

AMERICAN NATIONAL STANDARD

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Supersedes ANSI/ISA-60079-15 (12.12.02)-2003

**Electrical Apparatus for Use in Class I,
Zone 2 Hazardous (Classified)
Locations: Type of Protection "n"**

Approved 17 July 2009

Commitment for Amendments

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ISA
ANSI/ISA-60079-15
Third Edition

Underwriters Laboratories Inc.
ANSI/UL 60079-15
Third Edition



**Electrical Apparatus for Use in Class I, Zone 2 Hazardous (Classified) Locations:
Type of Protection "n"**

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General Notes

This is the common ISA and UL standard for Electrical apparatus for use in Class I, Zone 2 Hazardous (Classified) Locations: Type of Protection “n”. It is the third edition of ANSI/ISA-60079-15 (superseding ANSI/ISA-60079-15 (12.12.02)-2003) and the third edition of ANSI/UL 60079-15. The document is a modification of the IEC document and includes U.S. deviations encompassing both additions and deletions of information.

ANSI/ISA-60079-15 and ANSI/UL 60079-15 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 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

The requirements in this standard are effective 31 July 2012.

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National Differences

GENERAL

National Differences from the text of International Electrotechnical Commission (IEC) Publication 60079-15, Electrical apparatus for explosive gas atmospheres – Part 15: Construction, test and marking of type of protection, “n” electrical apparatus, copyright 2005, 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 based on **safety practices**. These are differences for IEC requirements that may be acceptable, but adopting the IEC requirements would require considerable retesting or redesign on the manufacturer’s part.

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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Foreword (ISA)

All text of IEC 60079-15:2005 (3rd edition) is included. U.S. National Deviations are shown by strikeout through text deleted and underline under text added. Tables, or portions of tables, that are to be deleted are shown as shaded; figures to be deleted are marked with the overlay "X."

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1 Scope

This ~~standard part of IEC 60079~~ specifies requirements for the construction, testing and marking for Group II electrical apparatus with type of protection, "n" intended for use in ~~explosive gas atmospheres~~ Class I, Zone 2 hazardous (classified) locations as defined by the National Electrical Code[®] (NEC[®]), ANSI/NFPA 70.

This ~~part standard~~ is applicable to non-sparking electrical apparatus and also to electrical apparatus with parts or circuits producing arcs or sparks or having hot surfaces which, if not protected in one of the ways specified in this standard, could be capable of igniting a surrounding explosive gas atmosphere. This standard describes several different methods by which this can be achieved which may be combined with other methods described in ~~IEC ANSI/ISA-60079-0~~.

This ~~part standard~~ supplements the general requirements in ~~IEC ANSI/ISA-60079-0~~. The relationship of ~~IEC ANSI/ISA-60079-0~~ to this ~~part standard~~ is as indicated in Table 1.

Table 1 – Relationship of this ~~part standard~~ to ~~IEC ANSI/ISA-60079-0~~

Clause of IEC ANSI/ISA-60079-0		IEC ANSI/ISA-60079-0 clause application to IEC ANSI/ISA-60079-15				
		Type of protection nC	Non sparking apparatus nA and nL	Restricted breathing apparatus nR	Energy limited apparatus nL	Associated energy limited apparatus [nL] and [AEX nL]
4	Apparatus grouping and temperature classification	Yes	Yes	Yes	Yes	Yes
5	Temperatures					
5.1	Environmental influences	Yes	Yes	Yes	Yes	Yes
5.2	Service temperature	Yes	Yes	Yes	Yes	Yes
5.3	Maximum surface temperature	Yes	Yes	Yes	Yes	No
5.4	Surface temperature and ignition temperature	No	No	No	No	No
5.5	Small components	Yes	Yes	Yes	Yes	No
6	Requirements for all electrical apparatus					
6.1	General	Yes	Yes	Yes	Yes	Yes
6.2	Mechanical strength of apparatus	Yes	Yes	Yes	Yes ^{c)}	No
6.3	Opening times	No	No	Yes	No	No
6.4	Circulating currents	Yes	Yes	Yes	No	No
6.5	Gasket retention	Yes	Yes	Yes	Yes	No