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**Signalizacija po nizkonapetostnih električnih napeljavah v frekvenčnem območju od 3 kHz do 148,5 kHz - 1. del: Splošne zahteve, frekvenčna območja in elektromagnetne motnje**

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

Signalübertragung auf elektrischen Niederspannungsnetzen im Frequenzbereich 3 kHz bis 148,5 kHz -- Teil 1: Allgemeine Anforderungen, Frequenzbänder und elektromagnetische Störungen (standards.iteh.ai)

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

**Ta slovenski standard je istoveten z: EN 50065-1:2001/A1:2010**

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**ICS:**

33.040.30	Komutacijski in signalizacijski sistem	Switching and signalling systems
33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

**SIST EN 50065-1:2003/A1:2010**                      **en,fr,de**

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EUROPEAN STANDARD  
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**EN 50065-1/A1**

January 2010

ICS 33.040.30

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 -  
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de fréquences et perturbations  
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Signalübertragung auf elektrischen  
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This amendment A1 modifies the European Standard EN 50065-1:2001; it was approved by CENELEC on 2009-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

**CENELEC**

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

**Central Secretariat: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

This amendment to the European Standard EN 50065-1:2001 was prepared by SC 205A, Mains communicating 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 amendment A1 to EN 50065-1:2001 on 2009-10-01.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

- latest date by which the amendment has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2010-10-01
- latest date by which the national standards conflicting  
with the amendment have to be withdrawn (dow) 2012-10-01

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## Foreword

**Replace** the 7<sup>th</sup> paragraph (on references) with the following two paragraphs:

References to CISPR 16-1 and CISPR 16-2 have been updated to the restructured CENELEC versions current at the time of publication. In addition some terminology has been updated to make it more appropriate to the current structure of the European electricity industry.

This amendment has been restricted to the above changes for urgent reasons, but it will be followed by a full revision to take into account new technological developments in automatic meter reading and will remove any regulatory statements from the standard. In addition the text on common-mode signalling will be clarified and account will be taken of any potential use of mains signalling in relation to the charging of electric vehicles.

## Contents

**Replace** the titles of Figures F.1b and F.2 with the following ones:

Figure F.1b The adaptive network connection with the EN 55016-1-2 network

Figure F.2 The nominal EN 55016-1-2:2004, Figure 1a impedance (doubled) and the calculated impedance between points A and B (Figure F.1b) when the adaptive network is added to the EN 55016-1-2 network

## 1 Scope

In the 1st paragraph **replace** "public supply system" with "public electricity distribution network".

In the NOTE **replace** "public supply system" with "public electricity distribution network".

## 2 Normative references

**Delete** the references to CISPR 16-1:1993 and CISPR 16-2:1996 and **replace** with the following references:

EN 55016-1-1	2007	Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-1: Radio disturbance and immunity measuring apparatus – Measuring apparatus (CISPR 16-1-1:2006 + A1:2006 + A2:2007)
+ A1	2007	
+ A2	2008	
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	2007	Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-4: Radio disturbance and immunity measuring apparatus – Ancillary equipment – Radiated disturbances (CISPR 16-1-4:2007 + A1:2007)
+ A1	2008	
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	

## 4 Frequency bands and classifications

### 4.1 Band 3 kHz up to 95 kHz

Replace “electricity suppliers” with “electricity distributors”.

## 5 Access protocol

### 5.3 Band in use condition

In the NOTE replace “CISPR 16-1:1993” with “EN 55016-1-2”.

### 5.4 Allowed use of the sub-band

In the last paragraph replace “suppliers” with “equipment supplier’s”.

## 6 Transmitter output voltage

### 6.1.1 Measuring circuit for single-phase devices

In the 1<sup>st</sup> paragraph replace “subclause 11.2 of CISPR 16-1:1993” with “subclause 4.2 of EN 55016-1-2:2004”.

### 6.1.2 Measuring circuit for three-phase devices

In the 1<sup>st</sup> paragraph replace “subclause 11.2 of CISPR 16-1:1993” with “subclause 4.2 of EN 55016-1-2:2004”.

In the 3<sup>rd</sup> paragraph replace “supplier’s” with “equipment supplier’s”.

#### 6.3.1.1 Sub-band 3 kHz up to 9 kHz

In Figure 3 replace “CISPR 16-1:1993 figure 23” with “EN 55016-1-2:2004, Figure 4”.

#### 6.3.1.2 Sub-band above 9 kHz up to 95 kHz

In the 2<sup>nd</sup> paragraph replace “CISPR 16-1:1993, Figure 7a” with “EN 55016-1-2:2004, Figure 1a”.

Replace NOTE 1 and NOTE 2 with:

NOTE 1 EN 55016-1-2 gives an example circuit in subclause 4.2, Figure 4 with component values listed in annex F, but recommends compensation of the readings for frequencies in the 9 to 150 kHz band. Alternative values of capacitor C1 (Figure 4, EN 55016-1-2:2004) are shown in Figure 5 appropriate to frequency ranges 9 to 95 kHz and 95 to 148,5 kHz.

NOTE 2 Artificial networks conforming to EN 55016-1-2:2004, subclause 4.2, Figure 1a are available commercially, but circuit implementations may differ in detail from the example in Figure 5. Care should be taken that the implementation is appropriate to the measurement frequency.

In Figure 5 replace “CISPR 16-1:1993 figure 23” with “EN 55016-1-2:2004, subclause 4.2, Figure 4.”

#### 6.3.2.2 Sub-band above 9 kHz up to 95 kHz

In the 2<sup>nd</sup> paragraph replace “CISPR 16-1:1993, Figure 7a” with “EN 55016-1-2:2004, subclause 4.1, Figure 1a”.

## 7 Disturbance limits

Replace "CISPR 16-1:1993 section 1" with "EN 55016-1-1".

### 7.2 Limits of radiated disturbance field strength

Replace "CISPR 16-1:1993 clause 15" with "EN 55016-1-4".

## Annex A Method of measurement of the frequency range over which a transmitter device detects a signal from another device in the frequency range 125 kHz to 140 kHz

In A.1 **replace** "subclause 11.2 of CISPR 16-1:1993" with "subclause 4.2 of EN 55016-1-2:2004".

In the legend of Figure A.1 **replace** "subclause 11.2 of CISPR 16-1:1993" with "subclause 4.2 of EN 55016-2-2:2004".

## Annex B Method of measurement of the spectral distribution of a transmitting devices signal in the frequency range 125 kHz to 140 kHz

In the 1<sup>st</sup> paragraph, item a) **replace** "CISPR 16-1:1993 section 1" with "EN 55016-1-1".

In the 1<sup>st</sup> paragraph, item b) **replace** "subclause 11.2 of CISPR 16-1:1993" with "subclause 4.2 of EN 55016-1-2:2004".

## Annex C Methods of measurement (3 kHz to 30 MHz)

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In the 1<sup>st</sup> paragraph **replace** "CISPR 16-1:1993, section 2" with "EN 55016-1-2".

### C.1.2.1 Frequency range 3 kHz to 9 kHz

In the 1<sup>st</sup> paragraph **replace** "Figure 23 of CISPR 16-1:1993" with "Figure 4, subclause 4.2 of EN 55016-1-2:2004".

### C.1.2.2 Frequency range 9 kHz to 30 MHz

In the 1<sup>st</sup> paragraph **replace** "CISPR 16-1:1993, Figures 7a and 7b" with "EN 55016-1-2:2004, subclause 4.2, Figure 1a and subclause 4.3, Figure 1b".

In the 2<sup>nd</sup> paragraph **replace** "CISPR 16-1:1993, subclause F.2 and Table F.1" with "EN 55016-1-2:2004, subclause A.2, Table A.1".

## Annex D Methods of measurement of disturbance power (30 MHz to 1 GHz)

### D.2 Measurement procedure

In the 1<sup>st</sup> paragraph **replace** "CISPR 16-2:1996, subclause 2.5" with "EN 55016-2-2:2004, Clause 7".

## Annex E Attenuation characteristics of measuring instrument above 150 kHz

In the 1<sup>st</sup> paragraph **replace** "CISPR 16-1:1993 clause 3" with "EN 55016-1-1:2007, Clause 5"

## **Annex F Design for a single artificial network intended to show the performance of a signalling system**

In the 2<sup>nd</sup> paragraph **replace** “subclause 11.2 of CISPR 16-1:1993 (example Figure 5)” with “subclause 4.2 of EN 55016-1-2:2004 (example Figure 5, subclause 6.3.1.2)”.

In the legend of Figure F.1b **replace** “subclause 11.2 of CISPR 16-1:1993” with “subclause 4.2 of EN 55016-1-2:2004”.

In Figure F.1b **replace** the title with

**Figure F.1b – The adaptive network connection with the EN 55016-1-2 network**

In Figure F.2 **replace** both references to “CISPR 16-1” with “EN 55016-1-2”.

In Figure F.2 **replace** the title with:

**Figure F.2 – The nominal EN 55016-1-2:2004, Figure 1a impedance (doubled) and the calculated impedance between points A and B (Figure F.1b) when the adaptive network is added to the EN 55016-1-2 network**

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