



BSI Standards Publication

## Explosive atmospheres

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Part 47: Equipment protection by 2-wire intrinsically safe Ethernet concept (2-WISE)

## National foreword

This Published Document is the UK implementation of CLC IEC/TS 60079-47:2021. It is identical to IEC TS 60079-47:2021. It supersedes PD IEC TS 60079-47:2021, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EXL/31, Equipment for explosive atmospheres.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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**Explosive atmospheres - Part 47: Equipment protection by 2-wire intrinsically safe Ethernet concept (2-WISE)  
(IEC/TS 60079-47:2021)**

Atmosphères explosives - Partie 47: Protection du matériel par le concept Ethernet de sécurité intrinsèque à 2 fils (2-WISE)  
(IEC/TS 60079-47:2021)

Explosionsgefährdete Bereiche - Teil 47: Geräteschutz durch eigensicheres 2-Draht-Ethernet-Konzept (2-WISE)  
(IEC/TS 60079-47:2021)

This Technical Specification was approved by CENELEC on 2021-07-05.

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

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## European foreword

This document (CLC IEC/TS 60079-47:2021) consists of the text of IEC/TS 60079-47:2021 prepared by IEC/TC 31 "Equipment for explosive atmospheres".

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Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

## Endorsement notice

The text of the International Technical Specification IEC/TS 60079-47:2021 was approved by CENELEC as a European Technical Specification without any modification.

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**EXPLOSIVE ATMOSPHERES –****Part 47: Equipment protection by 2-wire intrinsically safe Ethernet concept (2-WISE)**

## FOREWORD

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 60079-47, which is a technical specification, has been prepared by subcommittee 31G: Intrinsically safe apparatus, of IEC technical committee 31: Equipment for explosive atmospheres.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
31G/323/DTS	31G/334/RVC

Full information on the voting for the approval of this technical specification can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60079 series, published under the general title *Explosive atmospheres*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## EXPLOSIVE ATMOSPHERES –

### Part 47: Equipment protection by 2-wire intrinsically safe Ethernet concept (2-WISE)

#### 1 Scope

This part of IEC 60079, which is a technical specification, specifies requirements for the construction, marking and documenting of apparatus, systems and installations for use with the 2-Wire Intrinsically Safe Ethernet concept (2-WISE), such as the physical layer specification for 2-Wire Ethernet 10BASE-T1L as defined in IEEE 802.3cg.

2-WISE is a concept for an advanced physical layer (APL), designed to simplify the examination process for intrinsic safety parameters of components and cabling within APL segments. This is achieved by defining universal intrinsic safety parameter limits for APL ports according to the specific hazardous area requirements and listing a concise set of rules for the segment setup.

The requirements for construction and installation of 2-WISE devices and systems are included in IEC 60079-11, IEC 60079-14, and IEC 60079-25, except as modified by this document. Parts of a 2-WISE device can be protected by any Type of protection listed in IEC 60079-0 appropriate to the EPL for the intended hazardous area. In these circumstances, the requirements of this technical specification apply only to intrinsically safe circuits of the apparatus.

Where a requirement of this document conflicts with a requirement of IEC 60079-0, IEC 60079-11, IEC 60079-14 or IEC 60079-25, the requirements of this document take precedence.

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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, *Explosive atmospheres - Part 14: Electrical installations design, selection and erection*

IEC 60079-25, *Explosive atmospheres - Part 25: Intrinsically safe electrical systems*

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60079-0, IEC 60079-11, IEC 60079-14, IEC 60079-25 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>