



BSI Standards Publication

Information technology - Data centre facilities and infrastructures

Part 2-2: Power supply and distribution

National foreword

This British Standard is the UK implementation of EN 50600-2-2:2019. It supersedes BS EN 50600-2-2:2014, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee TCT/7, Telecommunications - Installation requirements.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2019
Published by BSI Standards Limited 2019

ISBN 978 0 539 00321 5

ICS 91.140.50; 35.110; 35.020

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 June 2019.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 50600-2-2

June 2019

ICS 35.020; 35.110; 91.140.50

Supersedes EN 50600-2-2:2014

English Version

**Information technology - Data centre facilities and infrastructures
- Part 2-2: Power supply and distribution**

Technologie de l'information - Installation et infrastructures
de centres de traitement de données

Informationstechnik - Einrichtungen und Infrastrukturen von
Rechenzentren - Teil 2-2: Stromversorgung

This European Standard was approved by CENELEC on 2019-04-29. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

Content

European foreword	4
Introduction	5
1 Scope	8
2 Normative references	8
3 Terms, definitions and abbreviations	9
3.1 Terms and definitions	9
3.2 Abbreviations	13
3.3 Symbols	13
4 Conformance	14
5 Power supply and distribution within data centres	14
5.1 Functional elements.....	14
5.1.1 General	14
5.1.2 Power supply to the data centre	15
5.1.3 Power distribution within the data centre	16
5.2 Dimensioning of power distribution systems	18
6 Availability	18
6.1 General requirements	18
6.2 Power supply	18
6.2.1 Capacity planning	18
6.2.2 Availability of the utility supply	20
6.2.3 Power quality	21
6.2.4 Load presented to the utility supply	22
6.2.5 Equipment.....	22
6.2.6 Availability Class design options	24
6.3 Power distribution	31
6.3.1 Capacity planning	31
6.3.2 Power quality	32
6.3.3 Equipment.....	32
6.3.4 Availability Class design options	33
6.4 Incorporation of low voltage direct current distribution	37
6.5 Additional considerations	37
6.5.1 Residual current measurement	37
6.5.2 Lightning and surge protection	37
6.5.3 Segregation of power distribution cabling and information technology cabling	37
6.6 Emergency Power Off.....	38
6.6.1 Requirements	38
6.6.2 Recommendations.....	38

7	Physical security	38
7.1	General	38
7.2	Access	38
7.2.1	Power supply	38
7.2.2	Power distribution	38
7.2.3	Attachment of unauthorised end-equipment	38
7.3	Internal environmental events.....	38
7.3.1	Power supply	38
7.3.2	Power distribution	39
7.4	External environmental events	39
8	Energy efficiency enablement and power distribution	39
8.1	General	39
8.2	Granularity Level 1.....	40
8.2.1	Requirements	40
8.2.2	Recommendations.....	40
8.3	Granularity Level 2.....	41
8.3.1	Requirements	41
8.3.2	Recommendations.....	41
8.4	Granularity Level 3.....	42
8.4.1	Requirements	42
8.4.2	Recommendations.....	42
8.5	Cabling infrastructure to support energy efficiency enablement	42
	Bibliography.....	43

European foreword

This document (EN 50600-2-2:2019) has been prepared by CLC/TC 215 “Electrotechnical aspects of telecommunication equipment”.

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) 2020-04-29
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2022-04-29

This document will supersede EN 50600-2-2:2014.

The following changes have been made:

- a) title modified to emphasize distinction between power supply and power distribution requirements;
- b) Clause 5 updated, in particular subclauses 5.1 regarding the power supply to the data centre and 5.2 on the power distribution within the data centre;
- c) availability requirements in Clause 6 revised and aligned with EN 50600-1:2018 and EN 50600-2-3:2018;
- d) physical security requirements revised, mainly regarding the power distribution in the data centre (see 7.3.2);
- e) granularity level requirements amended (see 8.2 to 8.4);
- f) Annex A removed;
- g) minor technical and editorial improvements to the whole document.

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.

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