

Electrical apparatus for explosive gas atmospheres —

Part 27: Fieldbus intrinsically safe concept (FISCO) and Fieldbus non-incendive concept (FNICO)

The European Standard EN 60079-27:2006 has the status of a
British Standard

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National foreword

This British Standard is the official English language version of EN 60079-27:2006. It is identical with IEC 60079-27:2005.

The UK participation in its preparation was entrusted by Technical Committee GEL/31, Electrical apparatus for explosive atmospheres, to Subcommittee GEL/31/13, Intrinsically safe apparatus, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;
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**Electrical apparatus for explosive gas atmospheres
Part 27: Fieldbus intrinsically safe concept (FISCO)
and Fieldbus non-incendive concept (FNICO)
(IEC 60079-27:2005)**

Matériel électrique pour atmosphères
explosives gazeuses
Partie 27: Concept de réseau de terrain
de sécurité intrinsèque (FISCO)
et concept de réseau de terrain
non incendiaire (FNICO)
(CEI 60079-27:2005)

Elektrische Betriebsmittel für
gasexplosionsgefährdete Bereiche
Teil 27: Konzept für eigensichere
Feldbussysteme (FISCO) und
Konzept für nichtzündfähige
Feldbussysteme (FNICO)
(IEC 60079-27:2005)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 31G/138/FDIS, future edition 1 of IEC 60079-27, prepared by SC 31G, Intrinsically-safe apparatus, of IEC TC 31, Electrical apparatus for explosive atmospheres, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60079-27 on 2006-02-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2006-11-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2009-02-01

This European Standard was prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and supports the essential requirements of Directive 94/9/EC. See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60079-27:2005 was approved by CENELEC as a European Standard without any modification.

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ELECTRICAL APPARATUS FOR EXPLOSIVE GAS ATMOSPHERES –

Part 27: Fieldbus intrinsically safe concept (FISCO) and Fieldbus non-incendive concept (FNICO)

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) and the Fieldbus Non-Incendive Concept (FNICO). 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 and FNICO apparatus and systems are determined by IEC 60079-11, IEC 60079-14, IEC 60079-15 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 or non-incendive 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_0 , I_0 , P_0 , 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 Clause 10.

NOTE 3 Generally, FNICO 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.

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.

IEC 60050-426, *International Electrotechnical Vocabulary (IEV) – Electrical apparatus for explosive atmospheres*

IEC 60079-0, *Electrical apparatus for explosive gas atmospheres – Part 0: General requirements*

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

IEC 60079-14:2002, *Electrical apparatus for explosive gas atmospheres – Part 14: Electrical installations in hazardous areas (other than mines)*