Electromechanical switches for use in electronic equipment -- Part 1: Generic specification

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 61020-1:2009 sisaldab Euroopa standardi EN 61020-1:2009 ingliskeelset teksti.	This Estonian standard EVS-EN 61020-1:2009 consists of the English text of the European standard EN 61020-1:2009.
Standard on kinnitatud Eesti Standardikeskuse 30.10.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 30.10.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 18.09.2009.	Date of Availability of the European standard text 18.09.2009.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

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Electromechanical switches for use in electrical and electronic equipment - Part 1: Generic specification

(IEC 61020-1:2009)

Interrupteurs électromécaniques pour équipements électriques et électroniques - Partie 1: Spécification générique (CEI 61020-1:2009)

Elektrisch-mechanische Schalter zur Verwendung in Geräten der Elektrotechnik und Elektronik - Teil 1: Fachgrundspezifikation (IEC 61020-1:2009)

This European Standard was approved by CENELEC on 2009-08-01. 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, Bulgaria, 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
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Foreword

The text of document 23J/325/FDIS, future edition 2 of IEC 61020-1, prepared by SC 23J, Switches for appliances, of IEC TC 23, Electrical accessories, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61020-1 on 2009-08-01.

This European Standard supersedes EN 196000:1992 + A1:2001, EN 196103:1998 and EN 196500:1993 + A1:2001.

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)	2010-05-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-08-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61020-1:2009 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60062	NOTE	Harmonized as EN 60062:2005 (not modified).
IEC 60065 + A1	NOTE	Harmonized as EN 60065:2002 (modified) + A1:2006 (modified).
IEC 60068-2-27	NOTE	Harmonized as EN 60068-2-27:2009 (not modified).
IEC 60068-2-38	NOTE	Harmonized as EN 60068-2-38:2009 (not modified).
IEC 60068-2-44	NOTE	Harmonized as EN 60068-2-44:1995 (not modified).
IEC 60068-2-46	NOTE	Harmonized as HD 323.2.46 S1:1988 (not modified).
IEC 60068-2-77	NOTE	Harmonized as EN 60068-2-77:1999 (not modified).
IEC 60512	NOTE	Harmonized in EN 60512 series (not modified).
IEC 60664-1	NOTE	Harmonized as EN 60664-1:2007 (not modified).
IEC 60695-11-10 + A1	NOTE	Harmonized as EN 60695-11-10:1999 + A1:2003 (not modified).
IEC 60721-3-3 (+ A1) + A2	NOTE	Harmonized as EN 60721-3-3:1995 + A2:1997 (not modified).
IEC 61190-1-3	NOTE	Harmonized as EN 61190-1-3:2007 (not modified).
ISO/IEC 17050-1	NOTE	Harmonized as EN ISO/IEC 17050-1:2004 (not modified).
ISO/IEC 17050-2	NOTE	Harmonized as EN ISO/IEC 17050-2:2004 (not modified).
ISO 286-1	NOTE	Harmonized as EN 20286-1:1993 (not modified).
ISO 1101	NOTE	Harmonized as EN ISO 1101:2005 (not modified).
ISO 9001	NOTE	Harmonized as EN ISO 9001:2008 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 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 60027	Series	Letter symbols to be used in electrical technology	EN 60027	Series
IEC 60050-581	2008	International Electrotechnical Vocabulary - Part 581: Electromechanical components for electronic equipment	-	-
IEC 60068-1 A1	1988 1992	Environmental testing - Part 1: General and guidance	EN 60068-1[1)]	1994
IEC 60068-2-1	2007	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	2007
IEC 60068-2-2	2007	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	2007
IEC 60068-2-6	2007	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	2008
IEC 60068-2-10	2005	Environmental testing - Part 2-10: Tests - Test J and guidance: Mould growth	EN 60068-2-10	2005
IEC 60068-2-13	1983	Environmental testing - Part 2: Tests - Test M: Low air pressure	EN 60068-2-13	1999
IEC 60068-2-14	2009	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	2009
IEC 60068-2-17	1994	Environmental testing - Part 2: Tests - Test Q: Sealing	EN 60068-2-17	1994
IEC 60068-2-20	2008	Environmental testing - Part 2-20: Tests - Test T: Test methods for solderability and resistance to soldering heat of devices with leads	EN 60068-2-20	2008
IEC 60068-2-21	2006	Environmental testing - Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices	EN 60068-2-21	2006
IEC 60068-2-30	2005	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	2005
IEC 60068-2-42	2003	Environmental testing - Part 2-42: Tests - Test Kc: Sulphur dioxide test for contacts and connections	EN 60068-2-42	2003

[1)] EN 60068-1 includes corr. October 1988 and A1:1992 to IEC 60068-1.

Publication	Year	Title	EN/HD	Year
IEC 60068-2-43	2003	Environmental testing - Part 2-43: Tests - Test Kd: Hydrogen sulphide test for contacts and connections	EN 60068-2-43	2003
IEC 60068-2-45 A1	1980 1993	Environmental testing - Part 2: Tests - Test Xa and guidance: Immersion in cleaning solvents	EN 60068-2-45 A1	1992 1993
IEC 60068-2-49	1983	Environmental testing - Part 2: Tests - Guidance to Test Kc: Sulphur dioxide test for contacts and connections	-	-
IEC 60068-2-58	1999	Environmental testing - Part 2-58: Tests - Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)	EN 60068-2-58	1999[2)]
IEC 60068-2-61	1991	Environmental testing - Part 2: Test methods - Test Z/ABDM: Climatic sequence	EN 60068-2-61	1993
IEC 60068-2-68	1994	Environmental testing - Part 2: Tests - Test L: Dust and sand	EN 60068-2-68	1996
IEC 60068-2-78	2001	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	2001
IEC 60529 A1	1989 1999	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May A1	1991 1993 2000
IEC 60617	data-base	Graphical symbols for diagrams	-	-
IEC 61058-1 (mod) + A1 A2	2000 2001 2007	Switches for appliances - Part 1: General requirements	EN 61058-1 A2	2002 2008
ISO 1000	1992	SI units and recommendations for the use of their multiples and of certain other units	-	-

[2)] EN 60068-2-58 is superseded by EN 60068-2-58:2004, which is based on IEC 60068-2-58:2004.

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INTRODUCTION

This generic specification covers the general requirements and test methods for electromechanical switches with optional quality assurance procedures. It provides the general requirements and test methods for use in any detail specifications for pushbutton switches, rotary switches, sensitive switches, toggle switches, and other electromechanical switches. It also provides guidelines for appropriate quality assurance procedures in Annex A (informative).

Where it is intended that an electromechanical switch comply with requirements related to safety, the specific safety requirements are specified in IEC 61058-1.

ELECTROMECHANICAL SWITCHES FOR USE IN ELECTRICAL AND ELECTRONIC EQUIPMENT –

Part 1: Generic specification

1 Scope and object

1.1 Scope

This generic specification relates to electromechanical switches intended for use in electrical and electronic appliances. Switches covered by this specification:

a) are devices which open, close, or change the connection of a circuit by the mechanical motion of conducting parts (contacts);

b) have a maximum rated voltage of 480 V;

c) have a maximum rated current of 63 A.

This generic specification does not include keyboards and keypads which are intended for use in information-handling systems. Electromechanical key switches may be included under the scope of this generic specification.

Switch families shall be described in any detail specifications that will reference this generic specification.

1.2 Object

The object of this generic specification is to provide consistency in detail specifications for electromechanical switches by specifying the terminology, symbols, test methods and other necessary information.

2 General

2.1 Normative references

The following referenced documents are indispensable for the application 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 60027 (all parts), *Letter symbols to be used in electrical technology*

IEC 60050-581:2008, *International Electrotechnical Vocabulary – Part 581: Electromechanical components for electronic equipment*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*
Amendment 1 (1992)

IEC 60068-2-6:2007, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-1:2007, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-2:2007, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

IEC 60068-2-10:2005, *Environmental testing – Part 2-10: Tests – Test J and guidance: Mould growth*

IEC 60068-2-13:1983, *Environmental testing – Part 2-13: Tests – Test M: Low air pressure*

IEC 60068-2-14:2009, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-17:1994, *Environmental testing – Part 2-17: Tests – Test Q: Sealing*

IEC 60068-2-20:2008, *Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads*

IEC 60068-2-21:2006, *Environmental testing – Part 2-21: Tests – Test U: Robustness of terminations and integral mounting devices*

IEC 60068-2-30:2005, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12+12-hour cycle)*

IEC 60068-2-42:2003, *Environmental testing – Part 2-42: Tests – Test Kc: Sulphur dioxide test for contacts and connections*

IEC 60068-2-43:2003, *Environmental testing – Part 2-43: Tests – Test Kd: Hydrogen sulphide test for contacts and connections*

IEC 60068-2-45:1980, *Environmental testing – Part 2-45: Tests – Test XA and guidance: Immersion in cleaning solvents*
Amendment 1 (1993)

IEC 60068-2-49:1983, *Environmental testing – Part 2-49: Tests – Guidance to Test Kc: Sulphur dioxide test for contacts and connections*

IEC 60068-2-58:1999, *Environmental testing Part 2-58: Tests – Tests Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)*

IEC 60068-2-61:1991, *Environmental testing – Part 2-61: Test methods – Test Z/ABDM: Climatic sequence*

IEC 60068-2-68:1994, *Environmental testing – Part 2-68: Tests – Test L: Dust and sand*

IEC 60068-2-78:2001, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
Amendment 1 (2001)

IEC 60617, *Graphical symbols for diagrams*

IEC 61058-1:2000, *Switches for appliances – Part 1: General requirements*
Amendment 1 (2001)
Amendment 2 (2007)

ISO 1000:1992, *SI units and recommendation for the use of their multiples and of certain other units*