SVENSK STANDARD

SS-EN IEC 60309-1, utg 4:2022

Fastställd	Sida	Ansvarig kommitté
2022-09-21	1 (1+93)	SEK TK 23

Industriuttagsdon – Stickproppar, vägguttag och apparatanslutningsdon för industribruk – Del 1: Allmänna fordringar

Plugs, fixed or portable socket-outlets and appliance inlets for industrial purposes – Part 1: General requirements

Som svensk standard gäller europastandarden EN IEC 60309-1:2022. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60309-1:2022.

Nationellt förord

Europastandarden EN IEC 60309-1:2022

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 60309-1, Fifth edition, 2021 - Plugs, fixed or portable socket-outlets and appliance inlets for industrial purposes - Part 1: General requirements**

utarbetad inom International Electrotechnical Commission, IEC.

SS-EN 60309-1, utgåva 3:1999 med ändringarna SS-EN 60309-1, utg 3:1999/A1:2007, SS-EN 60309-1, utg 3:1999/A1:2007/AC1:2016 och SS-EN 60309-1, utg 3:1999/A2:2012, gäller ej fr o m 2025-06-17.

ICS 29.120.30

Denna standard är fastställd av SEK Svensk Elstandard,
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Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

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Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 60309-1

June 2022

ICS 29.120.30

Supersedes EN 60309-1:1999 + A1:2007 + A2:2012 + A1:2007/AC:2014

English Version

Plugs, fixed or portable socket-outlets and appliance inlets for industrial purposes - Part 1: General requirements (IEC 60309-1:2021)

Fiches, socles fixes de prise de courant, prises mobiles et socles de connecteur pour usages industriels - Partie 1: Exigences générales (IEC 60309-1:2021)

Stecker, ortsfeste oder ortsveränderliche Steckdosen und Gerätestecker für industrielle Anwendungen - Teil 1: Allgemeine Anforderungen (IEC 60309-1:2021)

This European Standard was approved by CENELEC on 2021-09-08. 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 CEN-CENELEC Management Centre 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 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.

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

Ref. No. EN IEC 60309-1:2022 E

European foreword

The text of document 23H/480/FDIS, future edition 5 of IEC 60309-1, prepared by SC 23H "Plugs, Socket-outlets and Couplers for industrial and similar applications, and for Electric Vehicles" of IEC/TC 23 "Electrical accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60309-1:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2022-12-17
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025-06-17

This document supersedes EN 60309-1:1999 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 60309-1:2021 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 60352-7	NOTE	Harmonized as EN IEC 60352-7
IEC 60998-2-2	NOTE	Harmonized as EN 60998-2-2

Annex ZA
(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.

Publication	Year	Title	EN/HD	Year
IEC 60068-2-14	-	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC/TR 60083	-	Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC	-	-
IEC 60112	-	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN IEC 60112	-
IEC 60227	series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	-	-
IEC 60228	2004	Conductors of insulated cables	EN 60228	2005
-	-		+ corrigendum May	2005
IEC 60245-4	2011	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 4: Cords and flexible cables	-	-
IEC 60269-1	-	Low-voltage fuses - Part 1: General requirements	EN 60269-1	-
IEC 60269-2	-	Low-voltage fuses - Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) - Examples of standardized systems of fuses A to K	HD 60269-2	-
IEC 60309-4	2021	Plugs, fixed or portable socket-outlets and appliance inlets for industrial purposes - Part 4: Switched socket-outlets with or without interlock	EN IEC 60309-4	2021
IEC 60320	series	Appliance couplers for household and similar general purposes	-	-

Publication	Year	Title	EN/HD	Year
IEC 60417	-	Graphical symbols for use on equipment. Index, survey and compilation of the single sheets.	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
-	-		+ corrigendum May	1993
+ A1	1999		+ A1	2000
+ A2	2013		+ A2	2013
IEC 60664-1	2020	Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests	EN IEC 60664-1	2020
IEC 60664-3	-	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	-
IEC 60695-2-11	-	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end products (GWEPT)	EN IEC 60695-2-11	-
IEC 60695-10-2	-	Fire hazard testing - Part 10-2: Abnormal heat - Ball pressure test method	EN 60695-10-2	-
IEC 61000-6-2	-	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments	EN IEC 61000-6-2	-
IEC 61000-6-3	-	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for equipment in residential environments	EN IEC 61000-6-3	-
IEC 61032	-	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	-
ISO 1456	-	Metallic and other inorganic coatings - Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium	EN ISO 1456	-
ISO 2081	-	Metallic and other inorganic coatings - Electroplated coatings of zinc with supplementary treatments on iron or steel	EN ISO 2081	-
ISO 2093	-	Electroplated coatings of tin; Specification and test methods	-	-

IEC 60309-1

Edition 5.0 2021-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Plugs, fixed or portable socket-outlets and appliance inlets for industrial purposes – Part 1: General requirements

Fiches, socles fixes de prise de courant, prises mobiles et socles de connecteur pour usages industriels – Partie 1: Exigences générales

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PLUGS, FIXED OR PORTABLE SOCKET-OUTLETS AND APPLIANCE INLETS FOR INDUSTRIAL PURPOSES –

Part 1: General requirements

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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International Standard IEC 60309-1 has been prepared by subcommittee SC 23H: Plugs, socket-outlets and couplers for industrial and similar applications, and for electric vehicles, of IEC technical committee 23: Electrical accessories.

This fifth edition cancels and replaces the fourth edition published in 1999, Amendment 1:2005 and Amendment 2:2012. This edition constitutes a technical revision.

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

a) addition of classification, requirements and tests for accessories with shutters;
b) additional marking to indicate neutral terminal and/or earthing terminal;
c) replacement of the term "connector" by the term "portable socket-outlet".

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

FDIS	Report on voting
23H/480/FDIS	23H/486/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

In this document, the following print types are used:

– requirements proper: in roman type;
– *test specifications: in italic type*;
– notes: in smaller roman type.

Subsequent parts of IEC 60309 deal with the requirements of particular types of accessories. The clauses of these particular requirements supplement or modify the corresponding clauses in this document.

A list of all parts in the IEC 60309 series, published under the general title *Plugs, fixed or portable socket-outlets and appliance inlets for industrial purposes*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under 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.

PLUGS, FIXED OR PORTABLE SOCKET-OUTLETS AND APPLIANCE INLETS FOR INDUSTRIAL PURPOSES –

Part 1: General requirements

1 Scope

This document applies to plugs, fixed or portable socket-outlets and appliance inlets hereinafter referred to as accessories, with a rated operating voltage not exceeding 1 000 V DC or 1 000 V AC with a frequency not exceeding 500 Hz and a rated current not exceeding 800 A, primarily intended for industrial use, either indoors or outdoors.

These accessories are intended to be installed by instructed persons or skilled persons only.

The list of preferred ratings is not intended to exclude other ratings.

This document applies to accessories for use when the ambient temperature is normally within the range of −25 °C to +40 °C.

These accessories are intended to be connected to cables of copper or copper alloy only.

This document applies to accessories with screwless-type terminals or insulation piercing terminals, with a rated current up to and including 32 A for series I and 30 A for series II.

The use of these accessories on building sites and for agricultural, commercial and domestic applications is not precluded.

Fixed socket-outlets or appliance inlets incorporated in or fixed to electrical equipment are within the scope of this document. This document also applies to accessories intended to be used in extra-low voltage installations.

This document does not apply to accessories primarily intended for domestic and similar general purposes.

This document does not cover single-pole accessories.

In locations where special conditions prevail, for example on board ship or where explosions are liable to occur, additional requirements can be necessary.

2 Normative references

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

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

IEC TR 60083, *Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC*

IEC 60112, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60227 (all parts), *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*

IEC 60228:2004, *Conductors of insulated cables*

IEC 60245-4:2011, *Rubber insulated cables – Rated voltages up to and including 450/750 V – Part 4: Cords and flexible cables*

IEC 60269-1, *Low-voltage fuses – Part 1: General requirements*

IEC 60269-2, *Low-voltage fuses – Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) – Examples of standardized systems of fuses A to K*

IEC 60309-4:2021, *Plugs, fixed or portable socket-outlets and appliance inlets for industrial purposes – Part 4: Switched socket-outlets with or without interlock*

IEC 60320 (all parts), *Appliance couplers for household and similar general purposes*

IEC 60417, *Graphical symbols for use on equipment* (available at http://www.graphical-symbols.info/equipment)

IEC 60529:1989, *Degrees of protection provided by enclosures (IP code)*
IEC 60529:1989/AMD1:1999
IEC 60529:1989/AMD2:2013

IEC 60664-1:2020, *Insulation coordination for equipment within low-voltage supply systems – Part 1: Principles, requirements and tests*

IEC 60664-3, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 60695-2-11, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)*

IEC 60695-10-2, *Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test method*

IEC 61000-6-2, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity standard for industrial environments*

IEC 61000-6-3, *Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for equipment in residential environments*

IEC 61032, *Protection of persons and equipment by enclosures – Probes for verification*

ISO 1456, *Metallic and other inorganic coatings – Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium*

ISO 2081, *Metallic and other inorganic coatings – Electroplated coatings of zinc with supplementary treatments on iron or steel*

ISO 2093, *Electroplated coatings of tin – Specification and test methods*