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**Električni pribor - Odklopniki za nadtokovno zaščito za gospodinjstvo in podobne inštalacije - 2. del: Odklopniki za izmenično in enosmerno napetost (IEC 60898-2:2016 , spremenjen)**

Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 2: Circuit-breakers for a.c. and d.c. operation (IEC 60898-2:2016 , modified)

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Petit appareillage électrique - Disjoncteurs pour la protection contre les surintensités pour installations domestiques et analogues - Partie 2: Disjoncteurs pour le fonctionnement en courant alternatif et en courant continu (IEC 60898-2:2016 , modifiée)

**Ta slovenski standard je istoveten z: prEN 60898-2**

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**ICS:**

29.120.50	Varovalke in druga medtokovna zaščita	Fuses and other overcurrent protection devices
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**oSIST prEN 60898-2:2019**

**en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 60898-2**

July 2019

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ICS

English Version

**Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 2: Circuit-breakers for a.c. and d.c. operation (IEC 60898-2:2016 , modified)**

Petit appareillage électrique - Disjoncteurs pour la protection contre les surintensités pour installations domestiques et analogues - Partie 2: Disjoncteurs pour le fonctionnement en courant alternatif et en courant continu (IEC 60898-2:2016 , modifiée)

To be completed  
(IEC 60898-2:2016 , modifiziert)

This draft European Standard is submitted to CENELEC members for enquiry.  
Deadline for CENELEC: 2019-10-11.

The text of this draft consists of the text of IEC 60898-2:2016.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CENELEC 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, Turkey and the United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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**

prEN 60898-2:2019 (E)

## European foreword

This document (prEN 60898-2:2019) consists of the text of IEC 60898-2:2016 prepared by SC 23E “Circuit-breakers and similar equipment for household use” of IEC/TC 23 “Electrical accessories”, together with the common modifications prepared by CLC/TC 23E “Circuit breakers and similar devices for household and similar applications”.

This document is currently submitted to the enquiry.

The following dates are proposed:

- latest date by which the existence of this document has to be announced at national level (doa) dor + 6 months
- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) dor + 12 months
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) dor + 60 months (to be confirmed or modified when voting)

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60898-2:2016 are prefixed “Z”.

## iTeh STANDARD PREVIEW

This document has been prepared under a mandate given to GENELEC 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 ZZ, which is an integral part of this document.

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## 1 Modification to the European foreword

*Replace the 8<sup>th</sup> paragraph with:*

“

This Part 2 is to be used in conjunction with EN 60898-1:2019 referred hereafter as Part 1.”

## 2 Modification to the Scope

*Replace the 1<sup>st</sup> paragraph with:*

“

Clause 1 of Part 1 is applicable except as follows”:

## 3 Modifications to Clause 2, “Normative reference”

*Replace the 1<sup>st</sup> paragraph with:*

“

Clause 2 of Part 1 is applicable except as follows”:

*Add the following note at the end of the clause:*

”

NOTE See Annex ZB for corresponding European publications.”

## 4 Modification to Clause 3, “Terms and definitions”

*Replace the 1<sup>st</sup> paragraph with:*

“

Clause 3 of Part 1 is applicable except as follows:”

## 5 Modification to Clause 4, “Classification”

*Replace the 1<sup>st</sup> paragraph with:*

“

Clause 4 of Part 1 is applicable except as follows:”

## 6 Modifications to Clause 5, “Characteristics of circuit-breakers”

*Replace the 1<sup>st</sup> paragraph with:*

“

Clause 5 of Part 1 is applicable except as follows:”

*Replace 5.3.1 with:*

“

### 5.3.1 Standard values of rated voltage

*Replacement:*

The standard values of rated voltage are given in Table 1.

Examples of connections of circuit-breakers in DC systems are given in Figure 18.

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Table 1 — Standard values of rated voltage

Circuit-breakers	AC		DC <sup>b</sup>		
	AC circuit supplying the circuit-breaker	Rated AC voltage	DC circuit supplying the circuit-breaker	Rated DC voltage	DC wiring examples
Single-pole	Single phase (phase to neutral or phase to phase)	230 V	Two wires (unearthed system)	220 V	Figure 18a
	Single phase (phase to neutral) or three-phase (3 single-pole circuit-breakers) ((3-wire or 4-wire)	(230/400) V	–	–	
Two-pole	Single phase (phase to phase)	400 V	Two wires (earthed system)	(220/440) V	Figures 18b, 18c, 18d

Applicable for DC voltages:

a Void

b The rated voltage per pole shall not exceed 220 V DC.

Applicable for AC voltages:

NOTE 1 In IEC 60038 the network voltage value of (230/400) V has been standardized. This value should progressively supersede the values of (220/380) V and (240/415) V.

NOTE 2 Wherever in this standard there is a reference to 230 V or 400 V, it may be read as 220 V or 240 V, and 380 V or 415 V respectively.

NOTE 3 Circuit-breakers complying with the requirements of this standard may be used in IT systems.

Two-pole circuit breakers rated 230 V may have one or two protected poles.

Two-pole circuit breakers rated 400 V shall have two protected poles.

Three-pole circuit breakers shall have three protected poles.

Four-pole circuit breakers may have three or four protected poles.

The manufacturer shall declare in his literature the minimum voltage for which the circuit-breaker is designed.

*Relevant tests are under consideration.*

## 7 Modifications to Clause 6, “Marking and other product information”

**Replace the 1<sup>st</sup> paragraph with:**

“

Clause 6 of Part 1 is applicable except as follows:

Add after the 1<sup>st</sup> paragraph the title for subclause 6.1:

### 6.1 Standard marking”

After item f) **delete:**

“

Delete j)”

**Rename** item m) to item n).

**Replace the 4<sup>th</sup> paragraph from the end of the clause with:**

“

The information under a), b), f), g), l), m) and n) may be marked on the side or on the back of the device and be visible only before the device is installed.”

**Add at the end of the Clause:**

“

**Add at the end of the Clause:**

## 6.2 Guidance table for marking

Marking and other product information		Markings may be on the circuit-breaker itself			Product information in catalogue
		If, for small devices the space available does not allow all the above data to be marked, at least this information shall be marked and <b>visible</b> when the device is installed.	This information may be marked on the <b>side</b> or on the back of the device and be visible only before the device is installed.	Alternatively the information may be on the inside of any <b>cover</b> which has to be removed in order to connect the supply wires.	
a)	manufacturer's name or trademark		X		
b)	type designation, catalogue number or serial number		X		
c)	rated AC voltage with the symbol ~ and rated DC voltage with the symbol — — —	X			
d)	rated current without symbol "A" preceded by the symbol of overcurrent instantaneous tripping (B or C), for example B 16	X			
e)	rated frequency if the circuit-breaker is designed only for one frequency (see 5.3.3)				X
f)	rated short-circuit capacity for AC and DC in amperes in one rectangle, without the symbol A, if valid for both AC and DC (see example 1 in 6.1). If the rated short-circuit capacity is different for AC and DC this shall be indicated in two adjacent rectangles, without the symbol A, with the symbol ~ near the rectangle containing the AC value and with the symbol — — — near the rectangle containing the DC value (see example 2 in 6.1)		X (*)		
g)	wiring diagram, unless the correct mode of connection is evident		X	X	
h)	reference calibration temperature, if different from 30 °C				X
i)	the degree of protection (only if different from IP20)				X
j)	Void				
k)	Void				
l)	breaking capacity on one pole of multipole MCBs in case of short-circuit to earth Icn1		X		

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Marking and other product information Each circuit-breaker shall be marked in a durable manner with all or, for small apparatus, part of the following data:		Markings may be on the circuit-breaker itself			Product information in catalogue
		If, for small devices the space available does not allow all the above data to be marked, at least this information shall be marked and <b>visible</b> when the device is installed.	This information may be marked on the <b>side</b> or on the back of the device and be visible only before the device is installed.	Alternatively the information may be on the inside of any <b>cover</b> which has to be removed in order to connect the supply wires.	Any remaining information not marked shall be given in the manufacturer's <b>catalogues</b> .
m)	energy limiting class in a square in accordance with Annex ZA, if applied. $I_{cn}$ and the energy limiting class, when applied, shall be both on the device and combined;		X (*)		X (**)
n)	time constant T15 within a rectangle, if applicable, associated with the marking for the short-circuit capacity at the time constant of 15 ms		X		
	indication of the terminal for the neutral with "N"		X		
	additional marking of performance to other standards		X		
	terminals marked with + or - if necessary		X		

\*  $I_{cn}$  and the energy limiting class, if applied, shall be both on the device and combined together.  
 (\*\*) The manufacturer shall publish in his literature the  $I^2t$  characteristic.

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**8 Modification to Clause 7, "Standard conditions for operating in service"**

Replace the 1<sup>st</sup> paragraph with:  
 " Clause 7 of Part 1 applies."

**9 Modifications to Clause 8, "Requirements for construction and operation"**

Replace the 1<sup>st</sup> paragraph with:  
 " Clause 8 of Part 1 is applicable except as follows":

Add after the 1<sup>st</sup> paragraph:  
 " **8.1.3 Clearances and creepage distances (see Annex B)**

Addition of the following note 3 to Table 4:  
 NOTE 3 The values given for 230 V, 230/400V and 400 V AC are also valid for 220 V and 440 V DC"

**10 Modifications to Clause 9, "Tests"**

Replace the 1<sup>st</sup> paragraph with:  
 " Clause 9 of Part 1 is applicable except as follows":



**Add after the 1<sup>st</sup> paragraph:**

“

### **9.1 Type tests and test sequences**

*Replacement of the second paragraph after “Table 9”:*

The test sequences and the number of samples to be submitted are stated in Annex C of this standard.”

**Add at the end of 9.10.3.2, “For circuit-breakers of the B-type”:**

“

*Moreover, the circuit-breaker shall perform the test of 9.10.2.2.”*

**Add at the end of 9.10.3.3, “For circuit-breakers of the C-type”:**

“

*Moreover, the circuit-breaker shall perform the test of 9.10.2.2.”*

**Add after subclause 9.10.3.3:**

“

*Delete sub-Clause 9.10.3.4”*

**Add after title of 9.12.11.2, “Tests at reduced short-circuit currents and at small direct currents” the following:**

“

*Replacement of the title of 9.12.11.2.1 with:*

#### **9.12.11.2.1 Tests at reduced AC short-circuit currents”**

**Replace the 1<sup>st</sup> paragraph of 9.12.11.4.4, “Performance at rated making and breaking capacity ( $I_{cn1}$ ) on individual poles of two-pole circuit-breakers” with:**

“

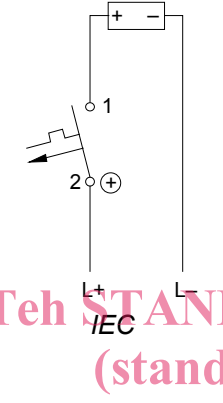
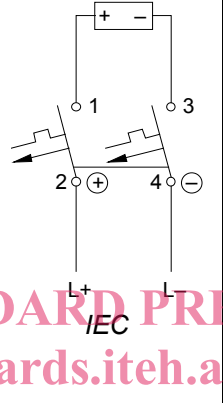
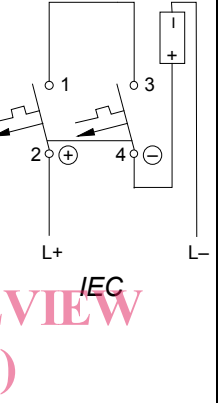
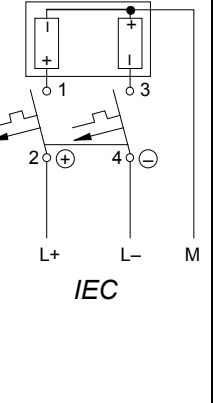
For alternating currents (AC), 9.12.11.4.4 of Part 1 applies.”

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Replace Figure 18, “Methods of connection of the circuit-breakers in different DC systems” with:

“

	a	b	c	d
<b>Circuit-breaker rated voltage</b>	<b>220 V</b>	<b>220/440 V</b>	<b>220/440 V</b>	<b>220/440 V</b>
<b>Maximum voltage between the conductors</b>	<b>220 V</b>	<b>440 V</b>	<b>440 V</b>	<b>440 V</b>
<b>Maximum voltage between conductor and earth</b>			<b>440 V<sup>a</sup></b>	<b>220 V</b>
<b>Circuit-breaker</b>	<b>Single-pole</b>	<b>Two-pole</b>	<b>Two-pole</b>	<b>Two-pole</b>
<b>Distribution system connected to earth</b>	<b>No</b>	<b>No</b>	<b>Yes</b>	<b>Yes</b>
<b>Circuit</b>				

<sup>a</sup> For applications with an earthed negative pole, where the voltage to earth is higher than the rated voltage of a single-pole circuit-breaker.

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## 11 Modifications to the annexes

Replace the text with:

The annexes of Part 1 are applicable, except as follows:

### Annex C (normative)

#### Test sequences and number of samples

Replace the 1<sup>st</sup> paragraph with:

“

Annex C of Part 1 applies with the following modifications”:

Add after Annex C the following new annexes:

“

Replace Annex ZB of EN 60898-1:2019 by the following one:

## Annex ZB (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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050	series	International Electrotechnical Vocabulary -- Part 103: Mathematics - Functions	--	-
IEC 60227	series	Polyvinyl chloride insulated cables of rated- voltages up to and including 450/750 V - Part 1: General requirements	--	-
IEC 60269	series	Low-voltage fuses - Part 1: General requirements	EN 60269	series
IEC 60364-4-41 (mod)	2005	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	Part 4-41: HD 60364-4-41	2017
-	-		+ A11	2017
IEC 60417	1973 <sup>1</sup>	Graphical symbols for use on equipment.- Index, survey and compilation of the single sheets.	--	-
IEC 60529	2013 <sup>1</sup>	Degrees of protection provided by enclosures- (IP Code)	--	-
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60695-2-10	-	Fire hazard testing - Part 2-10: Glowing/hot- wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2013
IEC 60695-2-11	2000	Fire hazard testing – Part 2-11: Glowing/hot- wire based test methods - Glow-wire flammability test method for end products	--	-
IEC 60898-1 (mod)	2015	Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 1: Circuit-breakers for a.c. operation	EN 60898-1	2019

<sup>1</sup> Dated as no European equivalent exists.

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60947-1	2007	Low-voltage switchgear and controlgear - Part 1: General rules	EN 60947-1	2007
IEC 60947-2	2006	Low-voltage switchgear and controlgear - Part 2: Circuit-breakers	EN 60947-2	2006
IEC 61545	1996	Connecting devices - Devices for the connection of aluminium conductors in clamping units of any material and copper conductors in aluminium bodied clamping units		-

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