SLOVENSKI STANDARD

SIST EN 50065-2-1:2004/A1:2006

januar 2006

Signalizacija po nizkonapetostnih električnih napeljavah v frekvenčnem območju od 3 kHz do 148,5 kHz – 2-1. del: Zahteve za odpornost omrežne komunikacijske opreme in sistemov, ki obratujejo v frekvenčnem območju od 95 kHz do 148,5 kHz in so namenjeni za uporabo v stanovanjih, poslovnih prostorih in lahkoindustrijskih okoljih

(istoveten EN 50065-2-1:2003/A1:2005)

Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz – 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

ICS 33.040.30; 33.100.20

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English version

Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz 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

Transmission de signaux sur les réseaux électriques basse tension dans la bande de fréquences de 3 kHz à 148,5 kHz Partie 2-1: Exigences d'immunité pour les appareils et les systèmes de communication sur le réseau électrique dans la bande de fréquences de 95 kHz à 148,5 kHz et destinés à être utilisés dans les environnements résidentiel, commercial et de l'industrie légère

Signalübertragung auf elektrischen Niederspannungsnetzen im Frequenzbereich 3 kHz bis 148,5 kHz Teil 2-1: Störfestigkeitsanforderungen an Netz-Datenübertragungsgeräte und -systeme, die im Frequenzbereich 95 kHz bis 148,5 kHz betrieben werden und für den Gebrauch in Wohnbereichen, Geschäfts- und Gewerbebereichen sowie in Kleinbetrieben bestimmt sind

This amendment A1 modifies the European Standard EN 50065-2-1:2003; it was approved by CENELEC on 2005-07-01. 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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

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Ref. No. EN 50065-2-1:2003/A1:2005 E

Foreword

This amendment to the European Standard EN 50065-2-1:2003 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 50065-2-1:2003 on 2005-07-01.

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)	2006-07-01
– latest date by which the national standards conflicting with the amendment have to be withdrawn	(dow)	2008-07-01

1 Scope

This standard applies to electrical equipment using signals in the frequency range 95 kHz to 148,5 kHz to transmit or receive information on low voltage electrical systems, residential, commercial and light industrial environments. In the case of equipment which includes functions other than the transmission or reception of information on low voltage electrical supplies, this standard applies only to that part of the equipment intended for such transmission or reception of information. Other parts of the equipment shall comply with the immunity standard or standards relevant to the functions of those other parts. In the event of tests being specified in those other standards of a different severity and where the construction of the equipment is such that the functions cannot be tested separately, the higher severity shall apply to all affected functions.

The object of this standard is to limit mutual influence between mains communication equipment and systems (MCES) operating in different frequency bands as defined in EN 50065-1 and to contribute to ensuring Electromagnetic Compatibility in general. It specifies essential immunity requirements and test methods, including those tests which are to be performed during type-testing of MCES on low-voltage installations, for electromagnetic interference in general and more specific interference coming from other MCES. It therefore defines the immunity test requirements for apparatus in relation to continuous and transient disturbances, both conducted and radiated, and electrostatic discharges. Test requirements are specified for each port considered.

This standard gives limits which are applicable to products operating in residential, commercial and light industrial environments. The levels do not however cover extreme cases which may occur in any location but with a low probability of occurrence. In special cases situations will arise where the level of disturbances may exceed the levels specified in this standard e.g. where a hand-held transmitter is used in proximity to an apparatus. In these instances special mitigation measures may have to be employed.

It does not specify immunity between mains communication systems operating in the same band (as defined in EN 50065-1) or immunity to signals originating from Power Line Carrier systems operating on high or medium voltage networks.

Safety considerations are not included in this standard.

2 Normative references

Replace “EN 50082-1“ by “EN 61000-6-1“.

Replace “EN 50065-1:1991” by “EN 50065-1”.

CISPR 16-1: **Delete** “1999”.

3 Definitions

Delete 3.7 public mains network

7 Immunity specifications

7.2.1 Immunity requirements

Add to end of first sentence "… and in addition in Table 6 of 7.2.2."

Table 2 - Immunity: Ports for signal and control lines

Add "*" to the title.

Add footnote at the bottom of the page: "* in the case of the signal port and the AC power port being different; otherwise see Table 4. This is only applicable to low-level signal ports and not to signal ports directly connected to the mains".

Table 3 - Immunity: d.c. input and d.c. output power ports

Line b) Surges: **Change** "0,5 kV" to "± 0,5 kV" for common mode and differential mode.

Table 4 - Immunity: a.c. input and a.c. output power ports

Line c) Voltage interruptions: **Change** from "1 000 ms" to "5 s".

Line d) Surges: **Change** the values to "± 2 kV" for common mode and to "± 1 kV" for differential mode.

Add additional table below as Table 5.

Table 5 - Immunity: Earth port (functional ground terminal)

	Environmental phenomenon	Test specification	Units	Basic standard	Remarks	Performance criterion
a)	Radio-frequency common mode. Amplitude modulated.	0,15 to 80 3 80	MHz V % AM (1 kHz)	EN 61000-4-6	See NOTE 1. The test level specified is prior to modulation.	A
b)	Fast transients	± 0,5 5/50 5	kV (peak) Tr/Th ns Rep. frequency kHz	EN 61000-4-4	See NOTE 2. Use of the capacitive clamp.	B

NOTE 1 The test level can be defined as the equivalent current into a 150 Ω load.

NOTE 2 Applicable only to ports interfacing with cable whose total length may exceed 3 m according to the manufacturers functional specification.

7.2.2 Narrow-band conducted interference

Replace the 1st sentence in the text between NOTE 2 and NOTE 3 by:

The coupling network is then disconnected from the measurement network and connected to Port A as shown in Annex A such that the disturbing signal is applied to the EUT.

Renumber existing Table 5 of 7.2.2 as Table 6.

Annex A (normative) **Test circuit**

Delete the second paragraph.

Replace the first sentence below Figure A.1 - Test circuit by:

Port A is used for the tests a), d) and e) in Table 4 and tests a), b) in Table 5.