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Irish Standard  
I.S. EN 50065-1:2011

# Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz -- Part 1: General requirements, frequency bands and electromagnetic disturbances

## I.S. EN 50065-1:2011

*Incorporating amendments/corrigenda issued since publication:*

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<b>NSAI</b> 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie  W NSAI.ie	<b>Sales:</b> T +353 1 857 6730 F +353 1 857 6729 W standards.ie
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**EN 50065-1**

April 2011

ICS 33.040.30

Supersedes EN 50065-1:2001 + A1:2010

English version

**Signalling on low-voltage electrical installations in the frequency range  
3 kHz to 148,5 kHz -  
Part 1: General requirements, frequency bands and electromagnetic  
disturbances**

Transmission de signaux sur les réseaux  
électriques basse tension dans la bande  
de fréquences de 3 kHz à 148,5 kHz -  
Partie 1: Règles générales, bandes de  
fréquences et perturbations  
électromagnétiques

Signalübertragung auf elektrischen  
Niederspannungsnetzen im  
Frequenzbereich 3 kHz bis 148,5 kHz -  
Teil 1: Allgemeine Anforderungen,  
Frequenzbänder und elektromagnetische  
Störungen

This European Standard was approved by CENELEC on 2011-03-21. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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**CENELEC**

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

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

This European Standard was prepared by the CENELEC technical subcommittee SC 205A, Mains communication systems, of Technical Committee CENELEC TC 205, Home and Building Electronic Systems (HBES).

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50065-1 on 2011-03-21.

This European Standard supersedes EN 50065-1:2001 + A1:2010.

This revision aligns EN 50065-1 with CENELEC Guide 24; this has been done in particular in relation to the responsibilities of parties involved by replacing with references to common application types whilst not making technical changes to the standard. In addition the text on common-mode signalling has been clarified and account taken of use of mains signalling in relation to the charging of electric vehicles. Additional editorial changes have been made to clarify areas on which there have been queries.

The following dates were fixed:

- latest date by which the revision has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2012-03-21
- latest date by which the national standards conflicting  
with the amendment have to be withdrawn (dow) 2014-03-21

EN 50065 consists of the following parts, under the general title *Signalling on low voltage electrical installations in the frequency range 3 kHz to 148,5 kHz*:

Part 1	General requirements, frequency bands and electromagnetic disturbances
Part 2-1	Immunity requirements for mains communications equipment and systems operating in the range of frequencies 95 kHz to 148,5 kHz and intended for use in residential, commercial and light industrial environments
Part 2-2	Immunity requirements for mains communications equipment and systems operating in the range of frequencies 95 kHz to 148,5 kHz and intended for use in industrial environments
Part 2-3	Immunity requirements for mains communications equipment and systems operating in the range of frequencies 3 kHz to 95 kHz and intended for use by electricity suppliers and distributors
Part 4-1	Low voltage decoupling filters – Generic specification
Part 4-2	Low voltage decoupling filters – Safety requirements
Part 4-3	Low voltage decoupling filters – Incoming filter
Part 4-4	Low voltage decoupling filters – Impedance filter
Part 4-5	Low voltage decoupling filters – Segmentation filter
Part 4-6	Low voltage decoupling filters – Phase coupler
Part 7	Equipment impedance

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## 1 Scope

This standard applies to electrical equipment using signals in the frequency range 3 kHz to 148,5 kHz to transmit information on low voltage electrical systems, either on the public electricity distribution network or within installations in consumers' premises.

It specifies the frequency bands allocated to the different applications, limits for the terminal output voltage in the operating band and limits for conducted and radiated disturbance. It also gives the methods of measurement.

It does not specify the modulation methods, the coding methods or functional features (except those for the prevention of mutual interference).

Environmental requirements and tests are not included.

NOTE 1 Compliance with this standard does not imply permission to establish communication with locations outside the consumer's installation or with other consumers through the public electricity distribution network where this would not otherwise be allowed.

The object of the standard is to limit mutual influence between transmission equipment in electrical installations and between such equipment and other equipment. In addition this standard is intended to limit interference caused by signal transmission equipment to sensitive electronic equipment. However, complete freedom from such interference cannot be assured.

NOTE 2 Designers should consider signalling systems in conformance with this standard when determining immunity for electrical equipment.

## 2 Normative references

The following referenced documents are indispensable for the application 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 60050-161		International electrotechnical vocabulary – Chapter 161: Electromagnetic compatibility
EN 55016-1-1	2010	Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-1: Radio disturbance and immunity measuring apparatus – Measuring apparatus (CISPR 16-1-1:2010)
EN 55016-1-2	2004	Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-2: Radio disturbance and immunity measuring apparatus – Ancillary equipment – Conducted disturbances (CISPR 16-1-2:2003 + A1:2004 + A2:2006)
+ A1	2005	
+ A2	2006	
EN 55016-1-4	2010	Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-4: Radio disturbance and immunity measuring apparatus – Antennas and test sites for radiated disturbance measurements (CISPR 16-1-4:2010)
EN 55016-2-2	2004	Specification for radio disturbance and immunity measuring apparatus and methods – Part 2-2: Methods of measurement of disturbances and immunity – Measurement of disturbance power (CISPR 16-2-2:2003 + A1:2004 + A2:2005)
+ A1	2005	
+ A2	2005	

## 3 Terms and definitions

The definitions in IEC 60050-161 apply.

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

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