
Prenosne naprave na preostali (diferenčni) tok brez vgrajene nadtokovne zaščite za gospodinjstvo in podobno uporabo (IEC 61540:2023)

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

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

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

Ta slovenski standard je istoveten z: EN IEC 61540:2025

<https://standards.iteh.ai/catalog/standards/sist/0f93a992-6945-4908-8df3-ab18f1d018c0/sist-en-iec-61540-2026>

ICS:

29.120.01	Električna dodatna oprema na splošno	Electrical accessories in general
-----------	--------------------------------------	-----------------------------------

SIST EN IEC 61540:2026**en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 61540

December 2025

ICS 29.120.01

Supersedes HD 639 S1:2002; HD 639
S1:2002/corrigendum Jul. 2003; HD 639
S1:2002/A1:2003; HD 639 S1:2002/A2:2010

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)

This European Standard was approved by CENELEC on 2025-12-08. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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".

The following dates are fixed:

- latest date by which this document has to be (dop) 2026-12-31
implemented at national level by publication of an
identical national standard or by endorsement
- latest date by which the national standards (dow) 2028-12-31
conflicting with this document have to be
withdrawn

This document supersedes HD 639 S1:2002 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

iTeh Standards
Endorsement notice
(<https://standards.iteh.ai>)

The text of the International Standard IEC 61540:2023 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

<https://standards.iteh.ai/catalog/standards/sist/0f93a992-6945-4908-8df3-ab18f1d018c0/sist-en-iec-61540-2026>

IEC 61540:2023 NOTE Approved as EN IEC 61540:2025 (not modified)



IEC 61540

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

SIST EN IEC 61540:2026

<https://standards.iteh.ai/catalog/standards/sist/0f93a992-6945-4908-8df3-ab18f1d018c0/sist-en-iec-61540-2026>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 29.120.01

ISBN 978-2-8322-7185-8

Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

CONTENTS

FOREWORD.....	10
INTRODUCTION.....	12
1 Scope.....	13
2 Normative references	14
3 Terms and definitions, symbols and abbreviated terms	15
3.1 Definitions relating to plugs and socket-outlets	15
3.2 Definitions relating to residual current devices (RCDs).....	16
3.2.1 Definitions relating to currents flowing from live parts to earth	16
3.2.2 Definitions relating to the energization of a residual current device (RCD)	17
3.2.3 Definitions relating to the operation and to the functions of a residual current device.....	17
3.2.4 Definitions relating to values and ranges of energizing quantities	18
4 Classification.....	18
4.1 According to the type of connection	18
4.1.1 PRCD intermediate adaptor	18
4.1.2 Non-rewireable residual current-protected cord extension sets	19
4.1.3 Residual current-protected plugs	19
4.1.4 In-line PRCDs.....	19
4.2 According to the type of terminals.....	19
4.3 According to behaviour after opening automatically in case of failure of the line voltage	19
4.4 According to their operating characteristics and behaviour in presence of DC components	19
4.5 According to the ambient air temperature.....	20
4.5.1 For use between –5 °C and +40 °C.....	20
4.5.2 For use between –25 °C and +40 °C.....	20
4.6 Classification according to the protective conductor path	20
4.6.1 PRCDs with switched protective conductor	20
4.6.2 PRCDs with non-switched protective conductor	20
4.7 According to the supply.....	20
4.7.1 PRCDs supplied from one phase and neutral (LNSE or LNE).....	20
4.7.2 PRCDs supplied from two phases (LLSE or LLE).....	20
4.8 According an additional function of detecting faults on the supply side.....	20
4.8.1 PRCDs not providing an additional function of detecting faults on the supply side	20
4.8.2 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)	20
5 Characteristics of PRCDs	20
5.1 Summary of characteristics	20
5.2 Rated quantities and other characteristics.....	21
5.2.1 Rated voltage	21
5.2.2 Rated current (I_n)	21
5.2.3 Rated residual operating current ($I_{\Delta n}$).....	21
5.2.4 Rated residual non-operating current ($I_{\Delta no}$)	21
5.2.5 Rated frequency	21

5.2.6	Rated making and breaking capacity (I_m)	22
5.2.7	Rated residual making and breaking capacity ($I_{\Delta m}$)	22
5.2.8	Operating characteristics in case of residual currents comprising a DC component.....	22
5.3	Standard and preferred values	22
5.3.1	Preferred values of rated operational voltage (U_e).....	22
5.3.2	Standard values of rated current (I_n)	22
5.3.3	Standard values of rated residual operating current ($I_{\Delta n}$)	23
5.3.4	Standard value of residual non-operating current ($I_{\Delta no}$)	23
5.3.5	Standard minimum value of the non-operating overcurrent through the PRCD	23
5.3.6	Preferred values of rated frequency	23
5.3.7	Minimum value of the rated making and breaking capacity (I_m)	23
5.3.8	Minimum value of the rated residual making and breaking capacity ($I_{\Delta m}$)	23
5.3.9	Standard value of the rated conditional short-circuit current (I_{nc})	24
5.3.10	Standard value of the rated conditional residual short-circuit current ($I_{\Delta c}$)	24
5.3.11	Standard values of maximum break time.....	24
5.4	Coordination with short-circuit protective devices (SCPDs)	24
5.4.1	General	24
5.4.2	Rated conditional short-circuit current (I_{nc})	24
5.4.3	Rated conditional residual short-circuit current ($I_{\Delta c}$).....	24
6	Marking and other product information.....	24
6.1	Information and marking for PRCDs	24
6.2	Information to be provided in an instruction sheet	27
7	Standard conditions for operation in service and for installation.....	27
7.1	Standard conditions	27
7.2	Conditions for installations	28
7.3	Pollution degree.....	28
8	Requirements for construction and operation.....	28
8.1	Mechanical design	28
8.1.1	General	28
8.1.2	Plug part, socket-outlet parts and RCD part(s).....	29
8.1.3	Mechanism	34
8.1.4	Clearances and creepage distances (see Annex C)	35
8.1.5	Screws, current-carrying parts and connections	37
8.1.6	Terminals for external conductors for rewirable PRCDs	37
8.1.7	Terminations for non-rewirable PRCDs	39
8.1.8	Current-carrying parts.....	39
8.2	Protection against electric shock.....	40
8.2.1	General	40
8.2.2	Requirements relating to plugs and socket-outlets, whether incorporated or not in integral items.....	40
8.3	Dielectric properties	42
8.4	Temperature rise	42
8.4.1	Temperature rise limits	42