



MALAYSIAN STANDARD

MS IEC 61439-1:2010

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES - PART 1: GENERAL RULES (SECOND REVISION) (IEC 61439-1:2009, IDT)

IEC 61439-1:2009 is endorsed as Malaysian Standard with the reference number MS IEC 61439-1:2010.

ICS: 29.130.20

Descriptors: low voltage switchgear, controlgear

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

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Department of Standards Malaysia
Federation of Malaysian Manufacturers
Jabatan Kerja Raya Malaysia
Malaysia Energy Centre
Malaysian Association of Standards Users
Malaysian Cable Manufacturers Association
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Tenaga Nasional Berhad
The Electrical and Electronics Association of Malaysia
The Institution of Engineers, Malaysia
Universiti Teknologi Malaysia

The Technical Committee on Low Voltage Switchgear, Controlgear and Wiring Accessories which supervised the adoption of the IEC Standard consists of representatives from the following organisations:

ABB Installations Material
Association of Consulting Engineers Malaysia
Clipsal International Pte Ltd
Federation of Malaysian Manufacturers
Jabatan Kerja Raya Malaysia
Megapower Manufacturing (M) Sdn Bhd
Persatuan Pembekal Menentang Barang Elektrik Palsu
Schneider Electric Industries (M) Sdn Bhd
SIRIM Berhad
SIRIM Berhad (Secretariat)
SIRIM QAS International Sdn Bhd
Suruhanjaya Tenaga
The Electrical and Electronics Association of Malaysia
TNB Distribution Sdn Bhd
TNB Research Sdn Bhd
Universiti Malaya

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

ABB Malaysia Sdn Bhd
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Jabatan Kerja Raya Malaysia
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TAMCO Corporate Holdings Sdn Bhd
Tenaga Nasional Berhad
The Electrical and Electronics Association of Malaysia
Toprank Corporation Sdn Bhd

MS IEC 61439-1:2010

NATIONAL FOREWORD

The adoption of the IEC Standard as a Malaysian Standard was recommended by the Working Group on Low Voltage Switchgear and Controlgear Assemblies under the authority of the Industry Standards Committee on Generation, Transmission and Distribution of Electrical Energy.

This Malaysian Standard is the second revision of MS IEC 60439-1, *Low - voltage switchgear and controlgear assemblies - Part 1: Type-tested and partially type-tested assemblies*.

This Malaysian Standard is identical with IEC 61439-1:2009, *Low-voltage switchgear and controlgear assemblies - Part 1: General rules*, 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) the basis IEC 60947-3 is printed in English and French languages. However, only the English version applied for this Malaysian Standard; and
- d) reference to International Standards should be replaced by corresponding Malaysian Standards as follows:

<u>Referenced International Standards</u>	<u>Corresponding Malaysian Standards</u>
IEC 60038, <i>IEC standard voltages</i>	MS IEC 60038, <i>IEC standard voltages</i>
IEC 60068-2-2, <i>Environmental testing - Part 2-2: Tests - Test B: Dry heat</i>	MS IEC 60068-2-2, <i>Environmental testing - Part 2-2: Tests - Test B: Dry heat</i>
IEC 60068-2-11, <i>Environmental testing - Part 2-11: Tests - Test Ka: Salt mist</i>	MS IEC 60068-2-11, <i>Environmental testing - Part 2-11: Tests - Test Ka: Salt mist</i>
IEC 60068-2-30, <i>Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 + 12-hour cycle)</i>	MS IEC 60068-2-30, <i>Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 + 12-hour cycle)</i>
IEC 60364-4-41, <i>Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock</i>	MS IEC 60364-4-41, <i>Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock</i>
IEC 60364-4-44, <i>Low-voltage electrical installations - Part 4-44: Protection for safety - Protection against voltage disturbances and electromagnetic disturbances</i>	MS IEC 60364-4-44, <i>Low-voltage electrical installations - Part 4-44: Protection for safety - Protection against voltage disturbances and electromagnetic disturbances</i>

NATIONAL FOREWORD (*continued*)

Referenced International Standards

Corresponding Malaysian Standards

IEC 60364-5-52:2001, *Low-voltage electrical installations - Part 5-52: Selection and erection of electrical equipment - Wiring systems*

MS IEC 60364-5-52:2001, *Low-voltage electrical installations - Part 5-52: Selection and erection of electrical equipment - Wiring systems*

IEC 60364-5-53:2001, *Low-voltage electrical installations - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control*

MS IEC 60364-5-53:2001, *Low-voltage electrical installations - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control*

IEC 60364-5-54:2002, *Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements, protective conductors and protective bonding conductors*

MS IEC 60364-5-54:2002, *Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements, protective conductors and protective bonding conductors*

IEC 60529:2001, *Degrees of protection provided by enclosures (IP Code)*

MS IEC 60529:2001, *Degrees of protection provided by enclosures (IP Code)*

IEC 60695-11-5, *Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance*

MS IEC 60695-11-5, *Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance*

IEC 60695-2-10, *Fire Hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure*

MS IEC 60695-2-10, *Fire Hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure*

IEC 60695-2-11, *Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products*

MS IEC 60695-2-11, *Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products*

IEC 60947-1, *Low-voltage switchgear and controlgear - Part 1: General rules*

MS IEC 60947-1, *Low-voltage switchgear and controlgear - Part 1: General rules*

IEC 61000-3-2, *Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*

MS IEC 61000-3-2, *Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*

NATIONAL FOREWORD (continued)

Referenced International Standards

Corresponding Malaysian Standards

IEC 61000-4-2, *Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test - Basic EMC publication*

MS IEC 61000-4-2, *Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test - Basic EMC publication*

IEC 61000-4-3, *Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio frequency, electromagnetic field immunity test - Basic EMC publication*

MS IEC 61000-4-3, *Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio frequency, electromagnetic field immunity test - Basic EMC publication*

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

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

IEC 61000-4-5:, *Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test - Basic EMC publication*

MS IEC 61000-4-5:, *Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test - Basic EMC publication*

IEC 61000-4-6, *Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency*

MS IEC 61000-4-6, *Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency*

IEC 61000-4-8, *Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test - Basic EMC publication*

MS IEC 61000-4-8, *Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test - Basic EMC publication*

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

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

NATIONAL FOREWORD *(concluded)*

Referenced International Standards

Corresponding Malaysian Standards

IEC 61000-4-13:2002, *Electromagnetic compatibility (EMC) - Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signalling at a.c. power port, low-frequency immunity tests - Basic EMC publication*

MS IEC 61000-4-13:2002, *Electromagnetic compatibility (EMC) - Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signalling at a.c. power port, low-frequency immunity tests - Basic EMC publication*

IEC 61000-6-4, *Electromagnetic compatibility (EMC) - Part 6-4: Generic standards -Emission standard for industrial environments*

MS IEC 61000-6-4, *Electromagnetic compatibility (EMC) - Part 6-4: Generic standards -Emission standard for industrial environments*

IEC 62208, *Empty enclosures for low-voltage switchgear and controlgear assemblies -General requirements*

MS IEC 62208, *Empty enclosures for low-voltage switchgear and controlgear assemblies -General requirements*

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 22, *Information technology equipment - Radio disturbance characteristics -Limits and methods of measurement*

MS CISPR 22, *Information technology equipment - Radio disturbance characteristics -Limits and methods of measurement*

ISO 4892-2, *Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc sources*

MS ISO 4892-2, *Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc sources*

This Malaysian Standard cancels and replaces MS IEC 60439-1:2005.

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NOTE. IDT on the front cover indicates an identical standard i.e. a standard where the technical content, structure, and 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

**Low-voltage switchgear and controlgear assemblies –
Part 1: General rules**

**Ensembles d'appareillage à basse tension –
Partie 1: Règles générales**



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NORME INTERNATIONALE

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