

Stabilized power supplies, d.c. output —

Part 2: Method of specifying rating and performance

[IEC title: Part 2: Rating and performance]

UDC 621.311.024:621.316.721/.722.1

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents

AVA

Document Sharing Hub

Cooperating organizations

The Power Electrical Engineering Standards Committee, under whose direction this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations.

- Associated Offices Technical Committee
- Association of Short Circuit Testing Authorities
- British Electrical and Allied Manufacturers' Association (BEAMA)*
- British Railways Board*
- British Steel Corporation
- Department of Energy, Electricity
- Electrical Contractors' Association
- Electrical Contractors' Association of Scotland
- Electrical Research Association*
- Electricity Supply Industry in England and Wales*
- Engineering Equipment Users' Association*
- Institute of Purchasing and Supply
- Institution of Electrical Engineers
- Ministry of Defence
- National Coal Board*
- Trades Union Congress

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- Accumulator Makers' Association
- Association of Consulting Engineers
- Association of Supervisory and Executive Engineers
- British Steel Industry
- Control and Automation Manufacturers' Association (BEAMA)
- Electric Vehicle Association of Great Britain
- Electronic Components Industry Federation
- Electronic Engineering Association
- Home Office
- London Transport Executive
- Post Office
- Scientific Instrument Manufacturers' Association

This British Standard, having been prepared under the direction of the Power Electrical Engineering Standards Committee, was published under the authority of the Executive Board and comes into effect on 28 February 1979

© BSI 10-1999

The following BSI references relate to the work on this standard:
Committee reference PEL/50
Draft for comment 77/28035 DC

ISBN 0 580 10466 4

Amendments issued since publication

Amd. No.	Date of issue	Comments

Contents

	Page
Cooperating organization	Inside front cover
National foreword	ii
1 Marking	1
2 Specification of performance	1
2.1 Operating conditions	1
2.2 Required rating data	1
2.3 Optional rating data	1
2.4 Limit influence ratings	3
2.5 Performance ratings	3
3 Physical characteristics	3
3.1 Dimensions	3
3.2 Mass	4
3.3 Mounting position	4
Table I — Required rating data	2
Table II — Optional rating data	3
Table III — Performance ratings	4
Publications referred to	Inside back cover

National foreword

This British Standard has been prepared under the direction of the Power Electrical Engineering Standards Committee. It is identical with Publication 478-2:1975 “*Stabilized power supplies, d.c. output*” Part 2 “*Rating and performance*” published by the International Electrotechnical Commission (IEC).

The scope of this publication is as follows.

This standard applies to stabilized power supplies designed to supply d.c. power from an a.c. or d.c. source for applications such as, but not necessarily limited to, the following:

- computers
- telecommunications
- laboratories
- industrial equipment

Calibrated stabilized power supplies for electrical measurement purposes are excluded from the scope of this standard.

This Part gives methods of specifying rating and performance of such power supplies.

Cross-references. For each of the following International Standards referred to in the text, there is a corresponding British Standard; these are as listed below.

International Standard	Corresponding British Standard
IEC Publication 179:1973	BS 4197:1967, as amended by AMD 1871:1976 <i>A precision sound level meter</i> (Technically equivalent) BS 5654 <i>Stabilized power supplies, d.c. output</i>
IEC Publication 478-1:1974	Part 1:1978 <i>Terms and definitions</i> (Identical)
IEC Publication 478-4:1976	Part 4:1978 <i>Tests other than radio-frequency interference</i> (Identical)

NOTE *Textual errors.* At the time IEC Publication 478-2 was approved, IEC Publication 478-4 was in course of preparation and the published version of that document included a change in the numbering of clauses. In consequence, the references in Table III of this standard to the sub-clauses of IEC Publication 478-4 are incorrect. To obtain the correct references, the first figure, “4”, should be deleted in each case and the following number used as the identification of the appropriate section of Publication 478-4. Taking item 1.1 of Table III as an example, the performance test reference of “4.12” should be identified as section 12 of Publication 478-4.

This discrepancy has been reported to the IEC.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Marking

The following information shall be permanently affixed to the power supply:

- a) name of manufacturer or supplier;
- b) model number;
- c) serial number (optional);
- d) output ratings: rated values or rated ranges of values for output voltage and current;
- e) input ratings: nominal values for source voltage, source current and frequency, number of phases;
- f) protection class.

2 Specification of performance

The performance of a stabilized power supply shall comply with the specified values of the quantities listed in the manufacturers' data sheet or other documents mutually agreed on by the manufacturer and user.

2.1 Operating conditions

Different performance ratings are valid under different operating conditions. These conditions are defined by different sets of values or ranges of values of the influence quantities and the stabilized output quantity. The following sub-clauses define three conditions.

2.1.1 Reference conditions

Reference conditions are defined by values or ranges of values for the influence quantities and the stabilized output quantity which reflect typical operating conditions.

Reference conditions serve:

- a) as conditions under which the intrinsic error may be determined (Tolerance I);
- b) as specific conditions for the validity of performance specifications which need not be known or verified under rated conditions (Tolerance G).

The widened tolerances which typically apply to case of item b) relate to the initial setting of the quantities and may not be construed to denote permissible changes during the measurement.

2.1.2 Rated conditions

Rated conditions are defined by simultaneously applicable rated ranges of values for the influence quantities and the stabilized output quantity over which the stabilized power supply is intended to operate and remain within its performance specifications.

2.1.3 Limit conditions

Limit conditions are defined by a limiting range of values for one influence quantity and rated ranges of values for the other influence quantities and the stabilized output quantity which can be tolerated by the stabilized power supply without damage, but within which it does not necessarily meet all performance specifications.

If limiting ranges of values are indicated for more than one influence quantity, they shall be permitted only on an individual basis, unless otherwise stated.

2.2 Required rating data

Nominal values or rated ranges for the quantities listed in Table I are required rating data.

Table I indicates further:

- a) which value is to serve as reference, and which tolerances apply thereto, depending on the intention for which reference conditions are established;
- b) which ratings may be assumed to constitute rated conditions in the absence of an explicit statement.

Rated conditions as listed in Table I are required ratings.

2.3 Optional rating data

The additional influence quantities listed in Table II may be of functional importance in unusual environments or when a stabilized power supply is particularly susceptible to them. The reference values and ratings recommended for this case are given in Table II; they constitute optional rating data.