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AS/NZS 60079.11:2006

Australian/New Zealand Standard™

Explosive atmospheres

Part 11: Equipment protection by intrinsic safety ‘i’

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-014, Equipment for Explosive Atmospheres. It was approved on behalf of the Council of Standards Australia on 10 November 2006 and on behalf of the Council of Standards New Zealand on 8 December 2006.
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Explosive atmospheres

Part 11: Equipment protection by intrinsic safety ‘i’

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-014, Equipment for Explosive Atmospheres, to supersede AS/NZS 60079.11:2000.

The objective of this Standard is to specify the construction and testing of intrinsically safe apparatus intended for use in an explosive gas atmosphere and for associated apparatus, which is intended for connection to intrinsically safe circuits which enter such atmospheres.

This Standard is identical to and has been reproduced from IEC 60079-11, Ed. 5.0 (2006), *Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i"*.

Footnotes have been added to clarify typographical errors in the original IEC Standard.

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

(a) introduction of level of protection "ic" (this level of protection has been introduced to allow removal of the 'energy limitation' concept from IEC 60079-15);

(b) introduction of Annex F that allows reduction in segregation distance requirements when the pollution degree has been reduced by installation or enclosure;

(c) introduction of alternative spark test apparatus construction when used with high current circuits;

(d) introduction of Annex E that provides a method for transient energy test;

(e) changes in the table of 'Temperature classification of tracks on PCBs' to allow correlation with IPC-2152;

(f) allowing alternative methods of rating resistors when used to limit the discharge from capacitance;

(g) introduction of methods to deal with the spark ignition energy consideration when high current low voltage cells and batteries are used;

(h) introduction of tests to measure the maximum pressure in sealed battery containers;

(i) introduction of methods to deal with fault application on voltage enhancement ICs;

(j) introduction of infallible connection methods for SMDs (surface mount devices);

(k) introduction of alternative methods to deal with the spark ignition energy in circuits with both inductance and capacitance;

(l) introduction of alternative high voltage test for transformers;

(m) introduction of methods to assess the reduction of effective capacitance when protected by series resistances;

(n) introduction of Group I data for permitted short circuit current and permitted capacitance in the tables of Annex A.

As this Standard is reproduced from an International Standard, the following applies:

(i) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(ii) In the source text 'IEC 60079-11' should read 'AS/NZS 60079.11'.

(iii) A full point should be substituted for a comma when referring to a decimal marker.

The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

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