



SLOVENSKI STANDARD
SIST EN 62314:2008
01-januar-2008

Polprevodniški releji (IEC 62314:2006)

Solid-state relays

Halbleiterrelais

Relais statiques

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Ta slovenski standard je istoveten z: EN 62314:2006

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29.120.70 Releji

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Solid-state relays
(IEC 62314:2006)

Relais statiques
(CEI 62314:2006)

Halbleiterrelais
(IEC 62314:2006)

This European Standard was approved by CENELEC on 2006-07-01. 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.

This European Standard exists in two official versions (English and 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, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the 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 94/232/FDIS, future edition 1 of IEC 62314, 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 62314 on 2006-07-01.

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) 2007-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2009-07-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62314:2006 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)	1983	IEC standard voltages ¹⁾	HD 472 S1	1989
-			+ corr. February	2002
-			A1	1995
A1	1994		-	-
A2	1997		-	-
IEC 60050-195	1998	International Electrotechnical Vocabulary (IEV) Chapter 195: Earthing and protection against electric shock	-	-
IEC 60050-444	2002	International Electrotechnical Vocabulary Part 444: Elementary relays	-	-
IEC 60068-2-1	1990	Environmental testing Part 2: Tests - Tests A: Cold	EN 60068-2-1	1993
IEC 60068-2-2	1974	Environmental testing Part 2: Tests - Tests B: Dry heat	EN 60068-2-2 ²⁾	1993
IEC 60068-2-14 + A1	1984 1986	Environmental testing Part 2: Tests - Test N: Change of temperature	EN 60068-2-14	1999
IEC 60068-2-20 + A2	1979 1987	Environmental testing Part 2: Tests - Test T: Soldering	HD 323.2.20 S3	1988
IEC 60068-2-78	2001	Environmental testing Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	2001
IEC 60112	2003	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	2003
IEC 60529	- ³⁾	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 ⁴⁾ 1993

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

²⁾ EN 60068-2-2 includes supplement A:1976 to IEC 60068-2-2.

³⁾ Undated reference.

⁴⁾ Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60664-1 (mod)	- ³⁾	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	EN 60664-1	2003 ⁴⁾
IEC 60664-3	2003	Insulation coordination for equipment within low-voltage systems Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	2003
IEC 60695-2-10	2000	Fire hazard testing 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	2003	Fire hazard testing Part 10-2: Abnormal heat - Ball pressure test	EN 60695-10-2	2003
IEC 60695-11-10 A1	1999 2003	Fire hazard testing Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10 A1	1999 2003
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 ² up to 35 mm ² (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 ⁵⁾	1998

⁵⁾ EN 61760-1 is superseded by EN 61760-1:2006, which is based on IEC 61760-1:2006.

INTERNATIONAL STANDARD

IEC 62314

First edition
2006-05

Solid-state relays

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SOLID-STATE RELAYS

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, Publicly Available Specifications (PAS) 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 62314 has been prepared by technical committee 94: All-or-nothing electrical relays.

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

FDIS	Report on voting
94/232/FDIS	94/235/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.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

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

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SOLID-STATE RELAYS

1 Scope and object

This International Standard applies to particular all-or-nothing electrical relays denominated solid-state relays intended for performing electrical operations by single step function changes to the state of electric circuits between the OFF-state and the ON-state and vice versa. It is applicable to solid-state relays with rated voltages up to 750 V and with a.c. output current up to 160 A.

NOTE Requirements for solid-state relays with d.c. output circuits are under consideration.

This standard deals with solid-state relays which are intended for incorporation in other products or equipment. As such, solid state relays are considered to be components and this standard defines the basic safety-related and functional requirements for solid-state relays as stand-alone components.

Such solid-state relays are incorporated in products or equipment which themselves have to comply with the relevant product and/or application standard(s) to meet their intended application. The following are examples of such applications:

- general industrial equipment;
- electrical facilities;
- electrical machines;
- electrical appliances;
- office communications;
- building automation and environmental control;
- automation and process control;
- electrical installation engineering;
- medical engineering;
- telecommunications;
- vehicle engineering;
- transportation engineering;
- lighting control.

Solid state relays are components (not stand alone devices) and as such do not perform a direct function. Therefore, no EMC requirements are included in this standard.

NOTE This is in line with the European EMC Directive.

Where the application of a solid-state relay determines additional requirements such as EMC and overcurrent protection, the solid-state relay shall be assessed in accordance with the relevant IEC standard(s).

Solid-state switching devices with monolithic structures fall within the scope of IEC subcommittee 47E and are not covered in this standard.

Semiconductor controllers and contactors fall within the scope of the IEC 60947 series of standards – *Low-voltage switchgear and controlgear* – developed by IEC subcommittee 17B and are not covered in this standard.

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

The object of this standard is to state:

- the characteristics of solid-state relays;
- the requirements which solid-state relays shall comply with reference to
 - a) their operation and behaviour;
 - b) their dielectric properties;
 - c) the degrees of protection provided by their enclosures, where applicable;
- the tests verifying that the requirements have been met, and the test methods to be adopted;
- the information to be given with the solid-state relay or in the manufacturer's documentation.

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 60038:1983, *IEC standard voltages*
Amendment 1 (1994)
Amendment 2 (1997)

IEC 60050-195:1998, *International Electrotechnical Vocabulary (IEV) – Part 195: Earthing and protection against electric shock*

IEC 60050-444:2002, *International Electrotechnical Vocabulary (IEV) – Part 444: Elementary relays*

IEC 60068-2-1:1990, *Environmental testing – Part 2: Tests. Tests A: Cold*

IEC 60068-2-2:1974, *Environmental testing – Part 2: Tests. Tests B: Dry heat*

IEC 60068-2-14:1984, *Environmental testing – Part 2: Tests. Test N: Change of temperature*
Amendment 1 (1986)

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

IEC 60068-2-78:2001, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

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

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60664-1, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60664-3:2003, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

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