



# **MALAYSIAN STANDARD**

**MS IEC 60079-15:2010**

**EXPLOSIVE ATMOSPHERES - PART 15:  
EQUIPMENT PROTECTION BY TYPE OF  
PROTECTION "N"  
(SECOND REVISION)  
(IEC 60079-15:2010, IDT)**

**ICS: 29.260.20**

Descriptors: explosive atmospheres, equipment protection by type of protection "n"

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Preview Only

## Committee representation

The Industry Standards Committee on Electrical Equipment and Accessories (ISC S) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

Department of Standards Malaysia  
Federation of Malaysian Manufacturers  
Gabungan Persatuan-persatuan Pengguna-pengguna Malaysia  
Jabatan Kerja Raya Malaysia  
Malaysia Energy Centre  
Malaysian Association of Standards Users  
Malaysian Cable Manufacturers Association  
Malaysian Communications and Multimedia Commission  
Malaysian Electrical Appliances and Distribution Association  
Ministry of Domestic Trade, Co-operatives and Consumerism  
Ministry of International Trade and Industry  
Multimedia University  
SIRIM Berhad (Secretariat)  
SIRIM QAS International Sdn Bhd  
Suruhanjaya Tenaga  
Tenaga Nasional Berhad  
The Electrical and Electronics Association of Malaysia  
Universiti Tenaga Nasional

The Technical Committee on Equipment for Explosive Atmospheres which recommended the adoption of the IEC Standard as Malaysian Standard consists of representatives from the following organisations:

Ampmech Industries Sdn Bhd  
Association of Consulting Engineers Malaysia  
Association of Malaysian Oil and Gas Engineering Consultants  
Federation of Malaysian Manufacturers  
Malaysian Gas Association  
Malaysian Oil and Gas Services Council  
Petronas Carigali Sdn Bhd  
Petronas Penapisan Melaka Sdn Bhd  
SIRIM Berhad (Secretariat)  
SIRIM QAS International Sdn Bhd  
Sarawak Shell Berhad  
Suruhanjaya Tenaga  
Tenaga Nasional Berhad  
The Electrical and Electronics Association of Malaysia  
The Institution of Engineers, Malaysia  
TRMS Engineering Sdn Bhd  
Universiti Teknologi Malaysia

## NATIONAL FOREWORD

The adoption of the IEC Standard as a Malaysian Standard was recommended by the Technical Committee on Equipment for Explosive Atmospheres under the authority of the Industry Standards Committee on Electrical Equipment and Accessories.

This Malaysian Standard is the second revision of MS IEC 60079-15, *Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus (First revision)*.

This Malaysian Standard is identical with IEC 60079-15:2010, *Explosive atmospheres - Part 15: Equipment protection by type of protection "n"*, 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 60079-15 is printed in English and French version. However, only the English version is retained 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 60034-1, <i>Rotating electrical machines - Part 1: Rating and performance</i>	MS IEC 60034-1, <i>Rotating electrical machines - Part 1: Rating and performance</i>
IEC 60061-1, <i>Lamps caps and holders together with gauges for the control of interchangeability and safety - Part 1: Lamp caps</i>	MS IEC 60061-1, <i>Lamps caps and holders together with gauges for the control of interchangeability and safety - Part 1: Lamp caps</i>
IEC 60068-2-7, <i>Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock</i>	MS IEC 60068-2-7, <i>Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock</i>
IEC 60079-0, <i>Explosive atmospheres - Part 0: Equipment - General requirements</i>	MS IEC 60079-0, <i>Explosive atmospheres - Part 0: Equipment - General requirements</i>
IEC 60079-1, <i>Explosive atmospheres - Part 1: Equipment protection by flameproof enclosure</i>	MS IEC 60079-1, <i>Explosive atmospheres - Part 1: Equipment protection by flameproof enclosure</i>
IEC 60079-11, <i>Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"</i>	IEC 60079-11, <i>Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"</i>
IEC 60228, <i>Conductors of insulated cables</i>	MS IEC 60228, <i>Conductors of insulated cables</i>
IEC 60238, <i>Edison screw lampholders</i>	MS IEC 60238, <i>Edison screw lampholders</i>

**NATIONAL FOREWORD** (continued)

IEC 60400, <i>Lampholders for tubular fluorescent lamps and starterholders</i>	MS IEC 60400, <i>Lampholders for tubular fluorescent lamps and starterholders</i>
IEC 60529, <i>Degrees of protection provided by enclosures (IP Code)</i>	MS IEC 60529, <i>Degrees of protection provided by enclosures (IP Code)</i>
IEC 60598-1, <i>Luminaires - Part 1: General requirements and tests</i>	MS IEC 60598-1, <i>Luminaires - Part 1: General requirements and tests</i>
IEC 60598-2 (all parts), <i>Luminaires - Part 2: Particular requirements</i>	MS IEC 60598-2 (all parts), <i>Luminaires - Part 2: Particular requirements</i>
IEC 60947-7-1, <i>Low-voltage switchgear and controlgear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors</i>	MS IEC 60947-7-1, <i>Low-voltage switchgear and controlgear - Part 7-1: Ancillary equipment - Terminal blocks for copper conductors</i>
IEC 60947-7-2, <i>Low-voltage switchgear and controlgear - Part 7-2: Ancillary equipment - Protective conductor terminal blocks for copper conductors</i>	IEC 60947-7-2, <i>Low-voltage switchgear and controlgear - Part 7-2: Ancillary equipment - Protective conductor terminal blocks for copper conductors</i>
IEC 60998-2-4, <i>Connecting devices for low-voltage circuits for household and similar purposes - Part 2-4: Particular requirements for twist-on connecting devices</i>	MS IEC 60998-2-4, <i>Connecting devices for low-voltage circuits for household and similar purposes - Part 2-4: Particular requirements for twist-on connecting devices</i>
IEC 61048, <i>Auxiliaries for lamps - Capacitors for use in tubular fluorescent and other discharge lamp circuits - General and safety requirements</i>	MS IEC 61048, <i>Auxiliaries for lamps - Capacitors for use in tubular fluorescent and other discharge lamp circuits - General and safety requirements</i>
IEC 61195, <i>Double-capped fluorescent lamps - Safety specifications</i>	MS IEC 61195, <i>Double-capped fluorescent lamps - Safety specifications</i>
IEC 61347-2-1, <i>Lamp controlgear - Part 2-1: Particular requirements for starting devices (other than glow starters)</i>	MS IEC 61347-2-1, <i>Lamp controlgear - Part 2-1: Particular requirements for starting devices (other than glow starters)</i>
IEC 61347-2-2, <i>Lamp controlgear - Part 2-2: Particular requirements for d.c. or a.c. supplied electronic step-down convertors for filament lamps</i>	MS IEC 61347-2-2, <i>Lamp controlgear - Part 2-2: Particular requirements for d.c. or a.c. supplied electronic step-down convertors for filament lamps</i>
IEC 61347-2-3, <i>Lamp controlgear - Part 2-3: Particular requirements for a.c. supplied electronic ballasts for fluorescent lamps</i>	MS IEC 61347-2-3, <i>Lamp controlgear - Part 2-3: Particular requirements for a.c. supplied electronic ballasts for fluorescent lamps</i>

**NATIONAL FOREWORD** (continued)

IEC 61347-2-4, *Lamp controlgear - Part 2-4: Particular requirements for d.c. supplied electronic ballasts for general lighting*

MS IEC 61347-2-4, *Lamp controlgear - Part 2-4: Particular requirements for d.c. supplied electronic ballasts for general lighting*

IEC 61347-2-7, *Lamp controlgear - Part 2-7: Particular requirements for d.c. supplied electronic ballasts for emergency lighting*

MS IEC 61347-2-7, *Lamp controlgear - Part 2-7: Particular requirements for d.c. supplied electronic ballasts for emergency lighting*

IEC 61347-2-8, *Lamp controlgear - Part 2-8: Particular requirements for ballasts for fluorescent lamps*

MS IEC 61347-2-8, *Lamp controlgear - Part 2-8: Particular requirements for ballasts for fluorescent lamps*

IEC 61347-2-9, *Lamp controlgear - Part 2-9: Particular requirements for ballasts for discharge lamps (excluding fluorescent lamps)*

MS IEC 61347-2-9, *Lamp controlgear - Part 2-9: Particular requirements for ballasts for discharge lamps (excluding fluorescent lamps)*

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

Referenced International StandardsCorresponding Malaysian Standards

IEC 60034-5, *Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP Code) - Classification*

MS IEC 60034-5, *Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP Code) - Classification*

IEC/TS 60034-17, *Rotating electrical machines - Part 17: Cage induction motors when fed from converters - Application guide*

MS IEC/TS 60034-17, *Rotating electrical machines - Part 17: Cage induction motors when fed from converters - Application guide*

IEC 60050(426), *International Electrotechnical Vocabulary (IEV) - Part 426: Equipment for explosive atmospheres*

MS IEC 60050(426), *International Electrotechnical Vocabulary (IEV) - Part 426: Equipment for explosive atmospheres*

IEC 60068-2-6, *Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)*

MS IEC 60068-2-6, *Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)*

IEC 60079-4, *Electrical apparatus for explosive gas atmospheres - Part 4: Method of test for ignition temperature*

MS IEC 60079-4, *Electrical apparatus for explosive gas atmospheres - Part 4: Method of test for ignition temperature*

IEC 60079-7, *Explosive atmospheres - Part 7: Equipment protection by increase safety "e"*

MS IEC 60079-7, *Explosive atmospheres - Part 7: Equipment protection by increase safety "e"*

**NATIONAL FOREWORD** (*concluded*)

IEC 60079-17, *Explosive atmospheres - Part 17: Electrical installation inspection and maintenance*

MS IEC 60079-17, *Explosive atmospheres - Part 17: Electrical installation inspection and maintenance*

IEC 60079-18, *Explosive atmospheres - Part 18: Equipment protection by encapsulation "m"*

MS IEC 60079-18, *Explosive atmospheres - Part 18: Equipment protection by encapsulation "m"*

This Malaysian Standard cancels and replaces MS IEC 60079-15:2005.

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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 ELECTROTECHNICAL COMMISSION

**EXPLOSIVE ATMOSPHERES –****Part 15: Equipment protection by type of protection "n"**

## FOREWORD

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International Standard IEC 60079-15 has been prepared by IEC technical committee 31: Equipment for explosive atmospheres.

This fourth edition cancels and replaces the third edition, published in 2005, and constitutes a technical revision.

The significant technical changes with respect to the previous edition are as follows:

- addition of equipment protection levels;
- removal of the requirements for energy-limited "nL" and associated energy limited apparatus "[nL]";
- removal of the requirements for encapsulated Devices "nC";
- requirements for electrical connections expanded and clarified;
- requirements for luminaire ballasts expanded and clarified;
- requirements for evaluation and testing of motor rotors clarified;

- 15 kV limit for equipment protection by type of protection "n" added;
- spacing requirement for voltages above 10 kV modified;
- requirements for restricted breathing enclosures modified;
- modification to requirements for motor rotors and stators;
- addition of Annex A (informative);
- undated references to IEC 60079-0 included.

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

FDIS	Report on voting
31/833/FDIS	31/853/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 International Standard is to be read in conjunction with IEC 60079-0.

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

A list of all parts of the IEC 60079 series, under the general title: *Explosives atmospheres*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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