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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Home and building electronic systems (HBES) and building automation and control systems (BACS) – Part 5-3: EMC requirements for HBES/BACS used in industrial environments

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Systèmes électroniques pour les foyers domestiques et les bâtiments (HBES) et systèmes de gestion technique du bâtiment (SGTB) – Partie 5-3: Exigences CEM relatives aux HBES/SGTB destinés à être utilisés en environnement industriel

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 5-3: EMC requirements for HBES/BACS used in industrial environments

FOREWORD

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International Standard IEC 63044-5-3 has been prepared by IEC technical committee 23: Electrical accessories.

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

CDV	Report on voting
23/738/CDV	23/750/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.

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

This International Standard is to be used in conjunction with IEC 63044-5-1:2017.

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

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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- withdrawn,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.

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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).

The IEC 63044-5 series ensures a common level of EMC requirements for HBES/BACS devices.

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

Part 5-3: EMC requirements for HBES/BACS used in industrial environments

1 Scope

Clause 1 of IEC 63044-5-1:2017 applies, with the following modification:

Replace the fourth paragraph with the following:

This document specifies EMC requirements for HBES/BACS to be installed in industrial environments, according to the definition given in IEC 61000-6-2.

NOTE Industrial environment covers the office spaces that may be present in industrial premises.

Industrial automation systems are outside the scope.

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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.

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IEC 63044-5-1, *Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 5-1: EMC requirements, conditions and test set-up*

IEC 61000-4-4, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61000-4-6, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-6-2, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity standard for industrial environments*

IEC 61000-6-4, *Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments*

3 Terms, definitions and abbreviated terms

For the purposes of this document, the terms, definitions and abbreviations given in IEC 63044-5-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

4 General requirements

Clause 4 of IEC 63044-5-1:2017 applies.

5 Performance criteria

Clause 5 of IEC 63044-5-1:2017 applies.

6 Standard test conditions

Clause 6 of IEC 63044-5-1:2017 applies.

7 EMC requirements

7.1 Immunity requirements

For products used in industrial environments, the immunity requirements of the generic standard IEC 61000-6-2 apply to enclosure, AC/DC power and I/O signal ports. The performance criteria and the test set-ups are defined in IEC 63044-5-1.

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Test levels for HBES/BACS network ports are specified in Table 1.

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Table 1 – EMC immunity requirements for HBES/BACS network ports

Phenomenon	Basic standard	Test specification	Performance criterion [g]	Remarks
Radio-frequency common mode	IEC 61000-4-6	(0,15 to 80) MHz 80 % AM (1 kHz) 10 V	 A [b]	[a,c,d]
Fast transients (bursts)	IEC 61000-4-4	t_r/t_h 5/50 ns 5 kHz Repetition ±0,5 kV	 A	[c] Capacitive clamp used
Transients (surge)	IEC 61000-4-5	T_r/T_h 1,2/50(8/20) µs		[e,f]
Line to earth		±2 kV	B	
Line to line				
– balanced transmission		No test		
– unbalanced transmission		±1 kV	B	

[a] The test level can also be defined as the equivalent current into a 150 Ω load.

[b] Except for the ITU broadcast frequency band 47 MHz to 68 MHz, where the level shall be 3 V and the performance criteria A.

[c] Applicable only to communication interfaces with cables whose total length according to the manufacturer's functional specification may exceed 3 m.

[d] The test level specified is the r.m.s. value of the unmodulated carrier.

[e] Applicable only to communication interfaces with cables whose total length according to the manufacturer's functional specification may exceed 30 m.

[f] Where normal functioning cannot be achieved because of the impact of the CDN on the EUT, this test is not required.

[g] See definition of performance criterion A in 5.1 and 5.2 of IEC 63044-5-1:2017 for details.

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7.2 Emission requirements

The requirements of IEC 61000-6-4 apply.

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