



BSI Standards Publication

Industrial communication networks — Installation of communication networks in industrial premises

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National foreword

This British Standard is the UK implementation of EN IEC 61918:2018+A1:2022, incorporating corrigendum March 2019. It is derived from IEC 61918:2018, incorporating amendment 1:2022. It supersedes BS EN IEC 61918:2018+A11:2019, which will be withdrawn on 13 April 2025.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by A1 A1. Tags indicating changes to CENELEC text carry the number of the CENELEC amendment. For example, text altered by CENELEC amendment A11 is indicated by A11 A11.

The UK participation in its preparation was entrusted to Technical Committee GEL/65/3, Industrial communications: process measurement and control, including fieldbus.

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

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 November 2018.

Amendments/corrigenda issued since publication

Date	Text affected
31 March 2019	Implementation of CENELEC corrigendum March 2019: dop modified in European foreword
30 November 2019	Implementation of CENELEC amendment A11:2019

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Date	Text affected
30 November 2022	Implementation of IEC amendment 1:2022 with CENELEC endorsement A1:2022

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EUROPÄISCHE NORM

April 2022

ICS 25.040.40; 33.020; 35.240.50

Supersedes EN 61918:2013

English Version

Industrial communication networks - Installation of communication networks in industrial premises (IEC 61918:2018)

Réseaux de communication industriels - Installation de
réseaux de communication dans des locaux industriels
(IEC 61918:2018)

Industrielle Kommunikationsnetze - Installation von
Kommunikationsnetzen in Industrieanlagen
(IEC 61918:2018)

This European Standard was approved by CENELEC on 2018-10-25. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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The text of document 65C/928/FDIS, future edition 4 of IEC 61918, prepared by SC 65C "Industrial networks" of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61918:2018.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-12-25
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2021-10-25

This document supersedes EN 61918:2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

A11 EN IEC 61918:2018 includes the following significant technical changes with respect to EN 61918:2013:

- a) the reference to ISO/IEC 24702 has been replaced with reference to the new ISO/IEC 11801-3; this affects Table 2;
- b) some terms and abbreviated terms have been modified in Clause 3;
- c) Subclauses 4.1.2, 4.4.2.5, 4.4.3.4.1 and 5.7 have been updated;
- d) Figure 2 and Figure 3 have been updated; Figure 13, Figure 16, Figure 30 and Figure 49 have been added;
- e) Table 7 has been updated;
- f) Annex D and Annex M have been extended to cover additional communication profile families; Annex H has been extended to cover the M12-8 X-coding connector use;
- g) Annex O has been modified by including references to the new edition of the EN 50173 series, ISO/IEC TR 11801-9902 and ISO/IEC 14763-4;
- h) Annex P has been added.

This standard is to be used in conjunction with the EN 61784-5 series with regard to the installation of communication profiles (CPs).

Those standards of the EN 61784-5 series which are still specified for use in conjunction with EN 61918:2013 can also be used in conjunction with this edition, provided that the user takes into account the fact that the reference to ISO/IEC 24702 has been replaced with a reference to EN 50173-3.

NOTE This solution applies for the Installation profiles that are affected only by this modified reference.

This standard is referenced by EN 50174, in particular by EN 50174-2, which covers installation of generic cabling outside the automation islands in industrial premises. **A11**

Endorsement notice

The text of the International Standard IEC 61918:2018 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60060-1	NOTE	Harmonized as EN 60060-1
IEC 60079-11:2011	NOTE	Harmonized as EN 60079-11:2012 (not modified)
IEC 60079-14	NOTE	Harmonized as EN 60079-14
IEC 60228	NOTE	Harmonized as EN 60228
IEC 60332-1 (series)	NOTE	Harmonised as EN 60332-1 (series)
IEC 60364 (series)	NOTE	Harmonised as HD 60364 (series)
IEC 60512-4 (series)	NOTE	Harmonised as EN 60512-4 (series)
IEC 60529	NOTE	Harmonized as EN 60529
IEC 60664-1	NOTE	Harmonized as EN 60664-1

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IEC 60950-21	NOTE	Harmonized as EN 60950-21
IEC 61000-4-4	NOTE	Harmonized as EN 61000-4-4
IEC 61000-6-2	NOTE	Harmonized as EN 61000-6-2
IEC 61000-6-4	NOTE	Harmonized as EN 61000-6-4
IEC 61010-2-201	NOTE	Harmonized as EN IEC 61010-2-201
IEC 61131-2:2017	NOTE	Harmonized as EN 61131-2:— ² (not modified)
IEC 61158-1	NOTE	Harmonized as EN 61158-1
IEC 61508-4	NOTE	Harmonized as EN 61508-4
IEC 61984:2008	NOTE	Harmonized as EN 61984:2009 (not modified)
IEC 62026-3	NOTE	Harmonized as EN 62026-3

European foreword

This document (EN IEC 61918:2018/A1:2019) has been prepared by CLC/TC 65X "Industrial-process measurement, control and automation".

The following dates are fixed:

- latest date by which this document has to be implemented at national level (dop) 2020-04-03
by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with this (dow) 2022-04-03
document have to be withdrawn

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

European foreword to amendment A1

The text of document 65C/1141/FDIS, future IEC 61918/AMD1, prepared by SC 65C "Industrial networks" of IEC/TC 65 "Industrial-process measurement, control and automation" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61918:2018/A1:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2023-01-13
level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2025-04-13
document have to be withdrawn

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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 Standard IEC 61918:2018/AMD1:2022 was approved by CENELEC as a European Standard without any modification.

¹ Under preparation. Stage at the time of publication: prEN IEC 60670-1

² Under preparation. Stage at the time of publication: FprEN 61131-2:2017

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(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60364-1 (mod)	2005	Low-voltage electrical installations - Part 1: Fundamental principles, assessment of general characteristics, definitions	HD 60364-1	2008
-	-		+ A11	2017
IEC 60364-4-41	-	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41	-
IEC 60364-4-44	-	Low-voltage electrical installations - Part 4-44: Protection for safety - Protection against voltage disturbances and electromagnetic disturbances	HD 60364-4-442	-
IEC 60364-5-54	-	Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements and protective conductors	HD 60364-5-54	-
IEC 60512-29-100	-	Connectors for electronic equipment - Tests and measurements - Part 29-100: Signal integrity tests up to 500 MHz on M12 style connectors - Tests 29a to 29g	EN 60512-29-100	-
IEC 60603	series	Connectors for frequencies below 3 MHz for use with printed boards	-	series
IEC 60603-7	series	Connectors for electronic equipment - Part 7: Detail specification for 8-way, shielded, free and fixed connectors	EN 60603-7	series
IEC 60757	-	Code for designation of colours	HD 457 S1	-
IEC 60793	series	Optical fibres	-	series
IEC 60793-2-10	-	Optical fibres - Part 2-10: Product specifications - Sectional specification for category A1 multimode fibres	EN 60793-2-10	-

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		3 MHz - Part 2: Detail specification for a range of connectors, with assessed quality, with trapezoidal shaped metal shells and round contacts - Fixed solder contact types		
IEC 60807-3	-	Rectangular connectors for frequencies below 3 MHz - Part 3: Detail specification for a range of connectors with trapezoidal shaped metal shells and round contacts - Removable crimp contact types with closed crimp barrels, rear insertion/rear extraction	-	-
IEC 60825-2	-	Safety of laser products - Part 2: Safety of optical fibre communication systems (OFCS)	EN 60825-2	-
IEC 60950-1	-	Information technology equipment - Safety - Part 1: General requirements	EN 60950-1	-
IEC 61000-4-4	-	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	-
IEC 61000-4-5	-	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	-
IEC 61010-2-201	-	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-201: Particular requirements for control equipment	EN IEC 61010-2-201	-
IEC 61010-2-203	⁻³	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-203: Particular requirements for industrial communication circuits and communication port interconnection	-	-
IEC 61076-2-101	-	Connectors for electronic equipment - Product requirements - Part 2-101: Circular connectors - Detail specification for M12 connectors with screw-locking	EN 61076-2-101	-
IEC 61076-2-109	-	Connectors for electronic equipment - Product requirements - Part 2-109: Circular connectors - Detail specification for connectors with M 12 x 1 screw-locking, for data transmission frequencies up to 500 MHz	EN 61076-2-109	-
IEC 61076-3-106	-	Connectors for electronic equipment - Product requirements - Part 3-106: Rectangular connectors - Detail specification for protective housings for use with 8-way shielded and unshielded connectors for industrial environments incorporating the IEC 60603-7 series interface	EN 61076-3-106	-
IEC 61076-3-117	-	Connectors for electronic equipment - Product requirements - Part 3-117: Rectangular connectors - Detail specification for protective housings for use with 8-way shielded and unshielded connectors for industrial environments incorporating the IEC 60603-7 series interface - Variant 14 related to IEC 61076-3-106 - Push-pull coupling	EN 61076-3-117	-
IEC 61156	series	Multicore and symmetrical pair/quad cables for digital communications	-	-

³ To be published. Stage at the time of publication: IEC/ACDV 61010-2-203:2021.

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Generic specification				
IEC 61156-11	-	Multicore and symmetrical pair/quad cables for digital communications - Part 11: Symmetrical single pair cables with transmission characteristics up to 600 MHz - Horizontal floor wiring - Sectional specification	-	-
IEC 61156-12	-	Multicore and symmetrical pair/quad cables for digital communications - Part 12: Symmetrical single pair cables with transmission characteristics up to 600 MHz - Work area wiring - Sectional specification	-	-
IEC 61158	series	Industrial communication networks - Fieldbus specifications	EN 61158	series
IEC 61158-2	2014	Industrial communication networks - Fieldbus specifications - Part 2: Physical layer specification and service definition	EN 61158-2	2014
IEC 61169-8	-	Radio-frequency connectors - Part 8: Sectional specification - RF coaxial connectors with inner diameter of outer conductor 6,5 mm (0,256 in) with bayonet lock - Characteristic impedance 50 ohms (type BNC)	EN 61169-8	-
IEC 61753	series	Fibre optic interconnecting devices and passive components - Performance standard	EN 61753	series
IEC 61753-1	-	Fibre optic interconnecting devices and passive components - Performance standard - Part 1: General and guidance	EN IEC 61753-1	-
IEC 61753-1-3	-	Fibre optic interconnecting devices and passive components - Performance standard - Part 1-3: General and guidance for single-mode fibre optic connector and cable assembly for industrial environment, Category I	EN 61753-1-3	-
IEC 61754-2	-	Fibre optic connector interfaces - Part 2: Type BFOC/2,5 connector family	EN 61754-2	-
IEC 61754-4	-	Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces - Part 4: Type SC connector family	EN 61754-4	-
IEC 61754-20	-	Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces - Part 20: Type LC connector family	EN 61754-20	-
IEC 61754-22	-	Fibre optic connector interfaces - Part 22: Type F-SMA connector family	EN 61754-22	-
IEC 61754-24	-	Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces - Part 24: Type SC-RJ connector family	EN 61754-24	-
IEC 61784	series	Industrial communication networks - Profiles	EN 61784	series
IEC 61784-1 ⁴	-	Industrial communication networks - Profiles - Part 1: Fieldbus profiles	-	-

⁴ Under preparation. Stage at the time of publication: IEC/FDIS 61784-1:2018

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networks based on ISO/IEC 8802-3				
IEC 61784-3	series	Industrial communication networks - Profiles - Part 3: Functional safety fieldbuses - General rules and profile definitions	EN 61784-3	series
IEC 61784-5	series	Industrial communication networks - Profiles - Part 5: Installation of fieldbuses	EN 61784-5	series
IEC 61935-1	2019	Specification for the testing of balanced and coaxial information technology cabling - Part 1: Installed balanced cabling as specified in ISO/IEC 11801-1 and related standards	-	-
IEC 61935-1-1	2019	Specification for the testing of balanced and coaxial information technology cabling - Part 1-1: Additional requirements for the measurement of transverse conversion loss and equal level transverse conversion transfer loss	-	-
IEC 61935-2	-	Specification for the testing of balanced and coaxial information technology cabling - Part 2: Cords as specified in ISO/IEC 11801 and related standards	EN 61935-2	-
IEC 62439	series	Industrial communication networks - High availability automation networks	-	-
IEC 62443	series	Security for industrial automation and control systems	EN IEC 62443	series
IEC 62708	-	Documents kinds for electrical and instrumentation projects in the process industry	EN 62708	-
IEC 63171-6	-	Connectors for electrical and electronic equipment - Part 6: Detail specification for 2-way and 4-way (data/power), shielded, free and fixed connectors for power and data transmission with frequencies up to 600 MHz.	EN IEC 63171-6	-
ISO/IEC 11801	series	Information technology - Generic cabling for customer premises	-	-
ISO/IEC 11801-1	2017	Information technology - Generic cabling for customer premises - Part 1: General requirements	-	-
ISO/IEC 11801-3:2017 /AMD1	2021	Information technology - Generic cabling for customer premises - Part 3: Industrial premises	-	-
ISO/IEC/IEEE 8802-3	2021	Telecommunications and exchange between information technology systems - Requirements for local and metropolitan area networks - Part 3: Standard for Ethernet	-	-

⁵ Under preparation. Stage at the time of publication: IEC/FDIS 61784-2:2018

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		for End-to-end link configurations		
ISO/IEC 14763-2	2012	Information technology - Implementation and operation of customer premises cabling - Part 2: Planning and installation	-	-
+A1	2015		-	-
ISO/IEC 14763-3	2014	Information technology - Implementation and operation of customer premises cabling - Part 3: Testing of optical fibre cabling	-	-
ISO/IEC 14763-4	2018	Information technology - Implementation and operation of customer premises cabling - Part 4: Measurement of end-to-end (E2E)-Links	-	-
ISO/IEC TS 29125	2017	Information Technology - Telecommunications cabling requirements for remote powering of terminal equipment	-	-
EN 50174-2	-	Information technology - Cabling installation - Part 2: Installation planning and practices inside buildings	EN 50174-2	-
EN 50310	-	Application of Equipotential Bonding and Earthing in Buildings with Information Technology Equipment	EN 50310	-
IEEE Std 802.3	2015	IEEE Standard for Ethernet	-	-
IEEE Std 802.3cg	-	IEEE Standard for Ethernet - Amendment 5: Physical Layer Specifications and Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of Conductors	-	-
ANSI/(NFPA) T3.5.29 R1	2007	Fluid power systems and components - Electrically-controlled industrial valves - Interface dimensions for electrical connectors	-	-