

AMERICAN NATIONAL STANDARD

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Supercedes ANSI/ISA-60079-18 (12.23.01)-2009

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

ANSI/UL 60079-18 approved by ANSI 31 May 2012

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Commitment for Amendments

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The most recent designation of ANSI/ISA-60079-18 as an American National Standard occurred on 14 September 2012, and the most recent designation of ANSI/UL 60079-18 as an American National Standard occurred on 31 May 2012.

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The International Society of Automation
ANSI/ISA-60079-18
Third Edition

Underwriters Laboratories Inc.
ANSI/UL 60079-18
Third Edition



Explosive atmospheres - Part 18:
Equipment protection by encapsulation "m"

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General Notes

This is the common ISA and UL standard for Explosive atmospheres Part 18: Equipment protection by encapsulation "m". It is the third edition of ANSI/ISA-60079-18 and the third edition of ANSI/UL 60079-18. This document is a modification of IEC 60079-18 (2009:05) Ed. 3.0, incorporating IEC 60079-18 Corr.1 (2009:06) Ed. 3.0, and includes US deviations encompassing both additions and deletions of information.

ANSI/ISA-60079-18 and ANSI/UL 60079-18 contain identical requirements, and identical publication dates. The presentation and format of the standards material may differ between the two published standards.

This common standard was prepared by ISA and Underwriters Laboratories Inc. (UL).

Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

Level of harmonization

This standard adopts the IEC text and corrigendum with deviations.

The requirements are presented in different formats. The ISA version of the standard illustrates the national differences from the IEC text through the use of legislative text (strike-out and underline). The UL version of the standard illustrates national differences immediately following the IEC text. National differences between the UL version and the ISA version shall be word for word except for editorial changes.

Interpretations

The interpretation by the SDO of an identical or equivalent standard shall be based on the literal text to determine compliance with the standard in accordance with the procedural rules of the SDO. If more than one interpretation of the literal text has been identified, a revision shall be proposed as soon as possible to each of the SDOs to more accurately reflect the intent.

UL Effective Date

As of 31 May 2012 all products Listed or Recognized by UL must comply with the requirements in this standard.

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Preface (ISA)

This ISA standard is based on the 3rd edition of IEC Publication 60079-18. It is the intention of the ISA12 Committee to develop an ANSI Standard that is harmonized with IEC 60079-18 to the fullest extent possible. This preface is included for informational purposes and is not part of ANSI/ISA-60079-18. The document is a modification of the IEC document and includes U.S. deviations encompassing both additions and deletions of information.

The significant changes with respect to the previous edition are listed below:

- Incorporation of level of protection “mc”
- Equipment protection levels (EPL Ga, Da, Gb, Db, Gc, Dc)
- Incorporation of the dust requirements
- Incorporation of switching contacts for level of protection “ma”
- Water absorption test methodology

The standards referenced within this document may contain provisions which, through reference in this text, constitute requirements of this document. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this document are encouraged to investigate the possibility of applying the most recent editions of the standards indicated within this document. Members of IEC and ISO maintain registers of currently valid International Standards. ANSI maintains registers of currently valid U.S. National Standards.

This document has been prepared as part of the service of ISA toward a goal of uniformity in the field of instrumentation. To be of real value, this document should not be static but should be subject to periodic review. Toward this end, the Society welcomes all comments and criticisms and asks that they be addressed to the Secretary, Standards and Practices Board; ISA; 67 Alexander Drive; P. O. Box 12277; Research Triangle Park, NC 27709; Telephone (919) 549-8411; Fax (919) 549-8288; E-mail: standards@isa.org.

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National Differences

GENERAL

National Differences from the text of International Electrotechnical Commission (IEC) Publication 60079-18, Explosive atmospheres - Part 18: Equipment protection by encapsulation "m", copyright 2009, are indicated by notations (differences) and are presented in bold text.

In the ISA publication of this standard, National Differences are presented using legislative text (strike-out and underline). The national difference type is identified in an informative annex.

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

The UL printed standard includes the national difference types within the body of the text. The ISA printed standard includes the national difference types in an annex at the back of the standard.

D1 – These are National Differences which are based on **basic safety principles and requirements**, elimination of which would compromise safety for consumers and users of products.

D2 – These are National Differences from IEC requirements based on **safety practices**. These requirements reflect national safety practices, where empirical substantiation (for the IEC or national requirements) is not available or the text has not been included in the IEC standard.

DC – These are National Differences based on the **component standards** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE – These are National Differences based on **editorial comments or corrections**.

DR – These are National Differences based on the **national regulatory requirements**.

Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:

Addition / Add – An addition entails adding a complete new numbered clause, subclause, table or figure. Addition is not meant to include adding select words to the base IEC text.

Deletion / Delete – A deletion entails complete deletion of an entire numbered clause, subclause, table or figure without any replacement text.

Modification / Modify – A modification is an altering of the existing base IEC text such as the addition, replacement or deletion of certain words or the replacement of an entire clause, subclause, table, or figure of the base IEC text.

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