

Safety of machinery – Electrical equipment of machines Part 1: General requirements

(IEC 60204-1:2016, modified)

Sicherheit von Maschinen – Elektrische Ausrüstung von Maschinen –
Teil 1: Allgemeine Anforderungen
(IEC 60204-1:2016, modifiziert)

Sécurité des machines – Équipement électrique des machines –
Partie 1: Exigences générales
(IEC 60204-1:2016, modifiée)

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Supersedes see National Foreword

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National Foreword

This European Standard EN 60204-1:2018 has the status of an Austrian electrotechnical standard in accordance with the Austrian Electrical Engineering Act 1992.

The legal status of this Austrian electrotechnical standard is stated in the respective ordinance under the Electrical Engineering Act.

European Standards (EN) are implemented as Austrian electrotechnical standards according to the CENELEC Internal Regulations by publication of an identical text and by adding OVE to the EN number.

According to the foreword of the EN the latest date by which the national (electrotechnical) standards conflicting with the EN have to be withdrawn is 2021-09-14 (dow, date of withdrawal). Until this deadline the following standard may be applied:

ÖVE/ÖNORM EN 60204-1:2009-12-01,
ÖVE/ÖNORM EN 60204-1/AC:2011-04-01.

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English Version

Safety of machinery - Electrical equipment of machines -
Part 1: General requirements
(IEC 60204-1:2016 , modified)

Sécurité des machines - Équipement électrique des
machines - Partie 1: Exigences générales
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Sicherheit von Maschinen - Elektrische Ausrüstung von
Maschinen - Teil 1: Allgemeine Anforderungen
(IEC 60204-1:2016 , modifiziert)

This European Standard was approved by CENELEC on 2018-03-19. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, 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

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EN 60204-1:2018 (E)

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Contents	Page
European foreword.....	3
1 Modification to Clause 2, Normative references	4
2 Modifications to Clause 4	4
3 Modifications to Clause 6	4
4 Modifications to Clause 9	4
5 Modifications to Clause 11	5
6 Modifications to Clause 12	5
7 Modifications to Clause 13	5
8 Modifications to Clause 16	5
9 Modifications to Clause 18	6
10 Modification to annexes.....	6
Annex ZA (normative) Normative references to international publications with their corresponding European publications	7
Annex ZZA (informative) Relationship between this European Standard and the essential requirements of Directive 2006/42/EC [2006 OJ L 157] aimed to be covered	10
Annex ZZB (informative) Relationship between this European Standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered.....	12
11 Modification to Bibliography.....	14

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European foreword

This document (EN 60204-1:2018) consists of the text of IEC 60204-1:2016, prepared by IEC/TC 44 "Safety of machinery - Electrotechnical aspects", together with the common modifications prepared by CLC/TC 44X "Safety of machinery: electrotechnical aspects".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-03-14
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2021-09-14

This document supersedes EN 60204-1:2006.

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.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60204-1:2016 are prefixed "Z".

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directives, see informative Annexes ZZA and ZZB, which are integral parts of this document.

Endorsement notice

The text of the International Standard IEC 60204-1:2016 was approved by CENELEC as a European Standard with agreed common modifications.

EN 60204-1:2018 (E)

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COMMON MODIFICATIONS**1 Modification to Clause 2, Normative references**

Add the following note after the first paragraph:

NOTE In CENELEC, Annex ZA applies instead of Clause 2.

2 Modifications to Clause 4**4.4.2 Electromagnetic Compatibility**

Delete the 2nd paragraph and related bulleted list.

4.4.5 Altitude

Replace the text of the 2nd paragraph before the hyphenated list with:

"For equipment to be used at higher altitudes, it is necessary to take into account changes in parameters for example, the reduction of:".

Add the start of the 3rd paragraph:

"Other parameters of different components can also alter with altitude.".

3 Modifications to Clause 6**6.3.1 General**

Replace the text of Note 1 with:

"The risk of harmful physiological effects from touch voltages depends upon a number of factors. These include but are not limited to; value of touch voltage, duration of possible exposure, environmental factors, skin condition".

4 Modifications to Clause 9**9.2.3.2 Start**

Replace the 4th paragraph with:

"The provision of acoustic and/or visual warning signals before the starting of hazardous machine operation shall be considered during the risk assessment. Where the risk assessment determines that either or both are required the emission level of noise/light shall be suitable for the intended environment.".

9.2.4.1 General requirements

Replace the 2nd paragraph with:

"Where a safety function of a CCS relies on data transmission the transmission reliability shall be considered.".

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Replace the last paragraph with:

"Where the risk assessment show that resetting of an emergency stop actuator on the portable cableless operator control station is not adequate then one or more supplementary fixed resets shall be provided."

5 Modifications to Clause 11

11.4 Enclosures, doors and openings

In the 8th paragraph, replace "harmful" with "detrimental".

6 Modifications to Clause 12

12.3 Insulation

In the 1st paragraph, replace "should" with "shall".

7 Modifications to Clause 13

13.5.2 Rigid metal conduit fittings

First paragraph, 2nd sentence, replace with "Where galvanic action is possible between dissimilar metals these metal combinations shall not be used".

8 Modifications to Clause 16

16.1 General

Add to the first paragraph: "The markings shall be sufficiently durable to remain legible for the foreseen lifetime of the machine."

16.4 Marking of enclosures of electrical equipment

Delete the 2nd bullet.

EN 60204-1:2018 (E)

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9 Modifications to Clause 18

18.1 General

Add to paragraph 2: "Where the sequence cannot be followed verification a) and b) shall be conducted first."

18.4 Voltage tests

Replace the first paragraph with "When voltage tests are performed, tests and test equipment shall be in accordance with EN 61180."

10 Modification to annexes

Add the following annexes.

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(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 60034-1 (mod)	2010	Rotating electrical machines - Part 1: Rating and performance	EN 60034-1	2010
-	-		+ corr. October	2010
IEC 60072	series	Dimensions and output series for rotating electrical machines	-	-
IEC 60309-1	1999	Plugs, socket-outlets and couplers for industrial purposes -	EN 60309-1	1999
+ A1 (mod)	2005	Part 1: General requirements	+ A1	2007
+ A2	2012		+ A2	2012
IEC 60364-1 (mod)	2005	Low-voltage electrical installations - Part 1: Fundamental principles, assessment of general characteristics, definitions	HD 60364-1	2008
IEC 60364-4-41 (mod)	2005	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41	2007
-	-		+ corr. July	2007
IEC 60364-4-43 (mod)	2008	Low voltage electrical installations - Part 4-43: Protection for safety - Protection against overcurrent	HD 60364-4-43	2010
IEC 60364-5-52 (mod)	2009	Low-voltage electrical installations - Part 5-52: Selection and erection of electrical equipment - Wiring systems	HD 60364-5-52	2011
IEC 60364-5-53	2001	Electrical installations of buildings - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control	-	-
+ A1 (mod)	2002		HD 60364-5-534	2008 ¹⁾
+ A2 (mod)	2015		HD 60364-5-534	2016 ²⁾

1) IEC 60364-5-53:2001/A1:2002, Clause 534: "Devices for protection against overvoltages" is harmonized as HD 60364-5-534:2008. HD 60364-5-534:2008 will be superseded by HD 60364-5-534:2016 on 2018-12-14.

2) IEC 60364-5-53:2001/A2:2015, Clause 534: "Devices for protection against overvoltages" is harmonized as HD 60364-5-534:2016.

EN 60204-1:2018 (E)

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IEC 60364-5-54	2011	Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements and protective conductors	HD 60364-5-54	2011
IEC 60417-DB	2002	Graphical symbols for use on equipment	-	-
IEC 60445	2010	Basic and safety principles for man-machine interface, marking and identification - Identification of equipment terminals, conductor terminations and conductors	EN 60445	2010
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
-	-		+ corr. May	1993
+ A1	1999		+ A1	2000
+ A2	2013		+ A2	2013
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60947-2	2016	Low voltage switchgear and controlgear - Part 2: Circuit-breakers	EN 60947-2	2017
IEC 60947-3	2008	Low-voltage switchgear and controlgear -	EN 60947-3	2009
+ A1	2012	Part 3: Switches, disconnectors,	+ A1	2012
+ A2	2015	switch-disconnectors and fuse-combination units	+ A2	2015
IEC 60947-5-1	2003	Low-voltage switchgear and controlgear -	EN 60947-5-1	2004
-	-	Part 5-1: Control circuit devices and	+ corr. November	2004
-	-	switching elements - Electromechanical	+ corr. July	2005
+ A1	2009	control circuit devices	+ A1	2009
IEC 60947-5-5	1997	Low-voltage switchgear and controlgear -	EN 60947-5-5	1997
+ A1	2005	Part 5-5: Control circuit devices and	+ A1	2005
-	-	switching elements - Electrical	+ A11	2013
+ A2	2016	emergency stop device with mechanical latching function	+ A2	2017
IEC 60947-6-2	2002	Low-voltage switchgear and controlgear -	EN 60947-6-2	2003
+ A1	2007	Part 6-2: Multiple function equipment - Control and protective switching devices (or equipment) (CPS)	+ A1	2007
IEC 61140	2016	Protection against electric shock - Common aspects for installation and equipment	EN 61140	2016
IEC 61310	series	Safety of machinery - Indication, marking and actuation	EN 61310	series