AS 61800.3—2001
IEC 61800.3:1996

Australian Standard™

Adjustable speed electrical power drive systems

Part 3: EMC product standard including specific test methods

Standards Australia

This Australian Standard was prepared by Committee EL-027, Power Electronics. It was approved on behalf of the Council of Standards Australia on 17 September 2001 and published on 16 November 2001.

The following interests are represented on Committee EL-027:

Australian Communications Authority

Australian Electrical and Electronic Manufacturers Association

Bureau of Steel Manufacturers of Australia

Department of Defence (Australia)

Electricity Supply Association of Australia

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 manufacturers, regulators, test laboratories and users with electromagnetic compatibility (EMC) requirements for electrical power drives.

This Standard has been reproduced from IEC 61800-3:1996, *Adjustable speed electrical power drive systems,* Part *3: EMC product standard including specific test methods*. Some minor editorial changes have been made.

In January 1997, the IEC commenced numbering its Standards from 60000 by adding 60000 to the number of each existing Standard. This coordinates IEC numbering with ISO numbering. During the transition period an IEC Standard might be identified by its new number or its old number (for example, IEC 60050 or IEC 50).

A reference to an International Standard identified in the Normative References Clause by strikethrough (~~example~~) is replaced by a reference to the Australian or Australian/New Zealand Standard(s) listed immediately thereafter and identified by shading (example). Where the struck-through referenced document and the referenced Australian or Australian/New Zealand Standard are identical, this is indicated in parenthesis after the title of the latter.

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 ‘this standard’ should read ‘this Australian Standard’.

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

The term ‘informative’ has been used in this Standard to define the application of the annex to which it applies. An ‘informative’ annex is only for information and guidance.

CONTENTS

Page

Clause

Page

Annexes

STANDARDS AUSTRALIA

Australian Standard

Adjustable speed electrical power drive systems

Part 3: EMC product standard including specific test methods

1 Scope and object

This International Standard specifies electromagnetic compatibility (EMC) requirements for power drive systems (PDSs). These are adjustable speed a.c. or d.c. motor drives. Requirements are stated for PDSs which are connected to mains supplies with a rated voltage of up to 1 000 V a.c. r.m.s. For supply voltages higher than 1 000 V a.c. r.m.s. EMC requirements are under consideration and, until a new publication is produced, they will result from agreement between manufacturer/supplier and user.

PDSs covered by this standard are those installed in industrial and residential environments with the exception of traction applications and electric vehicles. PDSs may be connected to either industrial or public power distribution networks. Industrial networks are supplied by a dedicated distribution transformer, which is usually adjacent to or inside the industrial location, and supplies only industrial customers. On the other hand, PDSs can be directly connected to low-voltage public mains networks which also supply domestic premises, and in which the neutral is generally earthed (grounded).

PDSs covered by this standard are often included in a larger system, the system aspect is not covered by this standard, but guidance is provided in the informative annexes.

The requirements have been selected so as to ensure an adequate level of electromagnetic compatibility (EMC) for PDSs in industrial and public locations. The levels cannot, however, cover extreme cases which are most unlikely to occur. Changes in the EMC behaviour of a PDS, as a result of fault conditions, are not taken into account.

The object of this standard is to define the limits and test methods for a PDS. It includes immunity requirements and requirements against electromagnetic emissions. Emission can cause interference in other electronic equipment (for example radio receivers, measuring and computing devices). Immunity is required to protect the equipment from continuous and transient conducted and radiated disturbances, including electrostatic discharges. For evident economic reasons, the emission and immunity requirements should be balanced against each other and against the actual environment of the PDS.

This standard defines the minimum electromagnetic compatibility requirements for a PDS.

This standard does not specify all safety requirements for the equipment, such as protection against electric shocks, insulation co-ordination and related dielectric tests, unsafe operation, or unsafe consequences of a failure.

In special cases, when highly susceptible apparatus is being used in proximity, additional mitigation measures may have to be employed to reduce the electromagnetic emission further below the specified levels, or to increase the immunity of the highly susceptible apparatus.