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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Residual current operated circuit-breakers for household and similar use – Part 1: Outline of blocks and modules for residual current device standards

Interrupteurs automatiques à courant différentiel résiduel pour usage domestique et analogue – Partie 1: Présentation des blocs et modules pour les normes des dispositifs différentiels résiduels

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RESIDUAL CURRENT OPERATED CIRCUIT-BREAKERS FOR HOUSEHOLD AND SIMILAR USE –

Part 1: Outline of blocks and modules for residual current device standards

FOREWORD

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International Standard IEC 62873-1 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 standard is based on the following documents:

CDV	Report on voting
23E/945/CDV	23E/988/RVC

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.

A list of all parts of the IEC 62873 series published under the general title *Residual current operated circuit-breakers for household and similar use* 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 "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- withdrawn,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

When revising standards within the same group of standards (e.g. RCCBs, RCBOs), it can be clearly seen that there are some common clauses (e.g. reliability of terminals, markings), some clauses with limited differences and some clauses that are completely different (e.g. short-circuit test clauses for RCCBs and RCBOs).

In many cases, there are some mistakes or inconsistencies in clauses which should be identical. Moreover, during each revision, some modifications are made in a document and not systematically introduced in the other documents of the same group of standards, thus leading to new inconsistencies or mistakes. In addition, there are also some significant differences between IEC TR 60755 and IEC 61008-1 or IEC 61009-1, although these three standards should be consistent.

In consultation with the IEC Central Office, SC 23E developed a new approach allowing the production of short papers dealing with only one topic (e.g. one clause of a standard) in order to improve the efficiency of the work and to avoid the many mistakes and discrepancies introduced within the standards over the years. A template was agreed for producing this work.

This approach was launched with several clauses in order to avoid the mistakes and the discrepancies within clauses which should be similar or identical.

This document defines the objectives of this approach, the scope, the methodology and the processes. This document constitutes also a summary of the blocks and modules.

RESIDUAL CURRENT OPERATED CIRCUIT-BREAKERS FOR HOUSEHOLD AND SIMILAR USE –

Part 1: Outline of blocks and modules for residual current device standards

1 Scope

The IEC 62873 series covers available common standards intended to be used in conjunction with or for the preparation of RCD (residual current device) standards.

This part of IEC 62873 defines the methodology and processes used when producing standards based on a new approach (hereafter referred to as blocks and modules) aiming at harmonizing a family of standards, thus avoiding mistakes, inconsistencies or discrepancies within this family of standards. The family of standards considered in this document consists of standards for RCCBs (Residual Current Circuit-Breakers without overcurrent protection), RCBOs (Residual Current Circuit-Breakers with overcurrent Protection), and general safety requirements for residual current operated protective devices (namely IEC 61008-1, IEC 61009-1 and IEC TR 60755).

This approach defines a way to optimize drafting of standards, aiming to keep a common or similar structure, to have common clauses (as far as possible), to avoid inconsistencies, to do editorial work only once, to speed up production of standards, to ensure that a comment on one clause in one standard is also taken into account in other standards, if needed.

The principles of the blocks and modules approach are:

– to identify those parts of the standards which need to be identical (or with limited differences), and those parts of the standards which should remain different;

– to set a library of those common parts;

– to identify the parts which should be published as stand-alone standards;

– to draft product standards, using the library;

– to keep track of the common parts used in a product standard when revision will be needed in the future.

This document also lists the available blocks and modules which were prepared for RCD product standards.

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 TR 60755, *General requirements for residual current operated protective devices*

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

IEC 61009-1, *Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) – Part 1: General rules*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
harmonized clause
clause whose content is common to several standards

3.2
module
harmonized clause intended to be copied and assembled in a product standard

Note 1 to entry: Modules may be partially harmonized (e.g. part applicable to RCCB only).

Note 2 to entry: Modules are kept in the SC 23E secretary library.

3.3
block
harmonized and self-standing clause(s), referred to in a product standard and published as a separate standard (e.g. glossary for definitions for all RCDs)

4 Methodology

4.1 General

The process for harmonization of clauses and preparation of a module or a block is explained in Figure 1.

4.2 Harmonization of clauses

4.2.1 Drafting of a harmonized clause

Preparation of a harmonized clause requires the following tasks to be performed:

– comparison of the same clauses within the family of standards where harmonization is being done and proposal if those clauses may be harmonized;
– drafting of the harmonized clause for the given family of standards, using the specific template. In case a paragraph is only applicable to a specific standard, this is indicated above the paragraph.
– revision of the harmonized clause by a task force of one or two experts and then analysis of the result of by an ad hoc group;
– proposals from task forces and ad hoc group are then submitted to SC 23E for decision regarding this harmonized clause. The decisions taken by SC 23E cover technical and editorial aspects and circulation as a module or as a block.

NOTE 1 Clauses are harmonized first and later become either a block or a module.

NOTE 2 The process defined above is achieved by task forces and by an ad hoc group. This is a choice within SC 23E in order to accelerate the process for creation of harmonized clauses; other means to achieve this work could be applied.

4.2.2 Preparation of a module

A harmonized clause which is intended to be a module needs to be prepared in the following way:

– circulation as Document for Comments (DC) to National Committees (NCs) in order to get feedback from countries regarding the technical content of the module;

– decisions from SC 23E regarding the comments provided by the NCs and introduction of the agreed comments in the module. This document is circulated as an INF document. In case there is significant modification in the module, a second DC may be circulated to NCs for comments;

– the module is then edited by IEC Central Office to comply with IEC drafting rules and is then kept in the library of SC 23E secretary in order to be used when drafting standards.

The module is given an IEC number (see 4.2.4) and it is circulated as an INF document (e.g. 23E/XXX/INF).

4.2.3 Preparation of a block

A harmonized clause which is intended to be a block will follow the IEC rules for drafting standards. It is intended to be published as an IEC standard to which it will be possible to refer (e.g. terms and definitions for RCDs).

4.2.4 Numbering of documents and edition numbers

Table 1 specifies the numbering given to the documents prepared within the methodology of blocks and modules.

Table 1 – Document numbering

Document type	Example of document numbering	Remarks
Outline document	IEC 62873-1	–
Glossary and definitions	IEC 62873-2	–
Block	IEC 62873-3-X	EXAMPLE IEC 62873-3-1 for terminals for screwless type terminals
Module	Module X0.YY	EXAMPLE module 50.1 for the module that will be introduced in 5.1

4.2.5 Module for figures and module for tables

A module containing all the figures is prepared in order to have consistent figures in all the standards. This module provides a unique number to each figure.

A module containing all the tables is prepared in order to have consistent tables in all the standards. This module provides a unique number to each table.

4.3 Assembly of a standard

4.3.1 General

When preparing a standard based on the blocks and modules approach, the following are taken into consideration:

– the modules are copied in the draft document, where relevant;

– a table of modules used in the standard is introduced in an informative annex;

– the standard may make reference to other standards (blocks), where applicable;

– non-harmonized clauses may be introduced where relevant.

The draft document then follows the IEC Directives for voting process.

The process for assembly of a standard is shown in Figure 2.

4.3.2 Introduction of modules

The necessary modules are introduced in the draft document by copying the content of the module for a given clause. If a module contains an indication that a paragraph or a subclause is not applicable, then this paragraph or this subclause is removed from the draft.

NOTE All the indications or secretary notes in the module, such as “The following text highlighted in grey applies to RCCB only.”, are removed when assembling the standard.

The abbreviation PCBM is replaced by the relevant abbreviation: RCD, or RCCB, or RCBO, ...

When introducing a module in a standard, the reference and the edition of the module shall be indicated in a table situated in an informative annex. An example of such a table is provided in Table 2 below.

Table 2 – Example of table for correspondence between clauses and modules used in this standard

Clause(s)	Module/block	Number	Edition/date	Remarks
1	Not harmonized	–	–	
2	Not harmonized	–	–	
3	Block	IEC 62873-2	1.0	
4	Module	Module XXX	yyyy/mm	23E/ZZZ/INF
5	Module	Module YYY	yyyy/mm	23E/ZZZ/INF

4.3.3 Reference to other standards

The reference to other standards (blocks) is made in the draft document where and when necessary. The reference is a dated reference in order to avoid that a modification to a referred standard would impact compliance with the standard itself.

The standards which are referred to are also listed in the clause for normative references.

4.3.4 Non-harmonized clauses

When and where relevant, non-harmonized clauses may be introduced, in the case where no specific module exists for such a clause. When a non-harmonized clause is introduced, if a similar non-harmonized clause is used in another standard, it is possible that some inconsistencies will exist between those two standards.

In Table 2, a non-harmonized clause is mentioned as “Not harmonized”.

4.3.5 Figures and tables

When introducing the figures, the module for figures (see 4.2.5) is used, and each necessary figure is copied in the standard with its unique number. In the case where a figure is not needed in a given standard, the figure will not be copied in the standard. Figures keep the number given in the module for figures; as a consequence, the figure numbers in the standard will not be contiguous. Figures not used will be mentioned as “Void”.

When introducing the tables, the module for tables (see 4.2.5) is used, and each necessary table is copied in the standard with its unique number. In the case where a table is not

needed in a given standard, the table will not be copied in the standard. Tables keep the number given in the module for tables; as a consequence, the table numbers in the standard will not be contiguous. Tables not used will be mentioned as “Void”.

Tables and figures are introduced systematically at the end of a document, therefore avoiding linking them with a particular clause.

4.3.6 Voting and commenting process

The blocks and modules approach only defines a methodology to prepare standards in order to avoid inconsistencies or mistakes and to accelerate the drafting process. Therefore, when the assembly of the standard is completed, the document (Working Draft) follows the IEC Directives for comment and vote (see ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement).

Any change in a harmonized clause during the commenting and voting process shall be re-introduced in the corresponding module.

4.4 Revision of a standard using blocks and modules

4.4.1 General

For the revision of a standard using the modules in the library of the secretary, it is necessary to introduce the modification in the standard and in the relevant module in order to keep track of the modification for further application in other standards using this module. The process in 4.4.2 to 4.4.4 shall be complied with.

4.4.2 Modification of the relevant module (step 1)

It is recommended to introduce the necessary modification in the relevant module in a first step. This introduction will allow verifying that the modification is consistent with the other standards using this module. However, a revised module cannot be issued in the library of the secretary until the modification is accepted by NCs.

4.4.3 Introduction of the revised module in the standard (step 2)

In a second step, the revised module will be introduced in the standard which needs to be revised. This process will follow the process defined in 4.3, but only for the clause of the standard which needs to be modified.

NOTE It is possible to achieve the steps 1 (see 4.4.2) and 2 at the same time.

4.4.4 Other standards using this module

If another standard uses this module, it need not be automatically revised. But as the module was updated and is kept in the library of modules, when the revision of this standard is decided, this modification will be introduced.

EXAMPLE:

Standard A, standard B and standard C were assembled using module approach.

The decision to revise standard A is taken, because subclause 5.3 of this standard needs to be revised.

Nevertheless, the decision to revise standards B and C is not taken because these standards were already revised recently.

Subclause 5.3 of standard A is modified and standard A follows the usual IEC procedure for comments and vote.

Once the modifications have been accepted by NCs, a new Module 5.3 is issued and introduced in the library of the secretary.

Later on, when the decision to revise standard B or C is taken, the new Module 5.3 will be introduced.