

Low-voltage power supply devices, d.c. output — Performance characteristics

The European Standard EN 61204:1995 with the incorporation of
A1:2001 has the status of a British Standard

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee PEL/22, Static power convertor equipment, upon which the following bodies were represented:

- Association of Consulting Engineers
- Electricity Association
- Engineering Equipment and Materials Users' Association
- GAMBICA (BEAMA Ltd.)
- Institution of Electrical Engineers
- Institution of Incorporated Executive Engineers
- Power Supply Manufacturers' Association [PSMA (BEAMA Ltd.)]
- Railway Industry Association
- Transmission and Distribution Association (BEAMA Ltd.)

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- Energy Industries Council
- Federation of the Electronics Industry

This British Standard, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 August 1995

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Amendments issued since publication

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National foreword

This British Standard has been prepared by Technical Committee PEL/22 and is the English language version of EN 61204:1995 *Low-voltage power supply devices, d.c. output — Performance characteristics and safety requirements*, including amendment A1:2001, published by the European Committee for Electrotechnical Standardization (CENELEC). It was derived by CENELEC from IEC 61204:1993, Edition 1.1:2001, which comprises Edition 1:1993 consolidated by the incorporation of amendment 1:2001.

The CENELEC common modifications have been implemented at the appropriate places in the text and are indicated by a side line in the margin. Parts of the original IEC text that have been modified by CENELEC have been quoted in National Annex NA.

The foreword of the EN makes reference to the “date of withdrawal”, *dow*, of the relevant national standard. In this case the relevant national standard is BS 6688:1986 which will be withdrawn on 1995-12-01. Certificates and marks will not be awarded after this date with respect to the withdrawn British Standard. However such certificates and marks, already awarded, may continue to apply to production until 2000-12-01.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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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Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, the EN title page, pages 2 to 27 and a back cover.

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Descriptors: Electrical power supply, low voltage, performance evaluation, safety, overvoltage protection, overcurrent protection, tests

English version

Low-voltage power supply devices, d.c. output — Performance characteristics

(includes amendment A1:2001)
(IEC 61204:1993, modified + A1:2001)

Dispositifs d'alimentation à basse tension,
à sortie en courant continu —
Caractéristiques de fonctionnement
(inclut l'amendement A1:2001)
(CEI 61204:1993 + A1:2001, modifiée)

Stromversorgungsgeräte für Niederspannung
mit Gleichstromausgang Eigenschaften
(enthält Änderung A1:2001)
(IEC 61204:1993 + A1:2001, modifiziert)

This European Standard was approved by CENELEC on 1994-12-06. Amendment A1:2001 was approved by CENELEC on 2001-03-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Foreword

The text of the International Standard IEC 1204:1993, prepared by SC 22E, Stabilized power supplies, of IEC TC 22, Power electronics, together with common modifications prepared by CENELEC BTTF 64-2, was submitted to the formal vote and was approved by CENELEC as EN 61204 on 1994-12-06.

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) 1995-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1995-12-01

For products which have complied with the relevant national standard before 1995-12-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2000-12-01.

Annexes designated “normative” are part of the body of the standard. In this standard, Annex A, Annex B, Annex C, Annex D and Annex ZA are normative. Annex ZA has been added by CENELEC.

Foreword to amendment A1

The text of document 22E/77/FDIS, future amendment 1 to IEC 61204:1993, prepared by SC 22E, Stabilized power supplies, of IEC TC 22, Power electronics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 61204:1995 on 2001-03-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2001-12-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2004-03-01

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INTRODUCTION

This International Standard, based on the British Standard BS6688: 1986, has been reworked and extended to take into account existing and forthcoming IEC standards. With regard to safety, there was close collaboration with IEC technical committee 74, working group 6: Safety requirements for power supplies.

LOW-VOLTAGE POWER SUPPLY DEVICES, DC OUTPUT – PERFORMANCE CHARACTERISTICS

1 General

1.1 Scope and object

This international Standard describes a method for specifying requirements for low-voltage power supply devices (including switching types) providing d.c. output(s) up to 200 V d.c. at a power level of up to 30 kW, operating from a.c. or d.c. source voltages of up to 600 V. The devices are for use within class I equipment or for free-standing operation when used with adequate electrical and mechanical protection.

This standard is intended to be used for all types of a.c. or d.c. driver power supplies with any number of outputs, specially produced for an unknown final application.

In the case where power supplies are developed as a component of equipment covered by specific product standards, these standards apply; the additional application of IEC 61204 may be useful as an option, especially if the performance characteristics are not sufficiently covered by the product standard.

It permits to specify a power unit to meet a particular application by the specification of parameters at required performance levels, to establish the essential definitions related to this type of equipment, and to establish a selection of levels of performance. These levels are carefully graded to enable manufacturers and users to select and specify a range of power supply devices suitable for their application.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently International Standards.

IEC 60038:1983, *IEC standard voltages*

IEC 60068: *Environmental testing*

IEC 60068-2-1:1990, *Environmental testing – Part 2: Tests – Tests A: Cold*

IEC 60068-2-2:1974, *Environmental testing – Part 2: Tests – Tests B: Dry heat*

IEC 60068-2-3:1969, *Environmental testing – Part 2: Tests – Test Ca: Damp heat, steady state*

IEC 60068-2-6:1982, *Environmental testing – Part 2: Tests – Test Fc and guidance: Vibration (sinusoidal)*

IEC 60068-2-27:1987, *Environmental testing – Part 2: Tests – Test Ea and Guidance: Shock*

IEC 60068-2-29:1987, *Environmental testing – Part 2: Tests – Test Eb and Guidance: Bump*

IEC 60478: *Stabilized power supplies, d.c. output*

IEC 60478-1:1974, *Stabilized power supplies, d.c. output – Part 1: Terms and definitions*

IEC 60478-2:1986, *Stabilized power supplies, d.c. output – Part 2: Rating and performance*

IEC 60478-3:1989, *Stabilized power supplies, d.c. output – Part 3: Reference levels and measurement of conducted electromagnetic interference (EMI)*

IEC 60478-4:1976, *Stabilized power supplies, d.c. output – Part 4: Tests other than radio-frequency interference*

IEC 60478-5:1993, *Stabilized power supplies, d.c. output – Part 5: Measurement of the magnetic component of the reactive near field*

IEC 60651:1979, *Sound level meters*

IEC 60664-1:1992, *Insulation co-ordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60721: *Classification of environmental conditions*

IEC 60721-3-1:1987, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities. Storage*

IEC 60721-3-2:1985, *Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities. Transport*

IEC 60801: *Electromagnetic compatibility for industrial-process measurement and control equipment*

IEC 60801-4:1988, *Electromagnetic compatibility for industrial-process measurement and control equipment – Part 4: Electrical fast transient/burst requirements*

IEC 60950:1991, *Safety of information technology equipment, including electrical business equipment*

MIL-HDBK-217E:1974, *Reliability prediction of electronic equipment*

1.3 Definitions

For the purpose of this International Standard the definitions given in IEC 60950 and IEC 60478-1 apply, except where redefined in this standard.