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

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

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

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

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ITC STANDARD PREVIEW
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European foreword

This document (EN 50065-4-5:2023) has been prepared by WG 12 “Filters” of CLC/TC 219 “Mains communicating systems”.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2023-09-24
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2026-03-24

This document supersedes EN 50065-4-5:2003 and all of its amendments and corrigenda (if any).

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

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 4-7: Portable low voltage decoupling filters – Safety requirements

Part 7: Equipment impedance

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

EN 50065-4-5:2023 (E)

1 Scope

This document applies to segmentation filters in a mains communication system intended for utility networks or household and similar fixed installation including residential, commercial and light industrial buildings.

These filters are used to control the coupling of signals between two areas of a mains communication system, as illustrated in Figure 1.

This document defines in the relevant frequency range:

- the minimum impedance at both ports of the filter,
- the minimum attenuation of signals transmitted between the ports of the filter.

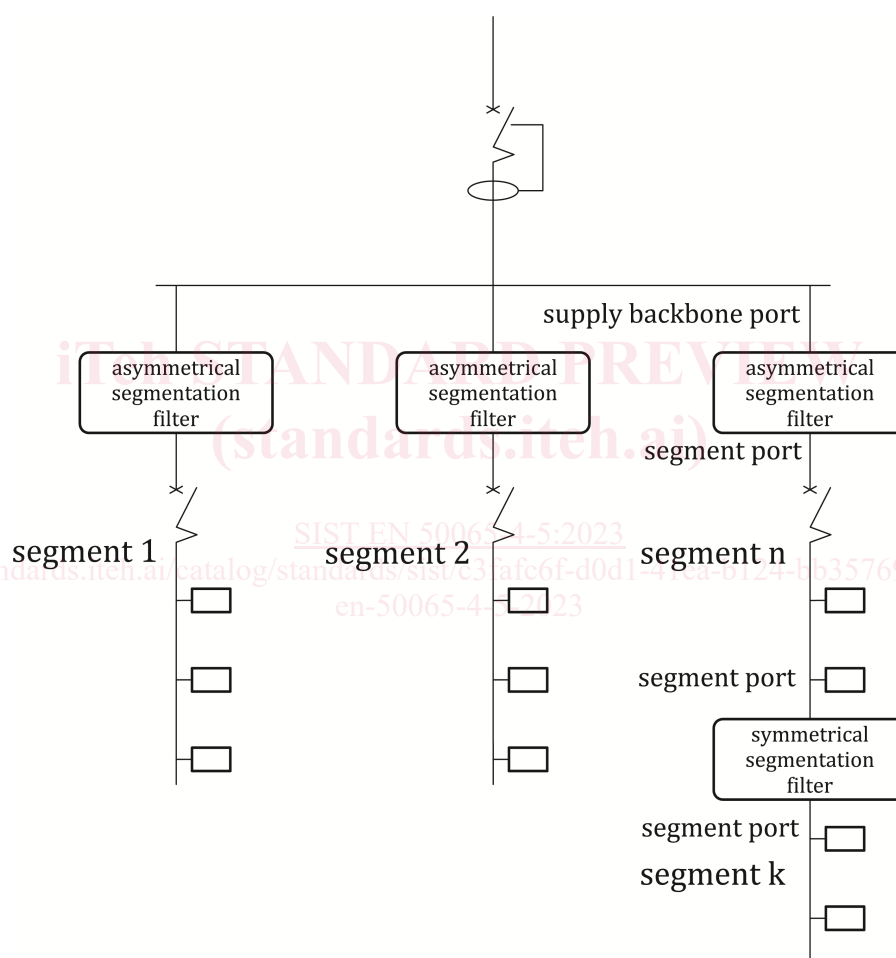


Figure 1 — Application of segmentation filters

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.

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 50065-4-1:2001, *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 and 1,6 MHz to 30 MHz - Part 4-2: Low voltage decoupling filters - Safety requirements*

EN 50065-4-7, *Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz and 1,6 MHz to 30 MHz - Part 4-7: Portable low voltage decoupling filters - Safety requirements*

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

4 Classification

4.1 Type 1: Asymmetrical filter

This filter has one “supply backbone port” and one “segment port”. The “supply backbone port” and the “segment port” have different impedance characteristics in the operating frequency band and shall not be inverted. Communication may not be possible on the “supply backbone port”.

4.2 Type 2: Symmetrical filter

This filter has two “segment ports”. Both “segment ports” have the same impedance characteristics at the operating frequency band and may be inverted. Usually the ports of a symmetrical segmentation filter are connected to different segments of one mains communication system.

5 Segmentation filter electrical characteristics

5.1 General

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

5.2 Immunity for EMC

The filter shall meet the immunity requirements specified in:

- EN 50065-2-1 for segmentation filters in residential, commercial and light industrial environments,