Australian Standard®

Adjustable speed electrical power drive systems

Part 1: General requirements—Rating specifications for low voltage adjustable speed d.c. power drive systems

This Australian Standard® was prepared by Committee EL-027, Power Electronics. It was approved on behalf of the Council of Standards Australia on 29 June 2007.
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The following are represented on Committee EL-027:

- Australian Communications and Media Authority
- Australian Electrical and Electronic Manufacturers Association
- Bureau of Steel Manufacturers of Australia
- Department of Defence (Australia)
- Energy Networks Association
- Monash University

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-027, Power Electronics.

The objective of this Standard is to provide designers, manufacturers, specifiers, purchasers and users of variable speed drive systems with a set of characteristics to define variable speed d.c. drives.

This Standard is identical with, and has been reproduced from IEC 61800-1, Ed.1.0 (1997), *Adjustable speed electrical power drive systems—Part 1: General requirements—Rating specifications for low voltage adjustable speed d.c. power drive systems*.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'IEC 61800-1' should read 'AS 61800.1'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

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1 General

1.1 Scope and object

This part of IEC 61800 applies to general purpose adjustable speed d.c. drive systems which include the power conversion, control equipment, and also a motor or motors. Included are traction and electrical vehicle drives.

It applies to power drive systems (PDS) connected to line voltages up to 1 kV a.c., 50 Hz or 60 Hz.

EMC aspects are covered in IEC 61800-3.

This part of IEC 61800 gives the characteristics of the converters and their relationship with the complete d.c. drive system. It also states their performance requirements with respect to ratings, normal operating conditions, overload conditions, surge withstand capabilities, stability, protection, a.c. line earthing, and testing. Furthermore, it deals with application guidelines, such as control strategies, diagnostics, and topologies.

This part of IEC 61800 is intended to define a complete d.c. PDS in terms of its performance and not in terms of individual subsystem functional units.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61800. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 61800 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 valid International Standards.

References to international standards that are struck through in this clause are replaced by references to identical Australian Standards that are listed immediately thereafter and identified by shading.

~~IEC 60034-1:1994, *Rotating electrical machines – Part 1: Rating and performance*~~

AS 1359.101, *Rotating electrical machines—General requirements,* Part 101: *Rating and performance* (identical to IEC 60034-1:1996)

IEC 60034-2: 1972, *Rotating electrical machines – Part 2: Methods for determining losses and efficiency of rotating electrical machinery from tests (excluding machines for traction vehicles)*

~~IEC 60034-9:1990, *Rotating electrical machines – Part 9: Noise limits*~~

AS 1359.109, *Rotating electrical machines—General requirements,* Part 109: *Noise limits*

~~IEC 60038:1983, *IEC standard voltages*~~