SLOVENSKI STANDARD

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Signalizacija po nizkonapetostnih električnih napeljavah v frekvenčnem območju od 3 kHz do 148,5 kHz – 4-3. del: Nizkonapetostni ločilni filtri – Vhodni filter

Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz - Part 4-3: Low voltage decoupling filter - Incoming filter

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English version

Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz Part 4-3: Low voltage decoupling filter - Incoming filter

Transmission de signaux sur les réseaux électriques basse tension dans la bande de fréquences de 3 kHz à 148,5 kHz
Partie 4-3: Filtres basse tension de découplage -
Filtre de branchement

Signalübertragung auf elektrischen Niederspannungsnetzen im Frequenzbereich 3 kHz bis 148,5 kHz
Teil 4-3: Niederspannungs-Entkopplungsfilter -
Eingangsfilter

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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

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Foreword

This European Standard 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 EN 50065-4-3 on 2001-09-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2003-08-01
- latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2004-08-01

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

Contents

1 Scope

This standard applies to incoming filters used to control the coupling of signals between the utility area and the consumer area (see Figure 1).

The standard defines

- the minimum impedance in the relevant frequency band(s) at both Utility port and Consumer port,
- the minimum attenuation of unwanted signals transmitted from the utility side to the consumer side and vice versa,
- the transmission characteristics:
  - operating frequency domain for both utility side and consumer side,
  - attenuation between the utility side and the consumer side and vice versa,
  - impedance at the utility side and at the consumer side.

This standard applies to incoming filters designed for and used in single or multiphase installations.

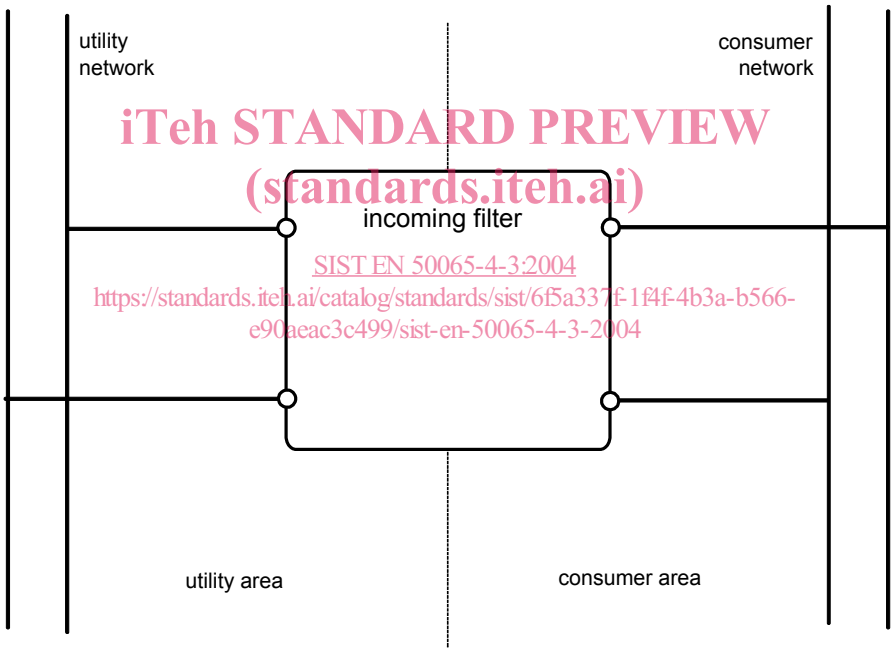

Figure 1 - The application of incoming filter

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 50065-2-1 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

EN 50065-2-2 Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz - 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.

EN 50065-2-3 Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz - 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.

EN 50065-4-1 Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz - Part 4-1: Low voltage decoupling filters - Generic specification.

EN 50065-4-2 Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz - Part 4-2: Low voltage decoupling filters - Safety requirements.

3 Classification

The selection of the filter shall be made according to the local regulations.

NOTE If there are no local regulations, Type 1 shall be used.

3.1 Type 1

Satisfies both the utility and the consumer impedance requirements.

3.2 Type 2

Satisfies only the utility impedance requirements.

3.3 Type 3

Satisfies only the consumer impedance requirements.

4 Incoming filter electrical characteristics

The filter shall meet the requirements given in EN 50065-4-1 and EN 50065-2 series.

4.1 Overvoltage

Requirements in accordance with 7.1.5 of EN 50065-4-2:

- for the utility side: category IV;
- for the consumer side: category III.

4.2 EMC

According to EN 50065-2-1 for the consumer side in residential, commercial and light industrial environments.

According to EN 50065-2-2 for the consumer side in industrial environments.

According to EN 50065-2-3 for the utility side.

4.3 Operating frequency range

In the band 3 kHz to 148,5 kHz:

- 3 kHz to 95 kHz for the utility side,
- 95 kHz to 148,5 kHz for the consumer side.

4.4 Impedance

a) Impedance at consumer side

At the consumer side of the incoming filter

- when measured in the operating frequency range from 95 kHz to 148,5 kHz,
- in accordance with 6.1 of EN 50065-4-1,
- the utility side loaded with $R_{L,}$

the decoupling filter shall have an impedance modulus value on the consumer side in accordance with Figure 2.

b) Impedance at the utility side

At the utility side of the incoming filter,

- when measured in the frequency range from 3 kHz to 95 kHz,
- in accordance with 6.1 of EN 50065-4-1,
- the consumer side loaded with R_L

the decoupling filter shall have an impedance modulus value on the utility side in accordance with Figure 2.

c) Exception is made however for decoupling filter used to create a return path for the signal when needed (e.g. common mode propagation), where the impedance may be lower when measured at the side of the decoupling filter where the return path or phase coupling is required.

Table 1 - Requirements according to filter type

Type	Requirements
1	a) and b)
2	b)
3	a)