

STN	Prenosné prúdové chrániče bez vstavanej nadprúdovej ochrany pre domácnosť a podobné používanie (PRCD)	STN EN IEC 61540 35 4184
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Portable residual current devices (PRCDs) without integral overcurrent protection for household and similar use

Táto norma obsahuje anglickú verziu európskej normy.

This standard includes the English version of the European Standard.

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English Version

**Portable residual current devices (PRCDs) without integral
overcurrent protection for household and similar use
(IEC 61540:2023)**

Dispositifs différentiels portables à courant résiduel (PCDM)
sans protection incorporée contre les surintensités pour
usages domestiques et analogues
(IEC 61540:2023)

Elektrisches Installationsmaterial - Ortsveränderliche
Fehlerstrom-Schutzeinrichtungen (PRCDs) ohne
eingebauten Überstromschutz für Hausinstallationen und
für ähnliche Anwendungen
(IEC 61540:2023)

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EN IEC 61540:2025 (E)**European foreword**

This document (EN IEC 61540:2025) consists of the text of IEC 61540:2023, prepared by IEC/SC 23E “Circuit-breakers and similar equipment for household use” of IEC/TC 23 “Electrical accessories”.

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Edition 2.0 2023-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Portable residual current devices (PRCDs) without integral overcurrent protection for household and similar use

Dispositifs différentiels portables à courant résiduel (PCDM) sans protection incorporée contre les surintensités pour usages domestiques et analogues

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PORTABLE RESIDUAL CURRENT DEVICES (PRCDS) WITHOUT
INTEGRAL OVERCURRENT PROTECTION FOR HOUSEHOLD
AND SIMILAR USE****FOREWORD**

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IEC 61540 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 second edition cancels and replaces the first edition published in 1997 and its Amendment 1:1998. This edition constitutes a technical revision.

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

- a) The content of the document was revised and aligned with IEC 60755 (group safety publication for residual current devices) and standard library "blocks and modules".
- b) Introduction of classification "4.3 According to behaviour after opening automatically in case of failure of the line voltage".

- c) New requirements and tests were added to cover the introduced protection function against shock hazard:
- Verification of correct performance in the case of missing protective conductor.
 - Verification of correct performance in the case of hazardous live protective conductor.
 - Verification of correct performance in the case of loss of protective conductor.
 - Verification of behaviour in the case of external fault current in the protective conductor.
- d) Clearances/creepage distances revised and modified in alignment with IEC 62752 (IC-CPD).
- e) Revision of values for minimum operating voltages.
- f) Introduction of requirements and test for ambient air temperature between –25 °C and +40 °C.
- g) Test of dielectric properties revised and aligned with standard library "blocks and modules".
- h) Relevant clauses aligned with IEC 62752 (IC-CPD); IC-CPD is a product standard describing similar product/features.
- i) All annexes revised and adapted to content of main document.

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

Draft	Report on voting
23E/1320/FDIS	23E/1323/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. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

In this document, the following print types are used:

- requirements: in roman type;
- *conformity statements: in italic type;*
- notes: in small roman type.

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 in the data related to the specific document. At this date, the document will be

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

INTRODUCTION

A portable residual current device (hereafter referred to as PRCD), consists of a plug, a residual current device (RCD) and one or more socket-outlets or a provision for connection.

This document is harmonized as far as practicable with the rules and requirements of IEC 60755 (group safety publication for RCD) and the standard library "blocks and modules", as defined in IEC 62873-1.

PORTABLE RESIDUAL CURRENT DEVICES (PRCDs) WITHOUT INTEGRAL OVERCURRENT PROTECTION FOR HOUSEHOLD AND SIMILAR USE

1 Scope

This document applies to portable residual current devices (PRCDs) for household and similar uses, consisting of a plug, a residual current device (RCD) and one or more socket-outlets or a provision for connection. They do not incorporate overcurrent protection. They are intended for single- and two-phase systems for rated currents not exceeding 16 A for rated voltages not exceeding 250 V AC, or for rated current not exceeding 32 A for rated voltages not exceeding 130 V AC to earth. They are intended to provide protection against shock hazard in case of direct contact, in addition to the protection provided by the fixed installations for the circuit downstream.

PRCDs have a rated residual operating current not exceeding 0,03 A.

The plug and socket-outlet parts of a PRCD are covered by the national standard of the country where the PRCD is placed on the market. If no national requirements exist, IEC 60884-1 is used.

This document applies to portable devices 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.

PRCDs providing an additional function of detecting faults on the supply side with a defined behaviour in case of supply failures or miswiring (PRCD-S) are also covered by this document.

PRCDs are not intended to be used as parts of fixed installations. Their connecting means can be plugs, socket-outlets, terminals or cords.

NOTE 1 The requirements for PRCDs are in compliance with the general requirements of IEC 60755. PRCDs are essentially intended to be operated by ordinary persons and designed not to require maintenance.

NOTE 2 An integral fuse is used, if necessary, for the relevant plug and socket-outlet system.

The switching contacts of the PRCDs are not intended to provide isolation, as isolation can be ensured by disconnecting the plug.

The requirements of this document apply for environmental conditions as defined in 7.1. Additional requirements can be necessary for PRCDs used in locations having more severe environmental conditions.

PRCDs including batteries are not covered by this document.

This document does not contain additional requirements for PRCDs without earthing contacts for which specific requirements can apply. This document can, however, be used as a guide for such devices which are intended to be used with Class II appliances only.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60065, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60068-3-4, *Environmental testing – Part 3-4: Supporting documentation and guidance – Damp heat tests*

IEC 60068-2-30, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 + 12 h cycle)*

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

IEC 60227 (all parts), *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*

IEC 60245 (all parts), *Rubber insulated cables – Rated voltages up to and including 450/750 V*

IEC 60364 (all parts), *Low-voltage electrical installations*

IEC 60364-4-44:2007, *Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances*

IEC 60384-14, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification – Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

IEC 60417, *Graphical symbols for use on equipment*, available at <http://www.graphical-symbols.info/equipment>

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

IEC 60664-1:2020, *Insulation coordination for equipment within low-voltage supply systems – Part 1: Principles, requirements and tests*

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

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

IEC 60695-2-11, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end products (GWEPT)*

IEC 60755, *General safety requirements for residual current operated protective devices*

IEC 60884-1:2022, *Plugs and socket-outlets for household and similar purposes – Part 1: General requirements*

IEC 61008-1:2010, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) – Part 1: General rules*

IEC 61008-1:2010/AMD1:2012

IEC 61008-1:2010/AMD2:2013

IEC 61249-2 (all parts), *Materials for printed boards and other interconnecting structures*

IEC 61543:2022, *Residual current-operated protective devices (RCDs) for household and similar use – Electromagnetic compatibility*

IEC 62752, *In-cable control and protection device for mode 2 charging of electric road vehicles (IC-CPD)*

IEC 62873-2, *Residual current operated circuit-breakers for household and similar use – Part 2 – Residual current devices (RCDs) – Vocabulary*

CISPR 14-1, *Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission*

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