

INTERNATIONAL STANDARD



**Residual current operated circuit-breakers for household and similar use –
Part 3-2: Particular requirements for **RCDs** devices with flat quick-connect
terminations**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RESIDUAL CURRENT OPERATED CIRCUIT-BREAKERS
FOR HOUSEHOLD AND SIMILAR USE –****Part 3-2: Particular requirements for ~~RCDs~~ devices
with flat quick-connect terminations**

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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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

International Standard IEC 62873-3-2 has been prepared by subcommittee 23E: Circuit breakers and similar equipment for household use, of IEC technical committee 23: Electrical accessories.

This second edition cancels and replaces the first edition published in 2016. This edition constitutes a technical revision.

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

- a) Modification of the scope to address other devices in addition to RCDs;
- b) Modification of 8.1 so that IEC 62873-3-2 can be referred to by other product standards in addition to those for RCDs;
- c) Modification of 9.1 so that IEC 62873-3-2 can be referred to by other product standards in addition to those for RCDs.

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

FDIS	Report on voting
23E/1195/FDIS	23E/1201/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 is intended to be referred to by a product standard of subcommittee IEC SC23E (e.g. from the IEC 61008 series, IEC 61009 series, IEC 62606, and IEC 63052).

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.

<https://standards.iec.ai/catalog/standards/iec/ce8f88d1-9c1f-4e4a-9d99-9229d50835d3/iec-62873-3-2-2020>

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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This document is part of the series described in the outline document IEC 62873-1.

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

Part 3-2: Particular requirements for ~~RCDs~~ devices with flat quick-connect terminations

1 Scope

This document applies to ~~RCDs~~ devices equipped with flat quick-connect terminations consisting of a male tab (~~see 3-2~~) with nominal width 6,3 mm and thickness 0,8 mm, to be used with a mating female connector for connecting electrical copper conductors according to the manufacturer's instructions, for rated currents up to and including 16 A.

NOTE The use of ~~RCDs~~ with flat quick-connect terminations for rated currents up to and including 20 A is accepted in BE, FR, IT, ES, PT and US.

This document cannot be used alone but is intended to be applied together with ~~an RCD product standard (IEC 61008-1 or IEC 61009-1) if an RCD is equipped with flat quick-connect terminations~~ the applicable product standard in which it is referred to.

The connectable electrical copper conductors are flexible, having a cross-sectional area up to and including 4 mm², or rigid-stranded, having a cross-sectional area up to and including 2,5 mm² (AWG equal to or greater than 12).

This document applies exclusively to ~~RCDs~~ products having male tabs as an integral part of the device.

2 Normative references

[IEC 62873-3-2:2020](https://standards.iteh.ai/catalog/standards/iec/ce8f88d1-9c1f-4e4a-9d99-9229d50835d3/iec-62873-3-2-2020)

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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 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~~

~~IEC 61210, Connecting devices – Flat quick-connect terminations for electrical copper conductors – Safety requirements~~

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62873-2 and the following apply.

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

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

3.1

flat quick-connect termination

electrical connection consisting of a male tab (3.2) and a female connector (3.3) which can be pushed into and withdrawn with or without the use of a tool

3.2

male tab

portion of a quick-connect termination which receives the female connector

3.3

female connector

portion of a quick-connect termination which is pushed onto the male tab

3.4

detent

dimple (depression) or hole in the male tab which engages a raised portion on the female connector to provide a latch for the mating parts

4 Classification

Clause 4 of the ~~RCD~~ product standard, in which this document is referred to, applies.

5 Characteristics of ~~RCDs~~ products

Clause 5 of the ~~RCD~~ product standard, in which this document is referred to, applies.

6 Marking and other product information

In addition to Clause 6 of the ~~RCD~~ product standard, in which this document is referred to, the following requirements apply.

The following information regarding the female connector ~~according to IEC 61210~~ and the type of conductor to be used shall be given in the manufacturer's instructions:

- manufacturer's name or trademark;
- type reference;
- information on cross-sections of conductors and colour codes of insulated female connectors (see examples in Table 1);
- the use of only silver- or tin-plated copper alloys.

Table 1 – Colour code of female connectors in relationship with the cross-section of the conductor

Cross-section of the conductor		Colour code of the female connector
mm ²	AWG	
1	18	Red
1,5	16	Red or blue
2,5	14	Blue or yellow
4	12	Yellow

7 Standard conditions for operation in service and for installation

Clause 7 of the ~~RCD~~ product standard, in which this document is referred to, applies.

8 Requirements for construction and operation

8.1 General

~~Clause 8 of the RCD product standard applies, with the following exceptions:~~

~~Subclause 8.1.3 applies, the female connectors being fitted to the male tabs of the RCD.~~

~~Subclause 8.1.5 does not apply.~~

~~In addition, the following requirements apply.~~

The requirements of Clause 8 of this document apply in addition to applicable subclauses of Clause 8 of the product standard, in which this document is referred to.

8.2 Terminals for external conductors

8.2.1 Male tabs and female connectors shall be of a metal having mechanical strength, electrical conductivity and resistance to corrosion adequate for their intended use.

NOTE Silver- or tin-plated copper alloys are examples of suitable solutions.

8.2.2 The nominal width of the male tab is 6,3 mm and its thickness is 0,8 mm, applicable to rated currents up to and including 16 A.

NOTE 4 The use of male tabs and female connectors for rated currents up to and including 20 A is accepted in BE, FR, IT, PT, ES and US.

The dimensions of the male tab shall comply with those specified in Table 2 and in Figure 1, Figure 2, Figure 3 and Figure 4, where the dimensions *A*, *B*, *C*, *D*, *E*, *F*, *J*, *M*, *N*, *P* and *Q* are mandatory.

The dimensions of the female connector which may be fitted on the male tab are given in Figure 5 and in Table 3.

The shapes of the various parts may deviate from those given in the figures, provided that the specified dimensions are not influenced and the test requirements are complied with (for example: corrugated tabs, folded tabs, etc).

Compliance is checked by inspection and by measurement.

8.2.3 Male tabs shall be securely retained.

Compliance is checked by the mechanical overload test of 9.2.

Table 2 – Dimensions of tabs

Nominal size mm		Dimension										
		<i>A</i>	<i>B</i> minimum	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>J</i>	<i>M</i>	<i>N</i>	<i>P</i>	<i>Q</i> minimum
6,3 × 0,8	Dimple	1,0		0,84	6,40	4,1	2,0	12°	2,5	2,0	1,8	
		0,7	7,8	0,77	6,20	3,6	1,6	8°	2,2	1,8	0,7	8,9
	Hole	1,0		0,84	6,40	4,7	2,0	12°			1,8	
		0,5	7,8	0,77	6,20	4,3	1,6	8°			0,7	8,9

NOTE 1 For the dimensions *A* to *Q*, refer to Figure 1 to Figure 4.

NOTE 2 Where two values are shown in one column, they give the maximum and the minimum dimensions.

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