

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

The European Standard EN 50065-4-1:2001 has the status of a British Standard

ICS 33.040.30; 31.160; 29.240.20

National foreword

This British Standard is the official English language version of EN 50065-4-1:2001. It supersedes DD 158:1987 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PEL/205, Mains signalling, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

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**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**

Transmission de signaux sur les réseaux
électriques basse tension dans la bande
de fréquences de 3 kHz à 148,5 kHz
Partie 4-1: Filtres basse tension de
découplage - Spécification générique

Signalübertragung auf elektrischen
Niederspannungsnetzen im
Frequenzbereich 3 kHz bis 148,5 kHz
Teil 4-1: Niederspannungs-
Entkopplungsfilter -
Fachgrundspezifikation

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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 draft 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 50065-4-1 on 2000-08-01.

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) 2002-02-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2003-04-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes A and B are informative.

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

Introduction.....	4
1 Scope.....	5
2 Normative references	5
3 Definitions	6
4 Symbols and abbreviations	8
5 Requirements.....	8
5.1 Marking.....	8
5.2 Requirements of decoupling filter.....	8
6 Test method.....	9
6.1 Decoupling filter impedance	10
6.2 Transfer function	12
6.3 Leakage current.....	12
6.4 Voltage drop at 50 Hz	13
6.5 Filter added Total Harmonic distortion (THD).....	14
6.6 Power dissipation.....	14
6.7 Overcurrent, ...	14
6.8 Overvoltage / surges.....	14
6.9 Mechanical shocks.....	15
6.10Acoustical noise	15
Annex A (informative) - Coupling and propagation methods	16
Annex B (Informative) - Characteristics of consumer networks	17

Introduction

Electrical networks, in spite of being a difficult medium for data communication due to signal attenuation, noise level and coupling side impedance, are considered as a potentially important transmission medium for supporting Distribution Automation and Home and Building Electronic Systems (HBES).

In order to avoid unwanted interference among mains communication equipment transmitting on low voltage networks, a suitable device called "decoupling filter" may be installed either on the public supply network or within installations in consumers' premises.

Decoupling filter is a generic name given, for example, to incoming filter, impedance filter, segmentation filter.

This decoupling filter may be incorporated in a more complex device where optional coupling functions are included (ref. Figure 1) according to signal propagation methods described in the informative annex A.

The decoupling filter may be used:

- to limit the transmission area of wanted signals to the area in which the mains communication system operates.
- to reduce unwanted signals coming from the other side of the mains port.
- to allow simultaneous communication on both sides of the filter.
- to set a suitable impedance to the mains power ports at the signalling frequency.
- to provide a return path for the signal when needed (e.g. common mode propagation).

A decoupling filter may perform all the functions listed above or some of them.

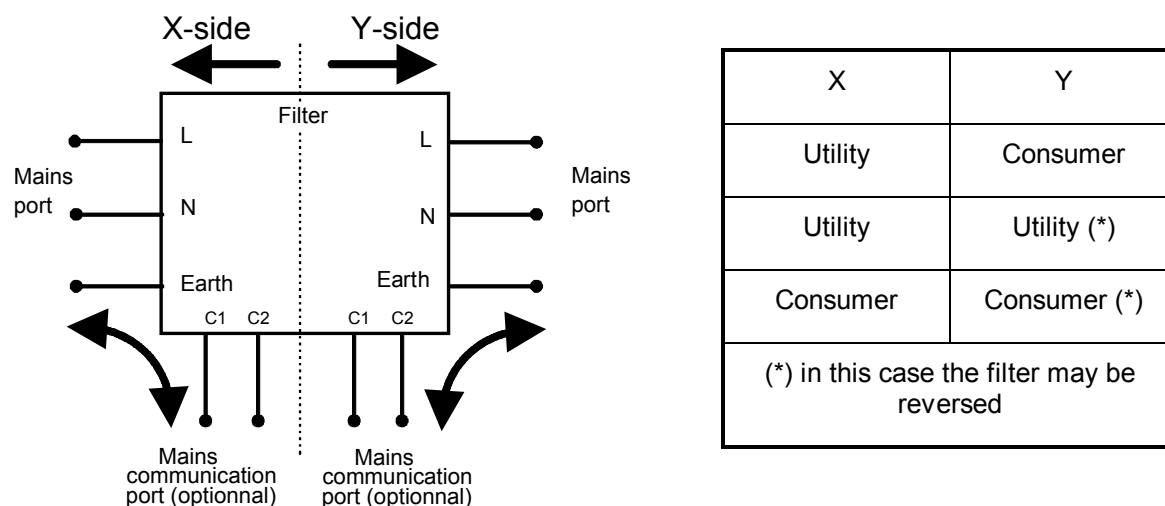


Figure 1 - Filter combined with other functions