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Australian/New Zealand Standard™

Electrical apparatus for explosive gas atmospheres

Part 27: Fieldbus intrinsically safe concept (FISCO)

Standards Australia

STANDARDS NEW ZEALAND
Paerewa Aotearoa

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PREFACE

This Interim Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-014, Electrical Equipment in Hazardous Areas.

The objective of this Interim Standard is to specify the requirements for design, construction, installation and marking of fieldbus intrinsically safe concept (FISCO) systems, intended for use in explosive gas atmospheres.

This Interim Standard is identical with, and has been reproduced from, IEC TS 60079-27:2002, *Electrical apparatus for explosive gas atmospheres—Part* 27: *Fieldbus intrinsically safe concept (FISCO)*.

As this Interim Standard is reproduced from an International Technical Specification a full point should be substituted for a comma when referring to a decimal marker.

Standards Australia/Standards New Zealand invites comment on this Interim Standard from persons and organizations concerned with this subject. The date of expiry is two years after publication, at which time this Interim Standard will be confirmed, withdrawn or revised in the light of public comment. The closing date for comment is 18 months after publication at which time the Committee will either consider its withdrawal at the end of its two years life, extend its life for another 2 years or revise it in the light of public comment, with the view to the publication of a Joint Australian/New Zealand Standard before the expiry date.

During the life of this document the Committee will monitor all comment as it is received.

Attention is drawn to the fact that this document is an Interim Joint Australian/New Zealand Standard only and should be regarded as a developmental Standard and liable to future alteration.

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Interim Australian/New Zealand Standard

Electrical apparatus for explosive gas atmospheres Part 27: Fieldbus intrinsically safe concept (FISCO)

1 Scope

This part of IEC 60079, which is a technical specification, contains the details of apparatus, systems and installation practice for use with the Fieldbus intrinsically safe concept (FISCO) and 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 60079-25 and IEC 60079-14, except as modified by this specification.

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 technical specification was published but not necessarily complying with the electrical parameters of this technical specification 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 technical specification are met.

A typical FISCO system is illustrated in Figure 1.

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, *Electrical apparatus for explosive gas atmospheres – Part 0: General requirements*~~

AS/NZS 60079.0:2000, *Electrical apparatus for explosive gas atmospheres,* Part 0: *General requirements* (Identical to IEC 60079-0:1998)

~~IEC 60079-11, *Electrical apparatus for explosive gas atmospheres – Part 11: Intrinsic safety "i"*~~

AS/NZS 60079.11:2000, *Electrical apparatus for explosive gas atmosphere,* Part 11: *Intrinsic safety 'i'* (Identical to IEC 60079-11:1999)

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