SVENSK STANDARD SS-EN 60079-27

Fastställd	Utgåva	Sida	Ansvarig kommitté
2008-10-20	2	1 (1+14)	SEK TK 31

© Copyright SEK. Reproduction in any form without permission is prohibited.

Explosiv atmosfär – Del 27: Särskilda fordringar på utrustning, system och installationer för egensäkra fältbussar (FISCO)

Explosive atmospheres –
Part 27: Fieldbus intrinsically safe concept (FISCO)

Som svensk standard gäller europastandarden EN 60079-27:2008. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60079-27:2008.

Nationellt förord

Europastandarden EN 60079-27:2008

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 60079-27, Second edition, 2008 - Explosive atmospheres - Part 27: Fieldbus intrinsically safe concept (FISCO)**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 60079-27, utgåva 1, 2006, gäller ej fr o m 2011-04-01.

ICS 29.260.20

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
Postadress: SEK, Box 1284, 164 29 KISTA
Telefon: 08 - 444 14 00. *Telefax*: 08 - 444 14 30
E-post: sek@elstandard.se. *Internet*: www.elstandard.se

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

SEK Svensk Elstandard
Box 1284
164 29 Kista
Tel 08-444 14 00
www.elstandard.se

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60079-27

May 2008

ICS 29.260.20

Supersedes EN 60079-27:2006

English version

Explosive atmospheres - Part 27: Fieldbus intrinsically safe concept (FISCO)

(IEC 60079-27:2008)

Atmosphères explosives -
Partie 27: Concept de réseau de terrain de sécurité intrinsèque (FISCO)
(CEI 60079-27:2008)

Explosionsfähige Atmosphäre -
Teil 27: Konzept für eigensichere Feldbussysteme (FISCO)
(IEC 60079-27:2008)

This European Standard was approved by CENELEC on 2008-04-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

© 2008 CENELEC - All rights of exploitation in any form and by any means reserved worldwide for CENELEC members.

Ref. No. EN 60079-27:2008 E

SEK Svensk Elstandard

Foreword

The text of document 31G/169/CDV, future edition 2 of IEC 60079-27, prepared by SC 31G, Intrinsically-safe apparatus, of IEC TC 31, Equipment for explosive atmospheres, was submitted to the IEC-CENELEC Parallel Unique Acceptance Procedure and was approved by CENELEC as EN 60079-27 on 2008-04-01.

This European Standard supersedes EN 60079-27:2006.

The significant change with respect to EN 60079-27:2006 is that EN 60079-27:2008 replaces the FNICO requirements with the requirements of an “ic” FISCO system.

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)	2009-01-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2011-04-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC 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 60079-27:2008 was approved by CENELEC as a European Standard without any modification.

———————

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60079-0 (mod)	-[1)]	Explosive atmospheres - Part 0: Equipment - General requirements	EN 60079-0	2006[2)]
IEC 60079-11	-[1)]	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"	EN 60079-11	2007[2)]
IEC 60079-14	-[1)]	Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines)	EN 60079-14	2003[2)]
IEC 60079-15	-[1)]	Electrical apparatus for explosive gas atmospheres - Part 15: Construction, test and marking of type of protection "n" electrical apparatus	EN 60079-15	2005[2)]
IEC 60079-25	-[1)]	Electrical apparatus for explosive gas atmospheres - Part 25: Intrinsically safe systems	EN 60079-25 + corr. April	2004[2)] 2006
IEC 61158-2	-[1)]	Industrial communication networks - Fieldbus specifications - Part 2: Physical layer specification and service definition	EN 61158-2	2008[2)]

[1)] Undated reference.

[2)] Valid edition at date of issue.

CONTENTS

EXPLOSIVE ATMOSPHERES –

Part 27: Fieldbus intrinsically safe concept (FISCO)

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.

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

IEC 60079-11, *Explosive atmospheres – Part 11: 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)*

IEC 60079-15, *Electrical apparatus for explosive gas atmospheres – Part 15: Construction, test and marking of type of protection ”n” electrical apparatus*

IEC 60079-25, *Electrical apparatus for explosive gas atmospheres – Part 25: Intrinsically safe systems*

IEC 61158-2, *Digital data communications for measurement and control – Fieldbus for use in industrial control systems – Part 2: Physical layer specification and service definition*