Irish Standard
I.S. EN 60309-4:2007

Plugs, socket-outlets and couplers for industrial purposes -- Part 4: Switched socket-outlets and connectors with or without interlock (IEC 60309-4:2006 (MOD))

I.S. EN 60309-4:2007

Incorporating amendments/corrigenda issued since publication:
EN 60309-4:2007/A1:2012

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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I.S. EN 60309-4:2007

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60309-4/A1

April 2012

ICS 29.120.30

English version

Plugs, socket-outlets and couplers for industrial purposes - Part 4: Switched socket-outlets and connectors with or without interlock

(IEC 60309-4:2006/A1:2012)

Prises de courant pour usages industriels - Partie 4: Prises de courant et prises mobiles avec interrupteur, avec ou sans dispositif de verrouillage (CEI 60309-4:2006/A1:2012)

Stecker, Steckdosen und Kupplungen für industrielle Anwendungen - Teil 4: Abschaltbare Steckdosen und Kupplungen mit oder ohne Verriegelung (IEC 60309-4:2006/A1:2012)

This amendment A1 modifies the European Standard EN 60309-4:2007; it was approved by CENELEC on 2012-04-19. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 60309-4:2007/A1:2012 E

Foreword

The text of document 23H/276/FDIS, future edition 1 of IEC 60309-4:2006/A1, prepared by SC 23H, "Industrial plugs and socket-outlets", of IEC TC 23, "Electrical accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60309-4:2007/A1:2012.

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)	2013-01-19
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-04-19

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

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

Endorsement notice

The text of the International Standard IEC 60309-4:2006/A1:2012 was approved by CENELEC as a European Standard without any modification.

I.S. EN 60309-4:2007

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60309-4

May 2007

ICS 29.120.30

English version

Plugs, socket-outlets and couplers for industrial purposes - Part 4: Switched socket-outlets and connectors with or without interlock

(IEC 60309-4:2006, modified)

Prises de courant
pour usages industriels -
Partie 4: Prises de courant
et prises mobiles avec interrupteur,
avec ou sans dispositif de verrouillage
(CEI 60309-4:2006, modifiée)

Stecker, Steckdosen und Kupplungen
für industrielle Anwendungen -
Teil 4: Abschaltbare Steckdosen
und Kupplungen
mit oder ohne Verriegelung
(IEC 60309-4:2006, modifiziert)

This European Standard was approved by CENELEC on 2007-03-01. 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
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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

Ref. No. EN 60309-4:2007 E

Foreword

The text of document 23H/189/FDIS, future edition 1 of IEC 60309-4, prepared by SC 23H, Industrial plugs and socket-outlets, of IEC TC 23, Electrical accessories, was submitted to the IEC-CENELEC parallel vote.

A draft amendment, containing some common modifications to the future IEC 60309-4, was prepared by CENELEC BTWG 112-1, Improvement of EN 60309-1 and EN 60309-2, and was submitted to formal vote.

The combined texts were approved by CENELEC as EN 60309-4 on 2007-03-01.

This standard is to be read in conjunction with EN 60309-1:1999 + A1:2007 and EN 60309-2:1999 + A1:2007.

Part 1 comprises clauses of a general character and the subsequent parts of the series deal with particular types.

The clauses of the subsequent parts supplement or modify the corresponding clauses in Part 1. Where the text of subsequent parts indicates an "addition" to or a "replacement" of the relevant requirement, test specification or explanation of Part 1, these changes are made to the relevant text of Part 1, which then becomes part of the standard. Where no change is necessary, the words "This clause of Part 1 is applicable" are used.

Clauses, subclauses, figures, tables and notes which are additional to those in Part 1 are numbered starting from 101.

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)	2008-03-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2010-03-01

Annexes ZA and ZB have been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60309-4:2006 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

1 Scope

Add the following:

EN 60309-1 and EN 60309-2 contain common modifications regarding the use in Europe of AWG and MCM cables, voltages and Series II products.

Those common modifications apply also within the scope of the present European Standard as indicated in the relevant Part 1 or Part 2.

See Annex ZB for a list of additional references to AWG/MCM cables, non-European voltages and Series II products which are excluded from this standard.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

Addition to Annex ZA of EN 60309-1 & EN 60309-2:

Publication	Year	Title	EN/HD	Year
IEC 60073	–[1)]	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators	EN 60073	2002[2)]
IEC 60417	Data-base	Graphical symbols for use on equipment	–	–
IEC 60617	Data-base	Graphical symbols for diagrams	–	–
IEC 60947-1	2004	Low-voltage switchgear and controlgear - Part 1: General rules	EN 60947-1 + corr. November	2004 2004
IEC 60947-4-1	–[1)]	Low-voltage switchgear and controlgear - Part 4-1: Contactors and motor-starters - Electromechanical contactors and motor-starters	EN 60947-4-1	2001[2)]
IEC 60947-5-1	2003	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices	EN 60947-5-1 + corr. July	2004 2005
IEC 61032	–[1)]	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998[2)]
IEC 61058-1 (mod)	–[1)]	Switches for appliances - Part 1: General requirements	EN 61058-1	2002[2)]

[1)] Undated reference.

[2)] Valid edition at date of issue.

Annex ZB
(normative)

References to AWG/MCM cables, non-European voltages and/or Series II which are excluded from this standard

The list below includes references to AWG/MCM cables, non-European voltages and/or Series II which are excluded from this standard according to the specific rules given in Annex ZB of EN 60309-1:1999/A1:2007 or Annex ZC of EN 60309-2:1999/A1:2007 respectively.

EN 60309-4
12.1.2, Table 101
Clause 22, Table 8

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PLUGS, SOCKET-OUTLETS AND COUPLERS FOR INDUSTRIAL PURPOSES –

Part 4: Switched socket-outlets and connectors with or without interlock

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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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This consolidated version of IEC 60309-4 consists of the first edition (2006) [documents 23H/189/FDIS and 23H/192/RVD] and its amendment 1 (2012) [documents 23H/276/FDIS and 23H/281/RVD]. It bears the edition number 1.1.

The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience. A vertical line in the margin shows where the base publication has been modified by amendment 1. Additions and deletions are displayed in red, with deletions being struck through.

International Standard IEC 60309-4 has been prepared by subcommittee 23H: Plugs and socket-outlets for industrial purposes, of IEC technical committee 23: Electrical accessories.

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

This standard is to be read in conjunction with IEC 60309-1 (1999) and IEC 60309-2 (1999).

Part 1 comprises clauses of a general character and the subsequent parts of the series deal with particular types.

The clauses of the subsequent parts supplement or modify the corresponding clauses in Part 1. Where the text of subsequent parts indicates an "addition" to or a "replacement" of the relevant requirement, test specification or explanation of Part 1, these changes are made to the relevant text of Part 1, which then becomes part of the standard. Where no change is necessary, the words "This clause of Part 1 is applicable" are used.

Clauses, subclauses, figures, tables and notes which are additional to those in Part 1 are numbered starting from 101.

The IEC 60309 series, under the general title *Plugs, socket-outlets and couplers for industrial purposes* comprises the following parts:

Part 1: General requirements

Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories

Part 4: Switched socket-outlets and connectors with or without interlock

The committee has decided that the contents of the base publication and its amendments 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.

IMPORTANT – The “colour inside” logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.

PLUGS, SOCKET-OUTLETS AND COUPLERS FOR INDUSTRIAL PURPOSES –

Part 4: Switched socket-outlets and connectors with or without interlock

1 Scope

This clause of Part 1 or Part 2 is applicable except as follows:

Replacement of the first paragraph by the following text:

This part of IEC 60309 applies to self-contained products that combine within a single enclosure, a socket-outlet or connector according to IEC 60309-1 or IEC 60309-2 and a switching device, with a rated operating voltage not exceeding ~~690~~ 1 000 V d.c. or a.c. and 500 Hz , and a rated current not exceeding ~~250~~ 800 A, primarily intended for industrial use, either indoors or outdoors.

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

These products may incorporate an interlock and/or protective devices.

2 Definitions

This clause of Part 1 or Part 2 is applicable, except as follows:

Deletion of definitions 2.6 to 2.9.

Addition:

2.101
switched socket-outlet or connector
accessory containing in a single enclosure a switching device and a socket-outlet or connector, intended to be used in combination. It can be either interlocked or non-interlocked

2.102
interlocked socket-outlet or connector
socket-outlet or connector associated with an interlock

2.103
switching device
device designated to make or break the current in one or more electric circuits

[IEV 441-14-01]

2.103.1
mechanical switching device
switching device designed to close and open one or more electric circuits by means of separable contacts

[IEV 441-14-02]

2.103.1.1
switch (mechanical)
mechanical switching device capable of making, carrying and breaking currents under normal circuit conditions, which may include specified operating overload conditions and also carrying, for a specified time, currents under specified abnormal circuit conditions such as those of short-circuit

[IEV 441-14-10]

NOTE A switch may be capable of making, but not breaking short-circuit currents.

2.103.1.1.1
switch-disconnector
switch, which in the open position complies with the requirements specified for the isolating function

[IEV 441-14-12, modified]

NOTE This definition differs from IEV 441-14-05 by referring to isolating function instead of the requirements specified for a disconnector.

2.103.1.2
contactor
mechanical switching device having only one position of rest, operated otherwise than by hand, capable of making, carrying and breaking currents under normal circuit conditions, including operating overload conditions

[IEV 441-14-33]

2.103.2
associated switching device
separate switching device which can be replaced independently

2.103.3
integral switching device
switching device constructed as a part of a socket-outlet or connector covered by this standard, where neither the switching device nor the socket-outlet or connector can be replaced independently

2.104
isolation (isolating function)
function intended to cut off the supply from all or a discrete section of the installation, by separating the installation or section from every source of electrical energy for reasons of safety (see IEC 60947-1 and IEC 61140[1])

2.105
utilization category
⟨switching device⟩ combination of specified requirements related to the conditions in which the switching device fulfils its purpose, selected to represent a characteristic group of practical applications

[IEV 441-17-19, modified]

NOTE The specified requirements may concern e.g. the values of making capacities (if applicable), breaking capacities and other characteristics, the associated circuits under the relevant conditions of use and behaviour.

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1 IEC 61140, *Protection against electric chock – Common aspects for installation and equipment*

2.106
interlock or interlocking device
device, either electrical or electronic or mechanical or a combination of these, which makes the operation of a piece of product dependent upon the condition, position or operation of one or more other pieces of product

2.107
control circuit device
electrical device intended for the controlling, signaling, interlocking, etc. of switchgear and controlgear (see IEC 60947-1, 2.1.1)

2.108
pilot contact
auxiliary electric contact for use in a control or monitoring or interlock function

NOTE Pilot contact is not considered to be a pole.

2.109
latching device
part of the interlock mechanism provided to hold a plug or appliance-inlet in the socket-outlet or connector

3 Normative references

This clause of Part 1 or Part 2 is applicable, except as follows:

Addition:

IEC 60073, *Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators*

IEC 60417-DB:2002[2], *Graphical symbols for use on equipment*

IEC 60617-DB:2001[3], *Graphical Symbols for diagrams*

IEC 60947-1:2004, *Low-voltage switchgear and controlgear – Part 1: General rules*

IEC 60947-4-1, *Low-voltage switchgear and controlgear – Part 4-1: Contactors and motor-starters – Electromechanical contactors and motor-starters*

IEC 60947-5-1:2003, *Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices*

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

IEC 61058-1, *Switches for appliances – Part 1: General requirements*

4 General

This clause of Part 1 or Part 2 is applicable except as follows:

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[2] "DB" refers to the IEC on-line database.

[3] "DB" refers to the IEC on-line database.