BS EN 62733:2015



BSI Standards Publication

Programmable components in electronic lamp controlgear – General and safety requirements (IEC 62733:2015)

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National foreword

This British Standard is the UK implementation of EN 62733:2015, including corrigendum AC:2017. It is identical to IEC 62733:2015, including corrigendum 1:2017.

The text of IEC corrigendum 1:2017 has been provided in its entirety at the beginning of this document. BSI's policy of providing consolidated content remains unchanged; however, in the interest of expediency, in this instance BSI have chosen to collate the relevant content at the beginning of this document.

The UK participation in its preparation was entrusted to Technical Committee CPL/34/3, Auxiliaries for lamps.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Date	Text affected
31 March 2018	Implementation of IEC corrigendum August 2017

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62733

June 2015

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English Version

Programmable components in electronic lamp controlgear - General and safety requirements (IEC 62733:2015)

Composants programmables dans les appareillages électroniques de lampes - Exigences générales et exigences de sécurité (IEC 62733:2015)

Programmierbare Bauteile von elektronischen Betriebsgeräten für Lampen - Teil 1: Allgemeine und Sicherheitsanforderungen (IEC 62733:2015)

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European foreword

The text of document 34C/1140/FDIS, future edition 1 of IEC 62733, prepared by SC 34C, "Auxiliaries for lamps", of IEC TC 34, "Lamps and related equipment", was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62733:2015.

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)	2016-03-11
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-06-11

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EN 62733:2015/AC:2017-09

September 2017

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English Version

Programmable components in electronic lamp controlgear - General and safety requirements (IEC 62733:2015/COR1:2017)

Composants programmables dans les appareillages électroniques de lampes - Exigences générales et exigences de sécurité (IEC 62733:2015/COR1:2017)

Programmierbare Bauteile von elektronischen Betriebsgeräten für Lampen - Allgemeine und Sicherheitsanforderungen (IEC 62733:2015/COR1:2017)

This corrigendum becomes effective on 15 September 2017 for incorporation in the English language version of the EN.

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

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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.

Publication	Year	Title	EN/HD	Year
IEC 61000-4-13	2002	Electromagnetic compatibility (EMC) -- Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests	EN 61000-4-13	2002
+ A1	2009		+ A1	2009
IEC 61347-1	-	Lamp controlgear - Part 1: General and safety requirement	EN 61347-1	-
IEC 61347-2	series	Lamp controlgear	EN 61347-2	series
IEC 61508-4	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems -- Part 4: Definitions and abbreviations	EN 61508-4	2010
IEC 61508-5	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems -- Part 5: Examples of methods for the determination of safety integrity levels	EN 61508-5	2010
IEC 61508-7	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems -- Part 7: Overview of techniques and measures	EN 61508-7	2010
IEC 61547	2009	Equipment for general lighting purposes - EMC immunity requirements	EN 61547	2009

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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IEC 62733
Edition 1.0 2015-05

PROGRAMMABLE COMPONENTS IN ELECTRONIC LAMP CONTROLGEAR – GENERAL AND SAFETY REQUIREMENTS –

IEC 62733
Édition 1.0 2015-05

COMPOSANTS PROGRAMMABLES DANS LES APPAREILLAGES ÉLECTRONIQUES DE LAMPES – EXIGENCES GÉNÉRALES ET EXIGENCES DE SÉCURITÉ –

CORRIGENDUM 1

3.14
tolerable risk

In the definition, replace "5.1" by "5.2"

3.14
risque tolérable

Dans la définition, remplacer "5.1" par "5.2"

IEC 62733:2015-05/COR1:2017-XX(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PROGRAMMABLE COMPONENTS IN ELECTRONIC LAMP CONTROLGEAR – GENERAL AND SAFETY 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 62733 has been prepared by subcommittee 34C: Auxiliaries for lamps, of IEC technical committee 34: Lamps and related equipment.

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

FDIS	Report on voting
34C/1140/FDIS	34C/1156/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.

NOTE In this standard the following print types are used:

– Requirements proper: in Roman type.

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– Test specifications: *in Italic type*.

– Explanatory matter: 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.

The contents of the corrigendum of August 2017 have been included in this copy.

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INTRODUCTION

This International Standard provides safety requirements and test methods for programmable components when in electronic lamp controlgear. It provides additional safety requirements for electronic lamp controlgear containing programmable components to the requirements of IEC 61347 series.

In general, the two means of protection safety principle is used for protection against hazards such as electric shock. Consequently one single fault condition or abnormal operation of the electrical equipment will not lead to a hazardous situation.

Until recent technology, two means of protection have been realized in traditional hardware. Examples are the provision of basic insulation and supplementary insulation between hazardous live parts and accessible parts, and provision of basic insulation combined by disconnection of the mains supply by a fuse.

Nowadays however programmable components (with embedded software) may be used as a measure to provide safety under normal conditions, single fault conditions and/or abnormal operation.

Since the traditional lighting standards do not provide requirements for programmable components, this standard has been drawn up.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers conditions for electromagnetic phenomena that can be expected in practice with influence on the operation of the programmable component, for taking into account the way this can affect the safe operation of the electronic lamp controlgear.

This first edition is based upon IEC 60730-1:2010 and IEC 60335-1:2010 and adapted for electronic lamp controlgear

NOTE The terms and definitions and Tables A.1 and A.2 respectively of this standard are equivalent to terms and definitions and Table R.1 and R.2 of IEC 60335-1:2010, and equivalent terms and definitions and Table H.1 (class B and class C software) of IEC 60730-1:2010.

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PROGRAMMABLE COMPONENTS IN ELECTRONIC LAMP CONTROLGEAR – GENERAL AND SAFETY REQUIREMENTS

1 Scope

This International Standard provides general and safety requirements for programmable components used in products covered by IEC 61347.

The requirements of this standard are only applicable to the programmable components (including its embedded software) in the electronic lamp controlgear. For other electric/electronic circuits and their components in the electronic lamp controlgear, the requirements of IEC 61347 series apply.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61000-4-13:2002, *Electromagnetic compatibility (EMC) – Part 4-13: Testing and measurement techniques – Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests*
IEC 61000-4-13:2002/AMD 1:2009

IEC 61347-1, *Lamp controlgear – Part 1: General and safety requirements*

IEC 61347-2 (all parts)[1], *Lamp controlgear – Part 2: Particular requirements*

IEC 61547:2009, *Equipment for general lighting purposes – EMC immunity requirements*

IEC 61508-4:2010, *Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 4: Definitions and abbreviations*

IEC 61508-5:2010, *Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 5: Examples of methods for the determination of safety integrity levels*

IEC 61508-7:2010, *Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 7: Overview of techniques and measures*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
central processing unit
CPU
part of a computing and controlling system that interprets and executes instructions

[1] Relevant parts of the series depend on the context.

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Note 1 to entry: This note applies to the French language only.

3.2
programmable component
based on computer technology which comprised of hardware, software, and of input and/or output units

EXAMPLE The following are all programmable components:

– microprocessors;
– micro-controllers;
– programmable controllers;
– application specific digital integrated circuits (ASICs with programmable part);
– programmable logic controllers (PLCs);
– other computer-based devices (for example smart sensors, transmitters, actuators).

Note 1 to entry: This term covers microelectronic devices based on one or more central processing units (CPUs) together with associated memories, etc.

Note 2 to entry: The term programmable component is from ANSI/UL1998:2010, definition 2.39 [2].The definition in ANSI/UL for programmable component is: “Any microelectronic hardware that can be programmed in the design centre, the factory, or in the field. Here the term ‘programmable’ is taken to be ‘any manner in which one can alter the software wherein the behaviour of the component can be altered.” This term covers microelectronic devices based on one or more central processing units (CPUs) together with associated memories, etc.

[SOURCE: IEC 61508-4:2010, 3.2.12, modified — "Programmable electronic" is replaced by "programmable component" which better describes that it is only a part of the controlgear.]

3.3
protective programmable component
PPC
programmable component that prevents a hazardous situation under abnormal operating conditions, or programmable component for which none of the output signals can lead to a hazardous situation

Note 1 to entry: This note applies to the French language only.

3.4
software
intellectual creation comprising the programs, procedures, data, rules and any associated documentation pertaining to the operation of a data processing system

[SOURCE: IEC 61508-4:2010, 3.2.5, modified — The notes to entry are deleted.]

3.5
software code
code written by a programmer in a high-level computer language and readable by people but not computers

3.6
safety software
part of the software that counteracts possible hazardous situations, which are created from abnormal and/or fault conditions

Note 1 to entry: Software is independent of the medium on which it is recorded.

3.7
fault condition
condition as required by Clause 14 of IEC 61347-1 or its relevant Part 2

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