SLOVENSKI STANDARD
oSIST prEN 50065-4-6:2021

01-julij-2021

Signalizacija po nizkonapetostnih električnih napeljavah v frekvenčnem območju od 3 kHz do 148,5 kHz - 4-6. del: Nizkonapetostni ločilni filtri - Fazni spojnik

Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz Part 4-6: Low voltage decoupling filters - Phase coupler

Signalübertragung auf elektrischen Niederspannungsnetzen im Frequenzbereich 3 kHz bis 148,5 kHz Teil 4-6: Niederspannungs-Entkopplungsfilter - Phasenkoppler

Transmission de signaux sur les réseaux électriques basse tension dans la bande de fréquences de 3 kHz à 148,5 kHz - Partie 4-6: Filtres de découplage basse tension - Coupleur de phase

Ta slovenski standard je istoveten z: **prEN 50065-4-6**

ICS:

31.160	Električni filtri	Electric filters
33.040.30	Komutacijski in signalizacijski sistem	Switching and signalling systems

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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prEN 50065-4-6

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ICS

Will supersede EN 50065-4-6:2004 and all of its amendments and corrigenda (if any)

English Version

Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz Part 4-6: Low voltage decoupling filters - Phase coupler

Transmission de signaux sur les réseaux électriques basse tension dans la bande de fréquences de 3 kHz à 148,5 kHz - Partie 4-6: Filtres de découplage basse tension - Coupleur de phase

Signalübertragung auf elektrischen Niederspannungsnetzen im Frequenzbereich 3 kHz bis 148,5 kHz Teil 4-6: Niederspannungs-Entkopplungsfilter - Phasenkoppler

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2021-07-16.

It has been drawn up by CLC/TC 219.

If this draft becomes a European Standard, CENELEC members are bound to comply with the CEN/CELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CENELEC in three official versions (English, French, German).
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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents

European foreword

This document (prEN 50065-4-6:2021) has been prepared by WG 12 “Filters” of CLC/TC 205A “Mains communicating systems”.

This document is currently submitted to the Enquiry.

The following dates are proposed:

• latest date by which the existence of this document has to be announced at national level	(doa)	dor + 6 months
• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	dor + 12 months
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	dor + 36 months (to be confirmed or modified when voting)

This document will supersede EN 50065-4-6:2004 and all of its amendments and corrigenda (if any).

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

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

1 Scope

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

Phase couplers are used to control the coupling of communication signals between phases or sections of a mains communication system.

This document defines

— the requirements to ensure a minimum coupling between the phases or sections of a mains communication system, and

— the requirements to ensure no change on the safety of the electrical installation.

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 50065-1, *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*

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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 50065-1, EN 50065-4-1 and the following apply.

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 http://www.electropedia.org/

3.1
phase terminal
PT
connection to a phase conductor of the electrical installation in which the phase coupler is used

3.2
neutral terminal
NT
connection to a neutral conductor of the electrical installation in which the phase coupler is used (may or may not be provided)

3.3
mains frequency leakage current
r.m.s. value of any mains frequency current flowing between phase terminals

4 Classification

4.1 General

The classification is made according to the “mains frequency leakage current” of the phase coupler.

4.2 Type 1: standard type

The coupling may be achieved with suitable capacitors. Due to significant mains frequency leakage current the use of this type of phase coupler may be limited for safety reasons.

4.3 Type 2: low leakage type

The coupling may be achieved using a transformer.

5 Phase coupler electrical characteristics

5.1 General

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

5.2 Immunity for EMC

The phase coupler shall meet the immunity requirements specified in:

— EN 50065-2-1 for phase coupler in residential, commercial and light industrial environments,

— EN 50065-2-2 for phase coupler in industrial environments,

— EN 50065-2-3 for phase coupler in the utility networks.

5.3 Mains frequency leakage current

The mains frequency leakage current, at the nominal voltage, is measured according to Figure 1. All terminals of the phase coupler are connected to the appropriate voltage, except one phase terminal that is connected to neutral through a gauge.

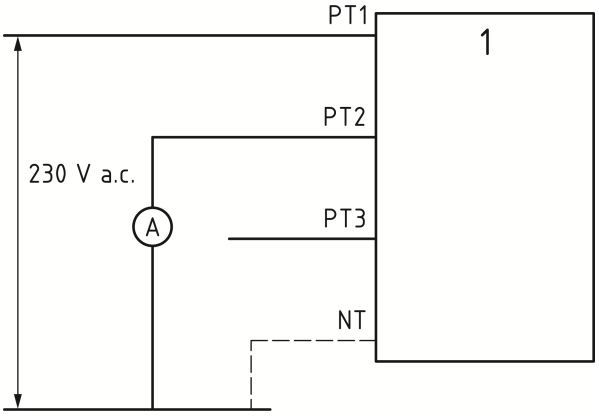

Figure 1 — Mains frequency leakage current test set up

NOTE 1 This measurement is repeated for all phase terminals provided by the phase coupler.

NOTE 2 For multiport/multiphase device, each phase port is tested independently.

The mains frequency leakage current of the phase coupler shall not exceed the following limits:

Table 1 — Mains frequency leakage current limits

Type of phase coupler	Mains frequency leakage current (r.m.s. value)
Type 1	**0,5 mA**
Type 2	**200 µA**

5.4 Operating frequency range

The operating frequency range of the phase coupler shall be specified by the manufacturer within the relevant frequency band:

— 3 kHz to 95 kHz for utility phase couplers,

— 95 kHz to 148,5 kHz for consumer phase couplers.

5.5 Transfer function

The maximum attenuation between phase terminals, measured in the operating frequency range according to EN 50065-4-1:2001, 6.2 shall not exceed the value specified by the manufacturer.

5.6 Impedance

All active phase terminals are connected with a load having the impedance values specified in EN 50065-4-1:2001, 6.1. On one phase, the load is disconnected and the impedance is measured. The modulus of this impedance shall not be less than all resistors connected in parallel.

6 Safety

The filter shall meet the requirements given in the standard EN 50065-4-2.

Annex A
(normative)

Special national conditions

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions.

NOTE If it affects harmonization, it forms part of the European Standard or Harmonization Document.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

Clause	Special national condition
5.3	**Norway** **Add** a third note: NOTE 3 The IT power distribution system is widely used, isolated from earth with a voltage limiter and the neutral not distributed.