d6/sist-en-61810-1-2004>

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTROMECHANICAL ELEMENTARY RELAYS –**

**Part 1: General and safety requirements**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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 61810-1 has been prepared by IEC technical committee 94: All-or-nothing electrical relays.

This second edition cancels and replaces the first edition published in 1998 and IEC 61810-5, published in 1998. This edition constitutes a technical revision.

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

FDIS	Report on voting
94/182/FDIS	94/186/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.

A bilingual version of this document may be issued at a later date.

This new edition has been completely revised in order to

- establish a stand-alone standard for the type testing of electromechanical elementary relays,
- incorporate and update the requirements and tests with regard to insulation coordination as contained in former IEC 61810-5:1998,
- improve the structure of the standard to achieve better readability,
- update various requirements and tests.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

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

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# ELECTROMECHANICAL ELEMENTARY RELAYS –

## Part 1: General and safety requirements

### 1 Scope

This part of IEC 61810 applies to electromechanical elementary relays (non-specified time all-or-nothing relays) for incorporation. It defines the basic safety-related and functional requirements for applications in all areas of electrical engineering or electronics, such as:

- general industrial equipment,
- electrical facilities,
- electrical machines,
- electrical appliances for household and similar use,
- information technology and business equipment,
- building automation equipment,
- automation equipment,
- electrical installation equipment,
- medical equipment,
- control equipment,
- telecommunications,
- vehicles,
- transportation,
- etc.

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Compliance with the requirements of this standard is verified by the type tests indicated.

In case the application of a relay determines additional requirements exceeding those specified in this standard, the relay should be assessed in line with this application in accordance with the relevant IEC standard(s) (for example IEC 60730-1, IEC 60335-1, IEC 60950-1).

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60038:1993, *IEC standard voltages*  
Amendment 1 (1984)  
Amendment 2 (1997)

IEC 60050: *International Electrotechnical Vocabulary*

IEC 60068-2-17:1994, *Basic environmental testing procedures – Part 2: Tests – Test Q: Sealing*

IEC 60068-2-20:1979, *Basic environmental testing procedures – Part 2: Tests – Test T: Soldering*  
Amendment 2 (1987)

IEC 60085:1984, *Thermal evaluation and classification of electrical insulation*

IEC 60112:2003, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60364-4-44:2001, *Electrical installations of buildings – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances*

IEC 60417-DB:2002, *Graphical symbols for use on equipment*<sup>1</sup>

IEC 60664-1:1992, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*  
Amendment 1 (2000)  
Amendment 2 (2002)

IEC 60695-2-2:1991, *Fire hazard testing – Part 2: Test methods – Section 2: Needle flame test*  
Amendment 1 (1994)

IEC 60695-2-10:2000, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60695-10-2:1995, *Fire hazard testing – Part 10-2: Guidance and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires – Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test*  
Amendment 1 (2001)

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IEC 60721-3-3:1994, *Classification of environmental conditions – Part 3-3: Classification of groups of environmental parameters and their severities – Stationary use at weatherprotected locations*  
Amendment 1 (1995)  
Amendment 2 (1996)

IEC 60730-1:1999, *Automatic electrical controls for household and similar use – Part 1: General requirements*

IEC 60947-5-1:1997, *Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices*  
Amendment 1 (1999)  
Amendment 2 (1999)

IEC 60950-1:2001, *Information technology equipment – Safety – Part 1: General requirements*

IEC 60999-1:1999, *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm<sup>2</sup> up to 35 mm<sup>2</sup> (included)*

IEC 61210:1993, *Connecting devices – Flat quick-connect terminations for electrical copper conductors – Safety requirements*

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<sup>1</sup> "DB" refers to the IEC on-line database.