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BSI Standards Publication

Letter symbols to be used in electrical technology

Part 2: Telecommunications and electronics

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National foreword

This British Standard is the UK implementation of EN IEC 60027-2:2019. It is identical to IEC 60027-2:2019. It supersedes BS EN 60027-2:2007, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee SS/7, General metrology, quantities, units and symbols.

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.

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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 April 2019.

Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD **EN IEC 60027-2**

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EUROPÄISCHE NORM

April 2019

ICS 01.060, 33.020

Supersedes EN 60027-2:2007

English Version

Letter symbols to be used in electrical technology - Part 2: Telecommunications and electronics (IEC 60027-2:2019)

Symboles littéraux à utiliser en électrotechnique - Partie 2: Télécommunications et électronique (IEC 60027-2:2019)

Formelzeichen für die Elektrotechnik - Teil 2: Telekommunikation und Elektronik (IEC 60027-2:2019)

This European Standard was approved by CENELEC on 2019-02-12. 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.

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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

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Ref. No. EN IEC 60027-2:2019 E

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European foreword

The text of document 25/635/FDIS, future edition 4 of IEC 60027-2, prepared by IEC/TC 25 "Quantities and units" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60027-2:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-11-12
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-02-12

This document supersedes EN 60027-2:2007.

This edition constitutes a technical revision and includes the following significant changes with respect to the previous edition:

a) former Subclauses 3.8 and 3.9 are cancelled and replaced by EN 80000-13:2008;

b) former Subclause 3.10, now 4.8, is revised in accordance with IEC 60050-192:2015;

c) former Subclause 3.11, now 4.9, is revised in accordance with IEC 60050-561:2014;

d) former Subclause 3.13, now 4.11, is revised in accordance with EN ISO 80000-8:2007,

IEC 60050-801:1994 and IEC 60050-802:2011;

e) technical and editorial corrections have been carried out, mainly in Subclause 4.1.

f) tables are simplified, mainly by deleting useless columns.

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.

Endorsement notice

The text of the International Standard IEC 60027-2:2019 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60027-3	NOTE	Harmonized as EN 60027-3
IEC 60747 (series)	NOTE	Harmonized in EN 60747 (series)
IEC 61703:2001	NOTE	Harmonized as EN 61703:2002 (not modified)
ISO 80000-1:2009	NOTE	Harmonized as EN ISO 80000-1:2013 (not modified)
ISO 80000-8:2007	NOTE	Harmonized as EN ISO 80000-8:2007 (not modified)
IEC 80000-13:2008	NOTE	Harmonized as EN 80000-13:2008 (not modified)

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(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60027-1	1992	Letters symbols to be used in electrical technology - Part 1: General		
+ A1	1997		EN 60027-1	2006
+ A2	2005		+ A2	2007

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LETTER SYMBOLS TO BE USED IN ELECTRICAL TECHNOLOGY –

Part 2: Telecommunications and electronics

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60027-2 has been prepared by IEC technical committee 25: Quantities and units.

This fourth edition cancels and replaces the third edition published in 2005. This fourth edition constitutes a technical revision.

This edition includes the following significant changes with respect to the previous edition:

a) former Subclauses 3.8 and 3.9 are cancelled and replaced by IEC 80000-13:2008;
b) former Subclause 3.10, now 4.8, is revised in accordance with IEC 60050-192:2015;
c) former Subclause 3.11, now 4.9, is revised in accordance with IEC 60050-561:2014;
d) former Subclause 3.13, now 4.11, is revised in accordance with ISO 80000-8:2007, IEC 60050-801:1994 and IEC 60050-802:2011;
e) technical and editorial corrections have been carried out, mainly in Subclause 4.1.
f) tables are simplified, mainly by deleting useless columns.

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The text of this standard is based on the following documents:

FDIS	Report on voting
25/635/FDIS	25/640/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60027 series, published under the general title *Letter symbols to be used in electrical technology*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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LETTER SYMBOLS TO BE USED IN ELECTRICAL TECHNOLOGY –

Part 2: Telecommunications and electronics

1 Scope

This part of IEC 60027 is applicable to telecommunications and electronics. It gives names and symbols for quantities and their units.

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.

IEC 60027-1:1992*, Letter symbols to be used in electrical technology – Part 1: General*
IEC 60027-1:1992/AMD1:1997
IEC 60027-1:1992/AMD2:2005

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:

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

4 Introduction to tables

In this part of IEC 60027, complex quantities are in general denoted by underlining their symbols. However, this does not constitute a compulsory rule in applications (see IEC 60027-1).

To avoid any ambiguity, some quantity names are followed by a specific use, enclosed in angle brackets "<...>" after a comma.

When several symbols are indicated for a given quantity, the first is the preferred symbol and the others are reserve symbols, unless otherwise stated.

When several units are indicated for a given quantity, the first is the coherent SI unit, unless otherwise stated. For logarithmic ratios, the first mentioned unit is the decibel.

For quantities defined as a logarithm of the ratio of two power quantities or two root-power quantities (also known as field quantities), the submultiple decibel (dB) of the bel (B) is generally used, rather than the neper (Np). The bel is not explicitly mentioned in the tables. See IEC 60027-3 and ISO 80000-1:2009, Annex C.