SLOVENSKI STANDARD
SIST EN 62019:2000

01-april-2000

Electrical accessories - Circuit-breakers and similar equipment for household use - Auxiliary contact units (IEC 62019:1999)

Electrical accessories - Circuit-breakers and similar equipment for household use - Auxiliary contact units

Elektrisches Installationsmaterial - Schutzschalter und ähnliche Geräte für Hausinstallationen - Hilfsschalter

Petit appareillage électrique - Disjoncteurs et appareillage similaire pour usages domestiques - Blocs de contacts auxiliaires

Ta slovenski standard je istoveten z: **EN 62019:1999**

ICS:

29.120.50	Varovalke in druga medtokovna zaščita	Fuses and other overcurrent protection devices

SIST EN 62019:2000 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62019

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English version

Electrical accessories - Circuit-breakers and similar equipment for household use - Auxiliary contact units
(IEC 62019:1999)

Petit appareillage électrique
Disjoncteurs et appareillage
similaire pour usages domestiques
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(CEI 62019:1999)

Elektrisches Installationsmaterial
Schutzschalter und ähnliche Geräte
für Hausinstallationen - Hilfsschalter
(IEC 62019:1999)

This European Standard was approved by CENELEC on 1999-05-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

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Foreword

The text of document 23E/363/FDIS, future edition 1 of IEC 62019, prepared by 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 was approved by CENELEC as EN 62019 on 1999-05-01.

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) 2000-02-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2002-05-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annexes A and ZA are normative and annexes B, C and D are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62019:1999 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-441	1984	International Electrotechnical Vocabulary (IEV) Chapter 441: Switchgear, controlgear and fuses	-	-
IEC 60065 (mod)	1998	Audio, video and similar electronic apparatus - Safety requirements	EN 60065	1998
IEC 60249-2	series	Base materials for printed circuits Part 2: Specifications	EN 60249-2	series
IEC 60384-14	1993	Fixed capacitors for use in electronic equipment - Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	-	-
IEC 60617	series	Graphical symbols for diagrams	EN 60617	series
IEC 60664-3	1992	Insulation coordination for equipment within low-voltage systems Part 3: Use of coatings to achieve insulation coordination of printed board assemblies	HD 625.3 S1	1997
IEC 60898	1995[1)]	Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations	-	-
IEC 60998-2-2	1991	Connecting devices for low-voltage circuits for household and similar purposes Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units	EN 60998-2-2	1993

1) IEC 60898:1987 + corrigendum May 1988 + A2:1990 + A3:1990 + corrigendum August 1990, mod. are harmonized as EN 60898:1991. This European Standard applies with its corrigendum October 1991 and its amendments A1:1991 (IEC/A1:1989) and A11:1994 up to A18:1998.

Publication	Year	Title	EN/HD	Year
IEC 60947-5-1	1997	Low-voltage switchgear and controlgear Part 5-1: Control circuit devices and switching elements Section 1: Electromechanical control circuit devices	EN 60947-5-1 + A11	1997 1997
IEC 60947-5-4	1996	Section 4: Methods of assessing the performance of low energy contacts Special tests	EN 60947-5-4	1997
IEC 61008-1	1996[2)]	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) Part 1: General rules	-	-
IEC 61009-1	1996[3)]	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) Part 1: General rules	-	-
IEC 61210 (mod)	1993	Connecting devices - Flat quick-connect terminations for electrical copper conductors Safety requirements	EN 61210	1995
ISO 306	1994	Plastics - Thermoplastic materials Determination of Vicat softening temperature (VST)	EN ISO 306	1994

2) The European Standard EN 61008-1:1994 (IEC 61008-1:1990 + A1:1992, mod.) + corrigendum December 1997 + A2:1995 (IEC/A2:1995) + A11:1995 + A12:1998 + corrigendum April 1998 + A13:1998 + A14:1998 applies.

3) The European Standard EN 61009-1:1994 (IEC 61009-1:1991, mod.) + corrigendum December 1997 + A1:1995 (IEC/A1:1995) + A11:1995 + A2:1998 + A13:1998 + corrigendum April 1998 + A14:1998 + A15:1998 + A17:1998 applies.

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Petit appareillage électrique – Disjoncteurs et appareillage similaire pour usages domestiques – Blocs de contacts auxiliaires

Electrical accessories – Circuit-breakers and similar equipment for household use – Auxiliary contact units

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For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICAL ACCESSORIES –
CIRCUIT-BREAKERS AND SIMILAR EQUIPMENT FOR HOUSEHOLD USE –
AUXILIARY CONTACT UNITS

FOREWORD

1) The IEC (International Electrotechnical Commission) is a world-wide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.

3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

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

International Standard IEC 62019 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:

FDIS	Report on voting
23E/363/FDIS	23E/366/RVD

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

Annex A forms an integral part of this standard.

Annexes B, C and D are for information only.

ELECTRICAL ACCESSORIES –
CIRCUIT-BREAKERS AND SIMILAR EQUIPMENT FOR HOUSEHOLD USE –
AUXILIARY CONTACT UNITS

1 Scope and object

This International Standard applies to auxiliary contact units associated (or intended to be associated) with circuit-breakers for overcurrent protection, and with residual current operated circuit-breakers with or without integral overcurrent protection for household and similar installations, having a rated voltage not exceeding 440 V a.c. and 250 V d.c., and a rated current not exceeding 10 A.

NOTE 1 – These requirements may also be used as guidance for auxiliary contacts units intended to be assembled with other switching devices for household and similar installations.

NOTE 2 – It is recommended that the advice of the manufacturer be sought concerning any application with low level energy appliances (low level values of current and/or voltage.) For low-energy contacts, specific recommendations are given in IEC 60947-5-4.

The object of this standard is to state

a) the characteristics of the auxiliary contact units;

b) their electrical and mechanical requirements with respect to

   1) the various duties to be performed;
   2) the significance of the rated characteristics and of the markings;
   3) the tests to verify the rated characteristics;

c) the functional requirements to be satisfied by the auxiliary contact units with respect to

   1) environmental conditions, including those of enclosed equipment;
   2) dielectric properties;
   3) terminals;
   4) safety of use.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(441):1984, *International Electrotechnical Vocabulary (IEV) – Chapter 441: Switchgear, controlgear and fuses*

IEC 60065:1998, *Audio, video and similar apparatus – Safety requirements*

IEC 60249-2 (all specifications), *Base materials for printed circuits – Part 2: Specifications*

IEC 60384-14:1993, *Fixed capacitors for uses in electronic equipment – Part 14. Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains*

IEC 60617 (all parts), *Graphical symbols for diagrams*

IEC 60664-3:1992, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating to achieve insulation coordination of printed board assemblies*

IEC 60898:1995, *Electrical accessories – Circuit-breakers for overcurrent protection for household and similar installations*

IEC 60998-2-2:1991, *Connecting devices for low voltage circuits for household and similar purposes – Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units*

IEC 60947-5-1:1997, *Low-voltage switchgear and controlgear – Part 5: Control circuit devices and switching elements – Section one: Electromechanical control circuit devices*

IEC 60947-5-4:1996, *Low-voltage switchgear and controlgear – Part 5: Control circuit devices and switching elements – Section 4: Methods of assessing the performance of low-energy contacts. Special tests*

IEC 61008-1:1996, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) – Part 1: General rules*

IEC 61009-1:1996, *Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) – Part 1: General rules*

IEC 61210:1993, *Connecting devices – Flat quick-connect terminations for electrical copper conductors – Safety requirements*

ISO 306:1994, *Plastics – Thermoplastic materials – Determination of Vicat softening temperature (VST)*

3 Definitions

For the purpose of this International Standard, the following definitions apply.

3.1
auxiliary contact
contact included in an auxiliary circuit and mechanically operated by the switching device [IEV 441-15-10]

3.2
auxiliary contact unit
unit containing one or more control and/or auxiliary contacts mechanically operated by a main switching device

NOTE – The main switching device may be a circuit-breaker, RCCB, RCBO, switch, etc.

3.3
contact element (of an auxiliary contact)
structural part, fixed and movable, conducting or insulating, of an auxiliary contact necessary to close and open one single conducting path of the auxiliary contact unit [IEV 441-15-10, modified]

NOTE – The contact element and the actuating system may form an indivisible unit, but frequently one or more contact elements may be combined with one or more actuating system(s).

3.4
mini-gap contact element
contact element having a distance between contacts in the open position between 1,2 mm and 3 mm

4 Classification

Contact elements may be classified as follows.

4.1 According to the utilization categories (see table 1 of 5.4)

4.2 According to the electrical ratings based on utilization categories (see table 4)

4.3 According to one of the following constructions (see figure 1)

4.3.1 Form A – Single-gap make-contact element

4.3.2 Form B – Single-gap break-contact element

4.3.3 Form C – Single-gap make-break three terminal change-over contact element

4.3.4 Other types (see note 1)

4.4 According to the suitablility for PELV and SELV circuits

NOTE 1 – Other types are described in figure 1. (See also clause 3 and figure 4 of IEC 60947-5-1).

NOTE 2 – Distinction is made between make before break (overlap) change-over contact elements where the two circuits are both closed for a part of the travel of the moving contacts from one position to the other, and break before make (non-overlap) change-over contact elements where the two circuits are both open for a part of the travel of the moving contacts from one position to the other. Unless otherwise stated, change-over contact elements are break before make.

5 Characteristics

5.1 Type of auxiliary contact unit

For the type of auxiliary contact unit, the following shall be stated:

a) number of poles;

b) kind of current: a.c. and/or d.c.;

c) method of operation: indirectly by means of the main switching device.

5.2 Rated values of auxiliary contacts

The rated values of auxiliary contacts shall be stated in accordance with 5.2.1 to 5.2.3.

5.2.1 Rated voltages

An auxiliary contact is defined by the following rated voltages.

5.2.1.1 Rated operational voltage (U_e)

A rated operational voltage of an auxiliary contact is a value of voltage which, combined with a rated operational current, determines the application of the auxiliary contact unit and to which the relevant tests and the utilization categories are referred.

5.2.1.2 Rated insulation voltage (U_i)

The rated insulation voltage of an auxiliary contact unit is the voltage value to which dielectric test voltage and creepage distances are referred. In no case shall the maximum value of the rated operational voltage exceed that of the rated insulation voltage.

5.2.2 Rated operational current (I_e)

The rated operational current(s) of an auxiliary contact is (are) stated by the manufacturer and take(s) into account the relevant values of the rated operational voltage and the rated frequency, the kind of current, and the utilization category.

5.2.3 Rated frequency

The supply frequency for which an auxiliary contact is designed and to which the other characteristic values correspond.

NOTE – The same auxiliary contact may be rated for both a.c. and d.c and be assigned a number or a range of rated frequencies.

5.3 Performance under normal and abnormal load conditions

5.3.1 Making and breaking capacities under normal conditions

An auxiliary contact shall comply with the requirements given in table 4 corresponding to the assigned utilization category under normal conditions.

NOTE – For an auxiliary contact to which a utilization category is assigned, it is not necessary to specify separately a making and breaking capacity.

5.3.2 Making and breaking capacities under abnormal conditions

An auxiliary contact shall comply with the requirements given in table 5 corresponding to the assigned utilization category under abnormal conditions.

NOTE – Abnormal conditions may be due, for example, to a blocked open electromagnet or a blocked motor.