

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Solid-state relays – Safety requirements**

**Relais statiques – Exigences de sécurité**





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**Solid-state relays – Safety requirements**

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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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**SOLID-STATE RELAYS – SAFETY REQUIREMENTS****FOREWORD**

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IEC 62314 has been prepared by IEC technical committee 94: All-or-nothing electrical relays. It is an International Standard.

This second edition cancels and replaces the first edition published in 2006. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) addition of load categories for DC load;
- b) addition of load category for self-ballasted lamp load;
- c) addition of "sockets" terminal;
- d) update of references;
- e) introduction of the requirement of EMC;
- f) restructuring of the whole document.

The text of this International Standard is based on the following documents:

| Draft       | Report on voting |
|-------------|------------------|
| 94/670/FDIS | 94/701/RVD       |

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

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## SOLID-STATE RELAYS – SAFETY REQUIREMENTS

### 1 Scope

This document 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.

This document 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 document 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 comply with the relevant product and/or application standard(s) to meet their intended application.

NOTE 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 relay as apparatus:

Where the solid-state relay is specified as apparatus with a function to the end-user, requirements on EMC are given in this document.

Solid state relay as component:

There are no EMC requirements for solid-state relays intended for incorporation into the equipment by the equipment manufacturer, because the performance strongly depends on the application into the equipment.

The object of this document is to state:

- the characteristics of solid-state relays
- the requirements which apply to solid-state relays with reference to
  - a) electrical safety;
  - b) their operation and behaviour;
  - c) their dielectric properties;
  - d) EMC;