AS/NZS IEC/TR 61000.2.8:2009
IEC/TR 61000-2-8, Ed. 1.0 (2002)

AS/NZS IEC/TR 61000.2.8:2009

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 2.8: Environment—Voltage dips and short interruptions on public electric power supply systems with statistical measurement results

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-034, Power Quality. It was approved on behalf of the Council of Standards Australia on 3 June 2009 and on behalf of the Council of Standards New Zealand on 19 June 2009.
This Standard was published on 15 July 2009.

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This Standard was issued in draft form for comment as DR AS/NZS IEC/TR 61000.2.8.

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First published as AS/NZS IEC/TR 61000.2.8:2009.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 9198 0

PREFACE

This Technical Report was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-034, Power Quality. This document is informative and of a more descriptive nature than a normative Standard.

The objective of this Technical Report is to provide the users of electromagnetic emissions Standards with a description of the electromagnetic disturbance phenomena that can be expected on public electricity supply systems, and their effects on electrical equipment when subjected to voltage dips and short interruptions. It includes some statistical measurement results as a general reference.

This Technical Report is identical with, and has been reproduced from IEC/TR 61000-2-8, Ed. 1.0 (2002), *Electromagnetic compatibility (EMC)—Part 2.8: Environment—Voltage dips and short interruptions on public electric power supply systems with statistical measurement results.*

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example ‘state of the art’.

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

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

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INTRODUCTION

IEC 61000 is published in separate parts according to the following structure:

Part 1: General

General considerations (introduction, fundamental principles)

Definitions, terminology

Part 2: Environment

Description of the environment

Classification of the environment

Compatibility levels

Part 3: Limits

Emission limits

Immunity limits (in so far as they do not fall under the responsibility of the product committees)

Part 4: Testing and measurement techniques

Measurement techniques

Testing techniques

Part 5: Installation and mitigation guidelines

Installation guidelines

Mitigation methods and devices

Part 6: Generic standards

Part 9: Miscellaneous

Each part is further subdivided into several parts, published either as International Standards, technical specifications or technical reports, some of which have already been published as sections. Others will be published with the part number followed by a dash and completed by a second number identifying the subdivision (example: 61000-6-1).

Detailed information on the various types of disturbances that can be expected on public power supply systems can be found in IEC 61000-2-1.

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1 Scope

This technical report describes the electromagnetic disturbance phenomena of voltage dips and short interruptions in terms of their sources, effects, remedial measures, methods of measurement, and measurement results (in so far as these are available). They are discussed primarily as phenomena observed on the networks of public electricity supply systems and having an effect on electrical equipment receiving its energy supply from those systems.

“Voltage sag” is an alternative name for the phenomenon voltage dip.

2 Definitions

2.1
voltage dip
voltage sag
sudden reduction of the voltage at a particular point on an electricity supply system below a specified dip threshold followed by its recovery after a brief interval

NOTE 1 Typically a dip is associated with the occurrence and termination of a short circuit or other extreme current increase on the system or installations connected to it.

NOTE 2 A voltage dip is a two-dimensional electromagnetic disturbance, the level of which is determined by both voltage and time (duration).

2.2
short interruption
sudden reduction of the voltage on all phases at a particular point on an electricity supply system below a specified interruption threshold followed by its restoration after a brief interval

NOTE Short interruptions are typically associated with switchgear operation related to the occurrence and termination of short circuits on the system or installations connected to it.

2.3
(voltage dip) reference voltage
<measurement of voltage dips and short interruptions>
value specified as the base on which depth, thresholds and other values are expressed in per unit or percentage terms

NOTE The nominal or declared voltage of the supply system is frequently selected as the reference voltage.

2.4
voltage dip start threshold
<voltage dip measurement>
r.m.s. value of the voltage on an electricity supply system specified for the purpose of defining the start of a voltage dip

NOTE Typically values between 0,85 and 0,95 of the reference voltage have been used for this threshold.