



# MALAYSIAN STANDARD

MS IEC 62271-1:2009

## HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR - PART 1: COMMON SPECIFICATIONS (FIRST REVISION) (IEC 62271-1:2007, IDT)

IEC 62271-1:2007 is endorsed as Malaysian Standard with the reference number MS IEC 62271-1:2009.

ICS: 29.130.10, 29.130.99

Descriptors: high-voltage switchgear, controlgear, common specifications

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## Committee representation

The Industry Standards Committee on Electrotechnical-1 (ISC E) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

Association of Consulting Engineers Malaysia  
Department of Standards Malaysia  
Federation of Malaysian Consumers Association  
Federation of Malaysian Manufacturers  
Jabatan Kerja Raya Malaysia  
Malaysian Association of Standards Users  
Malaysian Cable Manufacturers Association  
Malaysian Electrical Appliances and Distribution Association  
Ministry of Domestic Trade and Consumer Affairs  
Ministry of International Trade and Industry  
Persatuan Kontraktor Elektrikal dan Mekanikal Melayu Malaysia  
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Suruhanjaya Komunikasi dan Multimedia Malaysia  
Suruhanjaya Tenaga  
Tenaga Nasional Berhad  
The Electrical and Electronics Association of Malaysia  
The Institution of Engineers, Malaysia  
Universiti Teknologi Malaysia

The Working Group on High Voltage Switchgear, Controlgear and Assemblies which recommended the adoption of the IEC Standard consists of representatives from the following organisations:

Association of Consulting Engineers Malaysia  
Federation of Malaysian Manufacturers  
Jabatan Kerja Raya Malaysia  
Petroleum Nasional Berhad  
SIRIM Berhad (Secretariat)  
Suruhanjaya Tenaga  
TAMCO Corporate Holdings Sdn Bhd  
Tenaga Nasional Berhad (Generation Division)  
Tenaga Nasional Berhad (Transmission Division)  
The Electrical and Electronics Association of Malaysia  
The Institution of Engineers, Malaysia  
TNB Research Sdn Bhd  
Universiti Malaya  
Universiti Teknologi Malaysia

# MS IEC 62271-1:2009

## NATIONAL FOREWORD

The adoption of the IEC Standard as a Malaysian Standard was recommended by the Working Group on High Voltage Switchgear, Controlgear and Assemblies under the authority and of the Industry Standards Committee on Electrotechnical-1.

This Malaysian Standard is the first revision of MS 1781, *Common specifications for high-voltage switchgear and controlgear standards* and MS IEC 60694, *Common specifications for high-voltage switchgear and controlgear standards*.

This Malaysian Standard is identical with IEC 62271-1:2007, *High-voltage switchgear and controlgear - Part 1: Common specifications*, published by the International Electrotechnical Commission (IEC). However, for the purposes of this Malaysian Standard, the following apply:

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

### Referenced International Standards

### Corresponding Malaysian Standards

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

MS IEC 60034-1, *Rotating electrical machines - Part 1: Rating and performance*

IEC 60038, *IEC Standard voltages*

MS IEC 60038, *IEC Standard voltages*

IEC 60050-551, *International Electrotechnical Vocabulary (IEV) - Power electronics*

MS IEC 60050-551, *International Electrotechnical Vocabulary (IEV) - Power electronics*

IEC 60060-1:1989, *High-voltage test techniques - Part 1: General definitions and test requirements*

MS IEC 60060-1:2008, *High-voltage test techniques - Part 1: General definitions and test requirements*

IEC 60064, *Tungsten filament lamps for domestic and similar general lighting purposes - Performance requirements*

MS IEC 60064, *Tungsten filament lamps for domestic and similar general lighting purposes - Performance requirements*

IEC 60081, *Double-capped fluorescent lamps - Performance specifications*

MS IEC 60081, *Double-capped fluorescent lamps - Performance specifications*

IEC 60228, *Conductors of insulated cables*

MS IEC 60228, *Conductors of insulated cables*

**NATIONAL FOREWORD** *(continued)*

IEC 60269-2, *Low-voltage fuses - Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) - Examples of standardized systems of fuses A to I*

MS IEC 60269-2, *Low-voltage fuses - Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) - Examples of standardized systems of fuses A to I*

IEC 60502-1, *Power cables with extruded insulation and their accessories for rated voltages from 1 kV ( $U_m = 1.2$  kV) up to 30 kV ( $U_m = 36$  kV) - Part 1: Cables for rated voltages of 1 kV ( $U_m = 1.2$  kV) up to 3 kV ( $U_m = 3.6$  kV)*

MS IEC 60502-1, *Power cables with extruded insulation and their accessories for rated voltages from 1 kV ( $U_m = 1.2$  kV) up to 30 kV ( $U_m = 36$  kV) - Part 1: Cables for rated voltages of 1 kV ( $U_m = 1.2$  kV) up to 3 kV ( $U_m = 3.6$  kV)*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP code)*

MS IEC 60529:2002, *Degrees of protection provided by enclosures (IP code)*

IEC 60617, *Graphical symbols for diagrams*

MS IEC 60617, *Graphical symbols for diagrams*

IEC 60695-1 (all parts), *Fire hazard testing - Part 1: Guidance for assessing the fire hazard of electrotechnical products*

MS IEC 60695-1 (all parts), *Fire hazard testing - Part 1: Guidance for assessing the fire hazard of electrotechnical products*

IEC 60695-7 (all parts), *Fire hazard testing - Part 7: Toxicity of fire effluent*

MS IEC 60695-7 (all parts), *Fire hazard testing - Part 7: Toxicity of fire effluent*

IEC 60721-1, *Classification of environmental conditions - Part 1: Environmental parameters and their severities*

MS 1749:2004, *Classification of environmental conditions - Part 1: Environmental parameters and their severities*

IEC 60721-2, *Classification of environmental conditions - Part 2: Environmental conditions appearing in nature - Temperature and humidity*

MS IEC 60721-2, *Classification of environmental conditions - Part 2: Environmental conditions appearing in nature - Temperature and humidity*

IEC 60947-2, *Low-voltage switchgear and controlgear - Part 2: Circuit-breaker*

MS IEC 60947-2, *Low-voltage switchgear and controlgear - Part 2: Circuit-breaker*

IEC 60947-3, *Low-voltage switchgear and controlgear - Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units*

MS IEC 60947-3, *Low-voltage switchgear and controlgear - Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units*

**NATIONAL FOREWORD** (continued)

IEC 60947-4-1, *Low-voltage switchgear and controlgear - Part 4-1: Contactors and motor-starters - Electromechanical contactors and motor-starters*

MS IEC 60947-4-1, *Low-voltage switchgear and controlgear - Part 4-1: Contactors and motor-starters - Electromechanical contactors and motor-starters*

IEC 60947-4-2, *Low-voltage switchgear and controlgear - Part 4-2: Contactors and motor-starters - AC semiconductor motor controllers and starters*

MS IEC 60947-4-2, *Low-voltage switchgear and controlgear - Part 4-2: Contactors and motor-starters - AC semiconductor motor controllers and starters*

IEC 60947-5-1, *Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices*

MS IEC 60947-5-1, *Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices*

IEC 61000-4-1, *Electromagnetic compatibility (EMC) - Part 4-1: Testing and measurement techniques - Overview of IEC 61000-4 series*

MS IEC 61000-4-1, *Electromagnetic compatibility (EMC) - Part 4-1: Testing and measurement techniques - Overview of IEC 61000-4 series*

IEC 61000-4-4, *Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity tests*

MS IEC 61000-4-4, *Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity tests*

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

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

CISPR 11, *Industrial, scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement*

MS CISPR 11, *Industrial, scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement*

CISPR 16-1 (all parts), *Specification for radio disturbance and immunity measuring apparatus and methods - Part 1: Radio disturbance and immunity measuring apparatus*

MS CISPR 16-1 (all parts), *Specification for radio disturbance and immunity measuring apparatus and methods - Part 1: Radio disturbance and immunity measuring apparatus*

CISPR 18-2, *Radio interference characteristics of overhead power lines and high-voltage equipment - Part 2: Methods of measurement and procedure for determining limits*

MS CISPR 18-2, *Radio interference characteristics of overhead power lines and high-voltage equipment - Part 2: Methods of measurement and procedure for determining limits*

**NATIONAL FOREWORD** (*concluded*)

- d) reference to International Standards in bibliography should be replaced by equivalent Malaysian Standards as follows:

<u>Referenced International Standards</u>	<u>Corresponding Malaysian Standards</u>
IEC 60068-1, <i>Environmental testing - Part 1: General and guidance</i>	MS IEC 60068-1, <i>Environmental testing - Part 1: General and guidance</i>
IEC 62271-100, <i>High-voltage switchgear and controlgear - Part 100: Alternating-current circuit-breakers</i>	MS IEC 62271-100, <i>High-voltage switchgear and controlgear - Part 100: Alternating-current circuit-breakers</i>
ISO 9001, <i>Quality management systems - Requirements</i>	MS ISO 9001, <i>Quality management systems - Requirements</i>

This Malaysian Standard cancels and replaces MS 1781:2005 and MS IEC 60694:2005.

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

NOTE. IDT on the front cover indicates an identical standard i.e. a standard where the technical content, structure, wording (or is an identical translation) of a Malaysian Standard is exactly the same as in an International Standard or is identical in technical content and structure although it may contain the minimal editorial changes specified in clause 4.2 of ISO/IEC Guide 21-1.

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

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**High-voltage switchgear and controlgear –  
Part 1: Common specifications**

**Appareillage à haute tension –  
Partie 1: Spécifications communes**