BS EN 63024:2018

BSI Standards Publication

Requirements for automatic reclosing devices (ARDs) for circuit-breakers, RCBOs-RCCBs for household and similar uses

National foreword

This British Standard is the UK implementation of EN 63024:2018. It is derived from IEC 63024:2017. It supersedes BS EN 50557:2011, which will be withdrawn on 17 January 2021.

The CENELEC common modifications have been implemented at the appropriate places in the text. The start and finish of each common modification is indicated in the text by tags 〖C〉 〈C〗.

The UK participation in its preparation was entrusted to Technical Committee PEL/23/1, Circuit breakers and similar equipment for household use.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 August 2018.

Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 63024

April 2018

ICS 29.120.50

Supersedes EN 50557:2011

English Version

Requirements for automatic reclosing devices (ARDs) for circuit-breakers, RCBOs and RCCBs for household and similar uses (IEC 63024:2017)

Exigences pour les dispositifs à refermeture automatique (DRA) pour disjoncteurs, ID et DD, pour usages domestiques et analogues (IEC 63024:2017)

Anforderungen an automatische Wiedereinschalteinrichtungen für Leitungsschutzschalter, RCBOs, RCCBs für Hausinstallationen und ähnliche Zwecke (IEC 63024:2017)

This European Standard was approved by CENELEC on 2018-01-17. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey 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

European foreword

The text of document 23E/1037/FDIS, future edition 1 of IEC 63024, prepared by IEC/SC 23E "Circuit-breakers and similar equipment for household use" of IEC/TC 23 "Electrical accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 63024:2018.

A draft amendment, which covers common modifications to IEC 63024 (23E/1037/FDIS), was prepared by CLC/TC 23E "Circuit breakers and similar devices for household and similar applications" and approved by CENELEC.

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2019-01-17
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2021-01-17

This document supersedes EN 50557:2011.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 63024:2017 are prefixed “Z”.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2014/35/EU).

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZA and Annex ZZB, which are integral parts of this document.

Endorsement notice

The text of the International Standard IEC 63024:2017 was approved by CENELEC as a European Standard with agreed common modifications.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60085	NOTE	Harmonized as EN 60085.
IEC 60112:2003	NOTE	Harmonized as EN 60112:2003 (not modified).
IEC 60112:2003/AMD1:2009	NOTE	Harmonized as EN 60112:2003/A1:2009 (not modified).
IEC 60364-6:2006	NOTE	Harmonized as HD 60364-6:2007 (modified).
IEC 60384-14:2013	NOTE	Harmonized as EN 60384-14:2013 (not modified).
IEC 60695-2-10:2013	NOTE	Harmonized as EN 60695-2-10:2013 (not modified).
IEC 60998-2-3	NOTE	Harmonized as EN 60998-2-3.
IEC 61000-3-2	NOTE	Harmonized as EN 61000-3-2.
IEC 61000-3-3	NOTE	Harmonized as EN 61000-3-3.
IEC 62423	NOTE	Harmonized as EN 62423
ISO 306	NOTE	Harmonized as EN ISO 306.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60065 (mod)	2014	Audio, video and similar electronic apparatus - Safety requirements	EN 60065	2014
IEC 60384	Series	Fixed capacitors for use in electronic equipment - Part 9: Sectional specification: Fixed capacitors of ceramic dielectric, Class 2	EN 60384	Series
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60664-3	-	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	2017
IEC 60898-1	2015	Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 1: Circuit-breakers for a.c. operation	-	-
IEC 60898-2	2016	Circuit-breakers for overcurrent protection for household and similar installations - Part 2: Circuit-breakers for a.c. and d.c. operation	-	-
IEC 60947-5-1	-	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices	EN 60947-5-1	2016
IEC 60950-1 (mod)	-	Information technology equipment - Safety - Part 1: General requirements	EN 60950-1	2006
IEC 61000-4-2	-	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3	-	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006

Publication	Year	Title	EN/HD	Year
IEC 61000-4-4	-	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2012
IEC 61000-4-5	-	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2014
IEC 61000-4-6	-	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	2014
IEC 61000-4-16	-	Electromagnetic compatibility (EMC) - Part 4-16: Testing and measurement techniques - Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz	EN 61000-4-16	2016
IEC 61008-1 (mod)	2010	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's) - Part 1: General rules	EN 61008-1	2012
+A1 (mod)	2012		+A1	2014
+A2 (mod)	2013		+A2	2014
IEC 61009-1 (mod)	2010	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) - Part 1: General rules	EN 61009-1	2012
+A1 (mod)	2012		+A1	2014
+A2 (mod)	2013		+A2	2014
IEC 61189-2	-	Test methods for electrical materials, printed boards and other interconnection structures and assemblies - Part 2: Test methods for materials for interconnection structures	EN 61189-2	2006
IEC 61543	1995	Residual current-operated protective devices (RCDs) for household and similar use - Electromagnetic compatibility	EN 61543	1995
+A1	2004		+ A11	2003
+A2	2005		+A2	2006
IEC 61558	Series	Safety of transformers, reactors, power supply units and combinations thereof	EN 61558	Series
IEC 62019	-	Electrical accessories - Circuit-breakers and similar equipment for household use - Auxiliary contact units	EN 62019	1999
CISPR 14-1	-	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission	EN 55014-1	2017
ISO 7000	2014	Graphical symbols for use on equipment - Registered symbols	-	-

Annex ZZA
(informative)

Relationship between this European standard and the essential requirements of Directive 2014/30/EU [2014 OJ L96] aimed to be covered

This European standard has been prepared under the European Commission standardisation request C(2016) 7641 final of 30.11.2016[1], ('M/552'), as regards harmonised standards in support of Directive 2014/30/EU relating to electromagnetic compatibility, to provide one voluntary means of conforming to essential requirements of Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

Table ZZA.1 – Correspondence between this European standard and the Essential Requirements set out in Directive 2014/30/EU [2014 OJ L96]

Essential requirements of Directive 2014/30/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
Annex I. 1(a) (electromagnetic disturbances)	9.22.5	For CISPR 14-1, the text on the statistical evaluation of mass produced products in Clause 7 does not apply.
Annex I. 1(b) (electromagnetic immunity)	8.15-9.22	

WARNING 1: Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2: Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

[1] COMMISSION IMPLEMENTING DECISION C(2016) 7641 final of 30.11.2016 on a standardisation request to the European Committee for Standardisation, to the European Committee for Electrotechnical Standardisation and to the European Telecommunications Standards Institute as regards harmonised standards in support of Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.

Annex ZZB
(informative)

Relationship between this European standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered

This European Standard has been prepared under a Commission's standardization request relating to harmonized standards in the field of the Low Voltage Directive, M/511, to provide one voluntary means of conforming to safety objectives of Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZB.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

Table ZZB.1 – Correspondence between this European standard and Article 3 of Directive 2014/35/EU [2014 OJ L153]

Safety Objectives of Directive 2014/35/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
(1)(a)	1, 2, 3, 4, 5, 6 - 9.4	
(1)(b)	6.2, 8.1.1, 8.1.2.1, 8.1.2.2 and 9.5.1	
(1)(c)	7, 8.1.2.8, 8.10, 8.11, 8.15, 9.5.2, 9.5.4, 9.7.4, 9.13, 9.18.1, 9.18.2, 9.18.3, 9.19.1, 9.19.2 and 9.22	
(2) (a)	8.2, 8.5, 9.3, 8.10.8, 8.11, 8.13, 8.14, 9.1, 9.7.4, 9.13, 9.18.4, 9.19.1, 9.19.2, 9.20 and 9.21	
(2) (b)	8.1.5, 8.1.6, 8.4, 9.8, 9.9 and 9.12	
(2) (c)	8.1.2.3, 8.1.2.4, 8.1.2.5, 9.5.2 and 9.5.3	
(2) (d)	8.1.3, 8.1.4, 8.3, 9.6, 9.7 and 9.11	
(3) (a)	8.7 - 9.15	
(3) (b)	8.8, 8.9, 8.15, 9.16, 9.17 and 9.22	
(3) (c)	8.6, 8.12, 9.14 and 9.17	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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REQUIREMENTS FOR AUTOMATIC RECLOSING DEVICES (ARDs) FOR CIRCUIT-BREAKERS, RCBOs AND RCCBs FOR HOUSEHOLD AND SIMILAR USES

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

International Standard IEC 63024 has been prepared by subcommittee 23E: Circuit breakers and similar equipment for household use, of IEC technical committee 23: Electrical accessories.

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

FDIS	Report on voting
23E/1037/FDIS	23E/1038/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://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

Automatic reclosing devices (ARDs) are intended to reclose circuit-breakers, RCBOs, and RCCBs after tripping in order to re-establish continuity of service.

REQUIREMENTS FOR AUTOMATIC RECLOSING DEVICES (ARDs) FOR CIRCUIT-BREAKERS, RCBOs AND RCCBs FOR HOUSEHOLD AND SIMILAR USES

1 Scope

This International Standard applies to automatic reclosing devices (ARDs) for household and similar uses, for rated voltage not exceeding 440 V AC, and which are intended to be used in combination with circuit-breakers, RCCBs and RCBOs, and designed either for factory assembly or for assembly on site.

These devices are intended to reclose main protective devices (MPDs) such as circuit-breakers complying with IEC 60898-1 and/or IEC 60898-2, RCCBs complying with IEC 61008-1 and/or IEC 62423, and RCBOs complying with IEC 61009-1 and/or IEC 62423 after tripping of those devices in order to re-establish continuity of service.

This document includes the following types of ARDs:

– ARDs with assessment means, reclosing only if both the prospective line current and the prospective earth-fault current do not exceed given values;
– ARDs with assessment means, reclosing only if the prospective line current does not exceed a given value;
– ARDs with assessment means, reclosing only if the prospective earth-fault current does not exceed a given value;
– ARDs that recloses without any assessment.

NOTE 1 Installation rules define the condition of use of each of the products and the types.

NOTE 2 The assessment cannot substitute the verifications required by IEC 60364-6.

NOTE 3 The requirements and tests for the assessment function in IT systems are under consideration.

This document does not apply to ARDs with multiple settings adjustable by means accessible to the user in normal service.

Devices covered by this document are intended to be suitable for operation by uninstructed persons without the need for maintenance.

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 60065:2014, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60384 (all parts), *Fixed capacitors for use in electronic equipment*

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage 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*