AS/NZS 60079.27:2008
IEC 60079-27, Ed. 2.0 (2008)

AS/NZS 60079.27:2008

Australian/New Zealand Standard™

Explosive atmospheres

Part 27: Fieldbus intrinsically safe concept (FISCO)

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 2 July 2008 and on behalf of the Council of Standards New Zealand on 8 July 2008.
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The following are represented on Committee EL-014:

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Australian/New Zealand Standard™

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Part 27: Fieldbus intrinsically safe concept (FISCO)

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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 60079.27(Int):2006.

The objective of this Standard is to specify the requirements for design, construction, installation and marking of fieldbus intrinsically safe concept (FISCO) system.

This Standard is identical with, and has been reproduced from, IEC 60079-27, Ed. 2.0 (2008), *Explosive atmospheres - Part 27: Fieldbus intrinsically safe concept (FISCO)*.

The significant change with respect to the first edition is that this Standard replaces the FNICO requirements with the requirements of an 'ic' FISCO system.

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

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

(b) In the source text 'this part of IEC 60079' should read 'this Australian/New Zealand Standard'.

(c) 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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1 Scope

This part of IEC 60079 contains the details of apparatus, systems and installation practice for use with the Fieldbus Intrinsically Safe Concept (FISCO). It is based on the concepts of Manchester encoded, bus powered systems designed in accordance with IEC 61158-2 which is the physical layer standard for Fieldbus installations.

The constructional and installation requirements of FISCO apparatus and systems are determined by IEC 60079-11, IEC 60079-14, and IEC 60079-25, except as modified by this standard. Part of a Fieldbus device may be protected by any of the methods of explosion protection listed in IEC 60079-0, appropriate to the zone of intended use. In these circumstances, the requirements of this standard apply only to that part of the apparatus directly connected to the intrinsically safe trunk or spurs.

NOTE 1 Certification to the FISCO requirements does not prevent apparatus also being certified and marked to IEC 60079-11 in the conventional manner so that they may be used in other systems. Some apparatus certified before this standard was published but not necessarily complying with the electrical parameters of this standard may be marked “Suitable for FISCO systems”. This apparatus may be accepted in a FISCO system, if the comparison of the electrical parameters U_o, I_o, P_o, with U_i, I_i, P_i, demonstrate compatibility with the remainder of the system, and all the other requirements of this standard are met.

NOTE 2 A typical system is illustrated in Annex A.

NOTE 3 Generally, “ic” FISCO systems are intended for use in zone 2 locations. FISCO systems are predominantly intended for use in zone 1 and 2 locations, but may enter zone 0 locations if specifically permitted to do so by the documentation.

NOTE 4 Edition 1 of this standard introduced the FNICO concept to cover the use of Fieldbus concepts in zone 2 utilizing the energy-limited [nL] concept. This standard substitutes the “ic” concept for the energy-limited concept, but permits the continued use of FNICO and nL apparatus.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

References to International Standards that are struck through in this clause are replaced by references to Australian or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading. Any Australian or Australian/New Zealand Standard that is identical to the International Standard it replaces is identified as such.

~~IEC 60079-0, *Explosive atmospheres – Part 0: Equipment – General requirements*~~

AS/NZS 60079.0, *Explosive atmospheres—Equipment—General requirements*

~~IEC 60079-11, *Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”*~~

AS/NZS 60079.11, *Explosive atmospheres—Equipment protection by intrinsic safety “i”*

IEC 60079-14, *Electrical apparatus for explosive gas atmospheres – Part 14: Electrical installations in hazardous areas (other than mines)*