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Safety of machinery - Requirements for cableless control systems of machinery

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/17

Obsahuje: EN 62745:2017, IEC 62745:2017

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EUROPEAN STANDARD

EN 62745

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2017

ICS 13.110; 29.020; 35.100.01

English Version

**Safety of machinery - Requirements for cableless control
systems of machinery
(IEC 62745:2017)**

Sécurité des machines - Exigences générales pour les
systèmes de commande sans fil des machines
(IEC 62745:2017)

Sicherheit von Maschinen - Anforderungen für kabellose
Steuerungen an Maschinen
(IEC 62745:2017)

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

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European foreword

The text of document 44/783/FDIS, future edition 1 of IEC 62745, prepared by IEC/TC 44 "Safety of machinery - Electrotechnical aspects" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62745:2017.

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) 2018-01-11
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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60068-2-1	NOTE	Harmonized as EN 60068-2-1.
IEC 60068-2-2	NOTE	Harmonized as EN 60068-2-2.
IEC 60068-2-6	NOTE	Harmonized as EN 60068-2-6.
IEC 60068-2-27	NOTE	Harmonized as EN 60068-2-27.
IEC 60068-2-30	NOTE	Harmonized as EN 60068-2-30.
IEC 60068-2-64	NOTE	Harmonized as EN 60068-2-64.
IEC 60204 (Series)	NOTE	Harmonized as EN 60204 (Series).
IEC 60870-5-1	NOTE	Harmonized as EN 60870-5-1.
IEC 60947-5-8	NOTE	Harmonized as EN 60947-5-8.
IEC 61508 (Series)	NOTE	Harmonized as EN 61508 (Series).
IEC 61784-1	NOTE	Harmonized as EN 61784-1.
IEC 61784-3:2016	NOTE	Harmonized as EN 61784-3:2016.
ISO 12100	NOTE	Harmonized as EN ISO 12100.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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NOTE 1 When 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-31	2008	Environmental testing -- Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	2008
IEC 60204-1 (mod)	2005	Safety of machinery - Electrical equipment of machines -- Part 1: General requirements	EN 60204-1	2006
-	-		+ corrigendum Feb. 2010	
IEC 60947-5-1	2016	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices	EN 60947-5-1	2016
IEC 60947-5-5	-	Low-voltage switchgear and controlgear -- Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function	EN 60947-5-5	-
IEC 62061	-	Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems	EN 62061	-
ISO 13849-1	-	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design	EN ISO 13849-1	-
ISO 13849-2	-	Safety of machinery - Safety-related parts of control systems - Part 2: Validation	EN ISO 13849-2	-
ISO 13850	-	Safety of machinery - Emergency stop function - Principles for design	EN ISO 13850	-



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Edition 1.0 2017-03

INTERNATIONAL STANDARD



Safety of machinery – Requirements for cableless control systems of machinery





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IEC 62745

Edition 1.0 2017-03

INTERNATIONAL STANDARD



Safety of machinery – Requirements for cableless control systems of machinery

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ELECTROTECHNICAL
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SAFETY OF MACHINERY – REQUIREMENTS FOR
CABLELESS CONTROL SYSTEMS OF MACHINERY**

FOREWORD

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International Standard IEC 62745 has been prepared by IEC technical committee 44: Safety of machinery – Electrotechnical aspects.

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

FDIS	Report on voting
44/783/FDIS	44/785/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

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

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

A bilingual version of this publication may be issued at a later date.

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INTRODUCTION

Cableless control systems (CCS) are increasingly being used to provide an operator interface on a wide range of machinery. The functionality of a CCS and the way in which it interfaces with the overall machine control system can therefore affect the safety of the machinery.

IEC 62745 specifies requirements for the functionality of a CCS that is interfaced with or is part of a machine control system for use as an operator control station on a machine.

The extent to which the functionality of a CCS is relied upon to minimise risk on a machine is a key selection criterion. It is therefore important to select a CCS that provides suitable control functions with an appropriate safety integrity in accordance with the risk assessment at the machine.

In some particular applications, the requirements for a CCS can exceed those specified in this document.

SAFETY OF MACHINERY – REQUIREMENTS FOR CABLELESS CONTROL SYSTEMS OF MACHINERY

1 Scope

This standard specifies requirements for the functionality and interfacing of cableless (for example, radio, infra-red) control systems that provide communication between operator control station(s) and the control system of a machine. Specific requirements are included for such operator control stations that are portable by the operator.

NOTE The part of the cableless control system that is used as an operator control station is sometimes referred to as the 'transmitter' and the part that interfaces with the machine control system is sometimes referred to as the 'receiver'. However, to take account of the possibility of bi-directional communication, this standard refers to these individual parts as the 'remote station' and the 'base station' respectively.

This document does not deal with cableless communication between parts of a machine(s) that are not operator control stations.

This document is not intended to specify all of the requirements that are necessary for the design and construction of a cableless control system. For example, it does not specify communication protocols, frequency or bandwidth aspects, nor the full range of constructional requirements such as impact resistance, ingress protection, electromagnetic compatibility, etc.

The provisions of this document are intended to be applied in addition to the requirements for electrical equipment in the IEC 60204-1.

This document is a type-B2 standard as stated in ISO 12100.

2 Normative references

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IEC 60068-2-31:2008, *Environmental testing – Part 2-31: Tests – Test Ec – Rough handling shocks, primarily for equipment-type specimens*

IEC 60204-1:2005, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

IEC 60947-5-1:2016, *Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices*

IEC 60947-5-5, *Low-voltage switchgear and controlgear – Part 5-5: Control circuit devices and switching elements – Electrical emergency stop device with mechanical latching function*

IEC 62061, *Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems*

ISO 13849-1, *Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design*

ISO 13849-2, *Safety of machinery – Safety-related parts of control systems – Part 2: Validation*

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