SVENSK STANDARD SS-EN IEC 60309-5

| Fastställd | Utgåva | Sida | Ansvarig kommitté |
|---|---|---|---|
| 2020-02-19 | 1 | 1 (1+18) | SEK TK 23 |




# Industriuttagsdon – Stickproppar, vägguttag och apparatanslutningsdon för industribruk – Del 5: Fordringar på dimensionell oförväxelbarhet för anslutningsdon för landanslutning av fartyg

*Plugs, socket-outlets and couplers for industrial purposes –*
*Part 5: Dimensional compatibility and interchangeability requirements for plugs, socket-outlets, ship connectors and ship inlets for low-voltage shore connection systems (LVSC)*

Som svensk standard gäller europastandarden EN IEC 60309-5:2019. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60309-5:2019.

**Nationellt förord**

Europastandarden EN IEC 60309-5:2019

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 60309-5, First edition, 2017 - Plugs, socket-outlets and couplers for industrial purposes - Part 5: Dimensional compatibility and interchangeability requirements for plugs, socket-outlets, ship connectors and ship inlets for low-voltage shore connection systems (LVSC)**

utarbetad inom International Electrotechnical Commission, IEC.

Standarden ska användas tillsammans med SS-EN 60309-1.

ICS 29.120.30

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Telefon: 08 - 444 14 00.
E-post: sek@elstandard.se. Internet: www.elstandard.se

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SEK Svensk Elstandard
Box 1284
164 29 Kista
Tel 08-444 14 00
www.elstandard.se

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN IEC 60309-5

December 2019

ICS 29.120.30

English Version

# Plugs, socket-outlets and couplers for industrial purposes - Part 5: Dimensional compatibility and interchangeability requirements for plugs, socket-outlets, ship connectors and ship inlets for low-voltage shore connection systems (LVSC) (IEC 60309-5:2017)

Prises de courant pour usages industriels - Partie 5: Exigences dimensionnelles de compatibilité et d'interchangeabilité pour les prises de courant et connecteurs de navire pour les systèmes basse tension de raccordement des navires à quai (IEC 60309-5:2017)

Stecker, Steckdosen und Kupplungen für industrielle Anwendungen - Teil 5: Anforderungen und Hauptmaße für die Austauschbarkeit von Steckern, Steckdosen, Schiffskupplungen und Schiffssteckern für Niederspannungs-Landanschlusssysteme (LVSC) (IEC 60309-5:2017)

This European Standard was approved by CENELEC on 2019-11-13. 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 60309-5:2019 E

## European foreword

The text of document 23H/368/FDIS, future edition 1 of IEC 60309-5, 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 60309-5:2019.

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) | 2020-06-20 |
| • latest date by which the national standards conflicting with the document have to be withdrawn | (dow) | 2022-12-20 |

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 mandate given to CENELEC by the European Commission and the European Free Trade Association.

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## Endorsement notice

The text of the International Standard IEC 60309-5:2017 was approved by CENELEC as a European Standard without any modification.

# 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.

***Annexes ZA of EN 60309-1:1999, EN 60309-1:1999/A1:2007, EN 60309-1:1999/A2:2012 and Clause 2 of IEC/IEEE 80005-3:— apply with the following additions:***

| Publication | Year | Title | EN/HD | Year |
|---|---|---|---|---|
| ISO 9227 | 2012 | Corrosion tests in artificial atmospheres - Salt spray tests | - | - |
| ISO 15510 | 2014 | Stainless steels - Chemical composition | - | - |
| IEC/IEEE 80005-3 | - | Utility connections in port - Part 3: Low Voltage Shore Connection (LVSC) Systems - General requirements | - | - |

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# PLUGS, SOCKET-OUTLETS AND COUPLERS FOR INDUSTRIAL PURPOSES –

## Part 5: Dimensional compatibility and interchangeability requirements for plugs, socket-outlets, ship connectors and ship inlets for low-voltage shore connection systems (LVSC)

## 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 60309-5 has been prepared by subcommittee 23H: Plugs, socket-outlets and couplers for industrial and similar applications, and for electric vehicles, of IEC technical committee 23: Electrical accessories.

The text of this standard is based on the following documents:

| FDIS | Report on voting |
|---|---|
| 23H/368/FDIS | 23H/371/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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

This part of IEC 60309 is to be read in conjunction with IEC 60309-1. The clauses of the particular requirements of this document supplement or modify the corresponding clauses of IEC 60309-1. Where the text indicates an "addition" to or a "replacement" of the relevant requirement, test specification or explanation of IEC 60309-1, these changes are made to the relevant text of IEC 60309-1, which then becomes part of the standard. Where no change is necessary, the words "Clause X of IEC 60309-1:1999 + A1:2005 + A2:2012 applies" are used.

Subclauses, figures, tables or notes which are additional to those in IEC 60309-1 are numbered starting from 501.

In this standard, the following print types are used:

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

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

# INTRODUCTION

International Standard IEC 60309-5 has been written to address the needs in terms of plugs, socket-outlets and ship couplers (ship connectors and ship inlets), herein referred to as “accessories”, of IEC/IEEE 80005-3[1]. The purpose of IEC/IEEE 80005-3 is to define requirements that allow compliant ships to connect to compliant low-voltage shore power supplies through standardized shore-to-ship connection accessories.

Ships that do not require connecting with standardized low-voltage shore power supplies as above may use accessories that are not covered by the standard sheets of IEC 60309-5 but they may find it impossible to connect to these shore supplies.

Other low-voltage plugs, socket-outlets, ship connectors and ship inlets used for the connection of certain ship types to low-voltage shore power supplies may be found in the IEC 60309 series.

International Standard IEC 60309 is divided into several parts: IEC 60309-1 is entitled *General requirements,* and comprises clauses of a general nature. The subsequent parts address requirements dealing with particular devices.

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1 Under preparation. Stage at the time of publication: IEC/IEEE CDV 80005-3:2016.

# PLUGS, SOCKET-OUTLETS AND COUPLERS FOR INDUSTRIAL PURPOSES –

# Part 5: Dimensional compatibility and interchangeability requirements for plugs, socket-outlets, ship connectors and ship inlets for low-voltage shore connection systems (LVSC)

## 1 Scope

This part of 60309 applies to a single type of plug, socket-outlet, ship connector and ship inlet, hereinafter referred to as accessories, intended to connect ships to dedicated shore supply systems described in IEC/IEEE 80005-3.

This part of IEC 60309 applies to three-phase accessories with an earth contact and with four pilot contacts.

NOTE 1 In the following countries the term “ground” is used instead of “earth": US.

These accessories have a maximum rated current of 350 A and a maximum rated operating voltage not exceeding 690 V 50/60 Hz.

NOTE 2 The various operating currents, voltages and frequencies required for various types of ship are set by the shore supply system described in IEC/IEEE 80005-3.

These accessories are intended to be installed and operated by instructed persons (IEC 60050-195:1998, Amendment 1:2001, 195-04-02) or skilled persons (IEC 60050-195:1998, Amendment 1:2001, 195-04-01) only.

This standard applies to accessories for primary use outdoors in a seawater environment when the ambient temperature is normally within the range of −25 °C to +40 °C.

NOTE 3 In some countries, other ambient temperatures may prevail and may need to be taken into account.

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

Socket-outlets or ship inlets incorporated in or fixed to electrical equipment which is part of the shore connection system are within the scope of this standard.

In locations where special conditions prevail, for example where explosions are liable to occur, additional requirements may 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.

Clause 2 of IEC/IEEE 80005-3:— and Clause 3 of IEC 60309-1:1999 + A1:2005 + A2:2012 apply with the following additions:

ISO 9227:2012, *Corrosion tests in artificial atmospheres – Salt spray tests*

ISO 15510:2014 *Stainless steels – Chemical composition*

IEC/IEEE 80005-3:—, *Utility connections in port – Part 3: Low Voltage Shore Connections (LVSC) Systems – General requirements*