National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 60898-2:2006

ICS 29.120.50

ELECTRICAL ACCESSORIES - CIRCUIT-BREAKERS FOR OVERCURRENT PROTECTION FOR HOUSEHOLD AND SIMILAR INSTALLATIONS -- PART 2: CIRCUIT-BREAKERS FOR A.C. AND D.C. OPERATION (IEC 60898-2:2000 (MOD) + A1:2003 (MOD))

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EUROPEAN STANDARD

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EN 60898-2

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Supersedes EN 60898-2:2001

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 60898-2:2000 + A1:2003, 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 (CEI 60898-2:2000 + A1:2003, modifiée)

Elektrisches Installationsmaterial – Leitungsschutzschalter für Hausinstallationen und ähnliche Zwecke Teil 2: Leitungsschutzschalter für Wechsel- und Gleichstrom (AC und DC) (IEC 60898-2:2000 + A1:2003, modifiziert)

This European Standard was approved by CENELEC on 2005-06-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

CENELEC

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

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Ref. No. EN 60898-2:2006 E

Foreword

The text of the International Standard IEC 60898-2:2000 + A1:2003, together with common modifications prepared by the Technical Committee CENELEC TC 23E, Circuit breakers and similar devices for household and similar applications, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60898-2 on 2005-06-01.

This European Standard supersedes EN 60898-2:2001.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2007-03-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2010-06-01

In this European Standard the common modifications to the International Standard are indicated by a vertical line in the left margin of the text.

This Part 2 is to be used in conjunction with EN 60898-1:2003 + corrigendum February 2004 + A1:2004.

When a particular subclause of Part 1 is not mentioned in this Part 2, that subclause applies as far as is reasonable. Where this Part 2 states "addition", "modification" or "replacement", the relevant text of Part 1 is to be adapted accordingly.

In this standard, the following print types are used:
- requirements: roman type;
- *test specifications: italic type;*
- notes: smaller roman type.

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1 Scope and object

This clause of Part 1 is applicable except as follows:

Addition at the end of the first paragraph:

This standard gives additional requirements for single- and two-pole circuit-breakers which, in addition to the above characteristics, are suitable for operation with direct current, and have a rated d.c. voltage not exceeding 220 V for single-pole and 440 V for two-pole circuit-breakers, a rated current not exceeding 125 A and a rated d.c. short-circuit capacity not exceeding 10 000 A.

NOTE This standard applies to circuit-breakers able to make and break both a.c. current and d.c. current.

Delete the last two paragraphs.

2 Normative references

This clause of Part 1 applies.

3 Definitions

Clause 3 of Part 1 applies with the following modification:

Addition:

3.5.10.3
time constant
the rise time $T = L/R$ (ms) of a prospective direct current to reach a value of 0,63 times the maximum peak current

4 Classification

Clause 4 of Part 1 applies with the following modifications:

4.1 According to the number of poles

Replacement:

– single-pole circuit-breakers;

– two-pole circuit-breakers with two protected poles.

4.5 According to the instantaneous tripping current (see 3.5.17)

Delete D-Type.

Addition:

4.7 According to the time constant

– Circuit-breakers suitable for d.c. circuits with a time constant of $T \leq 4$ ms.

– Circuit-breakers suitable for d.c. circuits with a time constant of $T \leq 15$ ms.

NOTE It is assumed that short-circuit currents of 1 500 A are not exceeded in installations in which, due to the loads connected, time constants in normal service up to 15 ms can occur. Where higher short-circuit currents may occur, the time constant of $T = 4$ ms is considered sufficient.

5 Characteristics of circuit-breakers

Clause 5 of Part 1 applies with the following modification:

5.3.1 Standard values of rated voltage

Replacement:

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

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

Table 1 – Standard values of rated voltage

Circuit-breakers	AC		DC [a]	
	AC circuit supplying the circuit-breaker	Rated voltage a.c.	Rated voltage d.c.	DC wiring examples
Single-pole	Single phase (phase to neutral or phase to phase)	230 V	220 V	Figure 18a
	Single phase (phase to neutral) or three-phase, using 3 single-pole circuit-breakers (3-wire or 4-wire)	(230/400) V	220 V	
Two-pole	Single phase (phase to phase)	400 V	(220/440) V	Figures 18b, 18c, 18d

Applicable for d.c. voltages:

[a] The rated voltage per pole shall not exceed 220 V d.c.

Applicable for a.c. 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.