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Irish Standard
I.S. EN IEC 63044-3:2018

Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 3: Electrical safety requirements

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NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie

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National Foreword

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NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 63044-3

January 2018

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Supersedes EN 50491-3:2009

English Version

Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 3: Electrical safety requirements (IEC 63044-3:2017)

Systèmes Electroniques pour les Foyers Domestiques et les Bâtiments (HBES) et Systèmes de Gestion Technique du Bâtiment (SGTB) - Partie 3: Exigences de sécurité électrique (IEC 63044-3:2017)

Allgemeine Anforderungen an die Elektrische Systemtechnik für Heim und Gebäude (ESHG) und an Systeme der Gebäudeautomation (GA) - Teil 3: Anforderungen an die elektrische Sicherheit (IEC 63044-3:2017)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of document 23/735/CDV, future edition 1 of IEC 63044-3, prepared by IEC/TC 23 "Electrical accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63044-3:2018.

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)	2018-07-19
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2021-01-19

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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.

For the relationship with EU Directive see informative Annex ZZ, which is an integral part of this document.

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The text of the International Standard IEC 63044-3:2017 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60065	NOTE	Harmonized as EN 60065.
IEC 60598 Series	NOTE	Harmonized as EN 60598 Series.
IEC 60669-2-1	NOTE	Harmonized as EN 60669-2-1.
IEC 60669-2-5	NOTE	Harmonized as EN 60669-2-5.
IEC 60730-1	NOTE	Harmonized as EN 60730-1.
IEC 60730-2-11	NOTE	Harmonized as EN 60730-2-11.
IEC 60730-2-14	NOTE	Harmonized as EN 60730-2-14.
IEC 60950-1:2005	NOTE	Harmonized as EN 60950-1:2006 (modified).
IEC 60990	NOTE	Harmonized as EN 60990.
IEC 61140	NOTE	Harmonized as EN 61140.
IEC 61558 Series	NOTE	Harmonized as EN 61558 Series.
IEC 61800 Series	NOTE	Harmonized as EN 61800 Series.
IEC 62040 Series	NOTE	Harmonized as EN 62040 Series.
IEC 62080	NOTE	Harmonized as EN 62080.
IEC 62094-1	NOTE	Harmonized as EN 62094-1.
IEC 62368-1	NOTE	Harmonized as EN 62368-1.
ISO 16484-2	NOTE	Harmonized as EN ISO 16484-2.

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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 60038 (mod)	2009	IEC standard voltages	EN 60038 [1)]	2011
IEC 60364 (mod)	Series	Low-voltage electrical installations	HD 60364	Series
IEC 60364-5-52 (mod)	-	Low-voltage electrical installations - Part 5-52: Selection and erection of electrical equipment - Wiring systems	HD 60364-5-52	2011
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 61180	-	High-voltage test techniques for low-voltage equipment - Definitions, test and procedure requirements, test equipment	EN 61180	2016
IEC 62151	2000	Safety of equipment electrically connected to a telecommunication network	-	-
IEC 62949	-	Particular safety requirements for equipment to be connected to information and communication networks	EN 62949	2017
IEC 63044-1	-	Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 1: General requirements	EN 63044-1	2017

[1)] The title of EN 60038 is "CENELEC standard voltages".

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Annex ZZ
(informative)

Relationship between this European standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered

This European standard has been prepared under a Commission's standardisation request relating to harmonised standards in the field of the Low Voltage Directive, M/511, to provide one voluntary means of conforming to safety objectives of Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZ.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding safety objectives of that Directive, and associated EFTA regulations.

Table ZZ.1 – Correspondence between this European standard and Annex I of Directive 2014/35/EU [2014 OJ L96]

Safety objectives of Directive 2014/35/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
1(a)	1, 2, 3, 4, 5	To be used in conjunction with the appropriate product standard
1(b)	5	To be used in conjunction with the appropriate product standard
1(c)	See 2 and 3	
2(a)	5, 6	To be used in conjunction with the appropriate product standard
2(b)	5, 6.2.4	To be used in conjunction with the appropriate product standard
2(c)	5	To be used in conjunction with the appropriate product standard
2(d)	5, 6	To be used in conjunction with the appropriate product standard
3(a)	5	To be used in conjunction with the appropriate product standard
3(b)	5, 6.3	To be used in conjunction with the appropriate product standard
3(c)	5, 6.2.4	To be used in conjunction with the appropriate product standard

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WARNING 2: Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

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IEC 63044-3

Edition 1.0 2017-01

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 3: Electrical safety requirements

Systèmes Electroniques pour les Foyers Domestiques et les Bâtiments (HBES) et Systèmes de Gestion Technique du Bâtiment (SGTB) – Partie 3: Exigences de sécurité électrique

IEC 63044-3:2017-01(en-fr)

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IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 3: Electrical safety requirements

Systèmes Electroniques pour les Foyers Domestiques et les Bâtiments (HBES) et Systèmes de Gestion Technique du Bâtiment (SGTB) – Partie 3: Exigences de sécurité électrique

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOME AND BUILDING ELECTRONIC SYSTEMS (HBES) AND BUILDING AUTOMATION AND CONTROL SYSTEMS (BACS) –

Part 3: Electrical safety requirements

FOREWORD

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International Standard IEC 63044-3 has been prepared by IEC technical committee 23: Electrical accessories.

A list of all parts in the IEC 63044 series, published under the general title *Home and Building Electronic Systems (HBES) and Building Automation Control Systems (BACS)*, can be found on the IEC website.

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

CDV	Report on voting
23/735/CDV	23/747/RVC

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

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

In this publication, the following print types are used:

– Requirements proper: in roman type.
– *Test specifications: in italic type.*

This document shall be used in conjunction with relevant product safety standards.

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- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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INTRODUCTION

The IEC 63044 series deals with developing and testing Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS).

This document deals with electrical safety requirements for HBES/BACS.

This document is based on the philosophy that a device considered electrically safe according to an appropriate product safety standard should also remain safe when connected to a network. This document specifies in addition to the specific product standard the electrical safety requirements necessary in order for an HBES/BACS device connected to a network to remain safe under normal and single-fault conditions of the HBES/BACS network and at the same time under normal and single-fault conditions of one or more HBES/BACS devices connected to the HBES/BACS network. This includes protection from overvoltages on the network, protection from hazards caused by connection of different types of circuit, the limitation of the touch current to a network and protection of the communication wiring from overheating.

The HBES/BACS network is any interconnection between HBES/BACS products. The HBES/BACS networks can be either an ICT network with interfaces classified according to IEC 62949 or a dedicated network classified as a mains, ELV, FELV, SELV or PELV circuit.

For HBES/BACS products connected to an ICT network, the requirements in IEC 62949 apply.

For HBES/BACS products connected to a dedicated HBES/BACS network, the requirements for the electrical separation between the device and the network circuit are specified (see Table 1). These specifications of the electrical separations follow the principle in the basic safety publications IEC 60664-1 and IEC 61140, together with the installation requirements of IEC 60364. The following compromises are used.

– According to the principles of IEC 60664-1, the rated impulse voltage for the separation shall be the higher of the impulse voltage on the network and the rated impulse voltage of the device circuit to be connected to the network.
– The overvoltage categories considered by IEC 60664-1 refer to overvoltages derived directly from the mains through the power supply.
– The overvoltages coming from other sources (e.g. capacitive couplings) are not specified in IEC 60664-1. IEC 60664-1 recommends that technical committees specify overvoltage categories or rated impulse voltages as appropriate.

For the purposes of this document, the following impulse voltages have been specified.

- For networks with galvanic electrical separation from mains (FELV, SELV or PELV circuit), the impulse overvoltage coming from the network side of the separation has been limited to 2,5 kV for fixed installed networks and 1,5 kV for detachable networks.
- For ICT networks, particular requirements apply (see 6.3.2.1).

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HOME AND BUILDING ELECTRONIC SYSTEMS (HBES) AND BUILDING AUTOMATION AND CONTROL SYSTEMS (BACS) –

Part 3: Electrical safety requirements

1 Scope

This part of IEC 63044 provides the electrical safety requirements related to the HBES/BACS network in addition to the product safety standards for HBES/BACS devices.

It also applies to devices used within an HBES/BACS network for which no specific HBES/BACS product safety standard exists.

In addition, it defines safety requirements for the interface of equipment intended to be connected to an HBES/BACS network. It does not apply to interfaces to other networks.

NOTE An example of other networks is a dedicated ICT network covered by IEC 62949.

This document is applicable to

– operator stations and other human–system interface devices,
– devices for management functions,
– control devices, automation stations and application-specific controllers,
– field devices and their interfaces, and
– cabling and interconnection of devices

used within a dedicated HBES/BACS network.

This document covers the following requirements and compliance criteria:

- protection from hazards in the device;
- protection from overvoltages on the network;
- protection from touch current;
- protection from hazards caused by different types of circuit;
- protection of the communication wiring from overheating caused by excessive current.

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.

IEC 60038:2009, *IEC standard voltages*

IEC 60364 (all parts), *Low-voltage electrical installations*

IEC 60364-5-52, *Low-voltage electrical installations – Part 5-52: Selection and erection of electrical equipment – Wiring systems*

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