

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) – Part 1: General rules**

**Interrupteurs automatiques à courant différentiel résiduel sans dispositif de protection contre les surintensités incorporé pour usages domestiques et analogues (ID) –**

**Partie 1: Règles générales**

[IEC 61008-1:2024](#)

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INTERNATIONAL  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RESIDUAL CURRENT OPERATED CIRCUIT-BREAKERS  
WITHOUT INTEGRAL OVERCURRENT PROTECTION  
FOR HOUSEHOLD AND SIMILAR USES (RCCBS) –****Part 1: General rules****FOREWORD**

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IEC 61008-1 has been prepared by subcommittee 23E: Circuit-breakers and similar equipment for household use, of IEC technical committee 23: Electrical accessories. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2010, Amendment 1:2012 and Amendment 2:2013. This edition constitutes a technical revision.

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

- a) harmonization of all clauses between the IEC 61008, IEC 61009 and IEC 60755 series using blocks and modules approach;

- b) harmonization of all tables and figures between the IEC 61008, IEC 61009 and IEC 60755 series;
- c) terms and definitions are now referred to IEC 62873-2;
- d) modification of 4.1 for classification according to supply conditions;
- e) new subclauses 8.17 and 9.24 for requirements and tests for the resistance to temporary overvoltages (TOV);
- f) improvement of 9.8 for test of dielectric properties;
- g) tests for screwless, flat-quick terminals and aluminium conductors are now referred to the IEC 62873-3 series.

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

Draft	Report on voting
23E/1368/FDIS	23E/1385/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 International Standard is to be used in conjunction with the relevant product standard, either IEC 61008-2-1:2024 or IEC 61008-2-2:2024. The chosen standard, IEC 61008-2-1:2024 or IEC 61008-2-2:2024, shall be used consistently throughout the standard.

In order to maintain the same structure throughout the IEC 61008 and IEC 61009 series, some elements that are not applicable to the particular device within the scope of this document are labelled void.

In this document, the following print types are used:

- compliance statements: in *italic* type;
- other statements: in normal type.

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).

A list of all parts in the IEC 61008 series, published under the general title *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs)*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

## INTRODUCTION

The purpose of this document is to harmonize as far as practicable all rules and requirements of a general nature applicable to RCCBs in order to obtain uniformity of requirements and tests and to avoid the need for testing to different standards.

All those parts which can be considered as general have therefore been gathered in this document, e.g. temperature-rise, dielectric properties, etc.

For each type of RCCB, only two main documents are used to determine all requirements and tests:

- 1) this document;
- 2) the relevant product standard covering RCCBs:
  - IEC 61008-2-1, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) – Part 2-1: RCCBs according to classification 4.1.1*; or
  - IEC 61008-2-2, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) – Part 2-2: RCCBs according to classification 4.1.2, 4.1.3, 4.1.4, 4.1.5 and 4.1.6*

For Type F and Type B RCCBs, IEC 62423 applies in addition to the IEC 61008 series.

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# RESIDUAL CURRENT OPERATED CIRCUIT-BREAKERS WITHOUT INTEGRAL OVERCURRENT PROTECTION FOR HOUSEHOLD AND SIMILAR USES (RCCBS) –

## Part 1: General rules

### 1 Scope

This document gives general requirements and tests for residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (hereafter referred to as RCCBs), for rated operational voltages not exceeding 440 V AC, with rated frequencies of 50 Hz, 60 Hz or 50/60 Hz and rated currents not exceeding 125 A, intended principally for protection against shock hazard.

RCCBs are intended to provide fault protection (previously referred to as protection against indirect contact), the exposed conductive parts of the installation being connected to an appropriate earth electrode. They are also intended to be used to provide protection against fire hazards due to a persistent earth fault current.

RCCBs having a rated residual operating current not exceeding 30 mA are used for fault protection and additional protection in the case of failure of the protective provisions against electric shock.

This document applies to RCCBs performing simultaneously the functions of detection of the residual current, of comparison of the value of this current with the residual operating value and of opening of the protected circuit when the residual current exceeds this value.

NOTE 1 The requirements for RCCBs are in line with the group safety publication IEC 60755.

NOTE 2 RCCBs of type AC and type A are covered by the IEC 61008 series. RCCBs of type F and type B are covered by IEC 62423 in conjunction with the IEC 61008 series.

NOTE 3 Installation and selection rules for RCCBs are given in the IEC 60364 series.

NOTE 4 Installation and application rules of RCCBs in ZA is given in SANS 10142-1.

RCCBs are intended to be operated by ordinary or uninstructed persons and designed not to require maintenance.

The requirements of this document apply for standard conditions (see 7.1). Additional requirements can be necessary for RCCBs used in locations which have severe environmental conditions. RCCBs within the scope of this document are intended for use in an environment with pollution degree 2 (see 7.3).

NOTE 5 For environments with higher pollution degrees, enclosures giving the appropriate degree of protection can be used.

NOTE 6 For RCCBs having a degree of protection higher than IP20, special constructions can be required.

RCCBs are suitable for isolation.

Special precautions (e.g. surge protective devices) can be necessary when excessive overvoltages are likely to occur on the supply side (for example in the case of supply through overhead lines, see IEC 60364-4-44 and IEC 60364-5-53).

RCCBs, with the exception of those with an uninterrupted neutral, are suitable for use in IT systems.