



# **MALAYSIAN STANDARD**

**MS 61000-4-11:2015**

**Electromagnetic compatibility (EMC) -  
Part 4-11: Testing and measurement  
techniques - Voltage dips, short interruptions  
and voltage variations immunity tests  
(Second revision)  
(IEC 61000-4-11:2004, MOD)**

**ICS: 33.100.20**

Descriptors: electromagnetic compatibility, testing, measurement, voltage dips, short interruptions,  
voltage variations immunity tests

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## Committee representation

The Industry Standards Committee on Generation, Transmission and Distribution of Energy (ISC E) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

Association of Consulting Engineers Malaysia  
Atomic Energy Licensing Board  
Department of Standards Malaysia  
Federation of Malaysian Manufacturers  
Jabatan Kerja Raya Malaysia  
Malaysian Cable Manufacturers Association  
Malaysian Electrical Appliances and Distributors Association  
Malaysian Green Technology Corporation  
Ministry of Domestic Trade, Co-operatives and Consumerism  
Ministry of International Trade and Industry  
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Suruhanjaya Tenaga  
Tenaga Nasional Berhad  
The Electrical and Electronics Association of Malaysia  
The Institution of Engineers, Malaysia  
Universiti Malaya  
Universiti Teknologi Malaysia

The Technical Committee on Power Quality which recommended the adoption of the IEC Standard as Malaysian Standard consists of representatives from the following organisations:

Association of Consulting Engineers Malaysia  
Federation of Malaysian Manufacturers  
Jabatan Kerja Raya Malaysia  
Petroleum Nasional Berhad  
Sarawak Electrical Inspectorate Unit  
SIRIM Berhad (Secretariat)  
SIRIM QAS International Sdn Bhd  
Suruhanjaya Tenaga  
Syarikat SESCO Berhad  
Tenaga Nasional Berhad (Distribution Division)  
The Electrical and Electronics Association of Malaysia  
The Institution of Engineers, Malaysia  
TNB Research Sdn Bhd  
Universiti Teknologi Malaysia (Centre of Electrical Energy Systems)  
Universiti Teknologi MARA

## National foreword

The adoption of the IEC Standard as a Malaysian Standard was recommended by the Technical Committee on Power Quality under the authority of the Industry Standards Committee on Generation, Transmission and Distribution of Energy.

This Malaysian Standard is a modified adoption of IEC 61000-4-11:2004, *Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests*, published by the International Electrotechnical Commission (IEC) with the following modifications:

- a) in the source text, "this International Standard" should read "this Malaysian Standard";
- b) the comma which is used as a decimal sign (if any), to read as a point;
- c) the basis IEC 61000-4-11 is printed in English and French versions. However, only the English version is retained for this Malaysian Standard;

d) **Clause/Subclause** **Modifications**

Table 1 Preferred test level and durations for voltage dips Replace with new Table 1 where inclusion of new Class 4, as below:

**Table 1. Preferred test level and durations for voltage dips**

Class <sup>a</sup>	Test level and durations for voltage dips (t <sub>s</sub> ) (50Hz/60Hz)				
Class 1	Case-by-case according to the equipment requirements				
Class 2	0 % during 1/2 cycle	0 % during 1 cycle	70 % during 25/30 <sup>c</sup> cycles		
Class 3	0 % during 1/2 cycle	0 % during 1 cycle	40 % during 10/12 <sup>c</sup> cycles	70 % during 25/30 <sup>c</sup> cycles	80 % during 250/300 <sup>c</sup> cycles
Class 4 <sup>d</sup>	0 % during 1/2 cycle	0 % during 1 cycle	50 % during 10/12 <sup>c</sup> cycles	70 % during 25/30 <sup>c</sup> cycles	80 % during 250/300 <sup>c</sup> cycles
Class X <sup>b</sup>	X	X	X	X	X
<sup>a</sup> Classes per IEC 61000-2-4; see Annex B. <sup>b</sup> To be identified by product committee. For equipment connected directly or indirectly to the public network, the levels must not be less severe than Class 2. <sup>c</sup> "25/30 cycles" means "25 cycles for 50 Hz test" and "30 cycles for 60 Hz test". "250/300 cycles" means "250 cycles for 50 Hz test" and "300 cycles for 60 Hz test". <sup>d</sup> Class 4 is as explained in the National foreword.					

**Explanation:** Inclusion of new Class 4 test level is proposed for testing against voltage dip, voltage variation and short interruption compliance, where the voltage level is between 20 ms and 200 ms.

**National foreword** *(continued)*

- e) reference to International Standards should be replaced by corresponding Malaysian Standards as follows:

Referenced International Standards

IEC 61000-2-8, *Electromagnetic compatibility (EMC) - Part 2-8: Environment - Voltage dips and short interruptions on public electric power supply systems with statistical measurement results*

IEC 61000-4-14, *Electromagnetic compatibility (EMC) - Part 4-14: Testing and measurement techniques - Voltage fluctuation immunity test*

Corresponding Malaysian Standards

MS IEC 61000-2-8, *Electromagnetic compatibility (EMC) - Part 2-8: Environment - Voltage dips and short interruptions on public electric power supply systems with statistical measurement results*

MS IEC 61000-4-14, *Electromagnetic compatibility (EMC) - Part 4-14: Testing and measurement techniques - Voltage fluctuation immunity test*

This Malaysian Standard cancels and replaces MS IEC 61000-4-11:2005, *Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement methods - Voltage dips, short interruptions and voltage variations immunity tests (First revision)*.

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

NOTE. MOD on the front cover indicates a modified standard i.e. a standard adapted from an International Standard with permitted technical deviations, which are clearly identified and explained. The changes in structure are permitted provided that the altered structure permits easy comparison of the content of the two standards. Modified standards also include the changes permitted under identical correspondence.

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**ELECTROMAGNETIC COMPATIBILITY (EMC) –**

**Part 4-11: Testing and measurement techniques –  
Voltage dips, short interruptions and  
voltage variations immunity tests**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61000-4-11 has been prepared by subcommittee 77A: Low frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

This second edition cancels and replaces the first edition published in 1994 and its amendment 1 (2000). This second edition constitutes a technical revision in which

- 1) preferred test values and durations have been added for the different environment classes;
- 2) the tests for the three-phase systems have been specified.

It forms part 4-11 of IEC 61000. It has the status of a Basic EMC Publication in accordance with IEC Guide 107.

The text of this standard is based on the following documents:

FDIS	Report on voting
77A/452/FDIS	77A/455/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until 2008. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

The contents of the interpretation sheet 1 of August 2010 have been included in this copy.