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BS EN 61158-2:2014



BSI Standards Publication

Industrial communication networks — Fieldbus specifications

Part 2: Physical layer specification and service definition

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This British Standard is the UK implementation of EN 61158-2:2014. It is identical to IEC 61158-2:2014. It supersedes BS EN 61158-2:2010 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee AMT/7, Industrial communications: process measurement and control, including fieldbus.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Amendments/corrigenda issued since publication

Date	Text affected
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English Version

Industrial communication networks - Fieldbus specifications -
Part 2: Physical layer specification and service definition
(IEC 61158-2:2014)

Réseaux de communication industriels - Spécifications des
bus de terrain - Partie 2: Spécification et définition des
services de la couche physique
(CEI 61158-2:2014)

Industrielle Kommunikationsnetze - Feldbusse - Teil 2:
Spezifikation und Dienstfestlegungen des Physical Layer
(Bitübertragungsschicht)
(IEC 61158-2:2014)

This European Standard was approved by CENELEC on 2014-08-21. 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, 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: Avenue Marnix 17, B-1000 Brussels

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Foreword

The text of document 65C/758A/FDIS, future edition 6 of IEC 61158-2, 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 61158-2:2014.

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) 2015-05-21
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-08-21

This document supersedes EN 61158-2:2010.

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

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Endorsement notice

The text of the International Standard IEC 61158-2:2014 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 60079-0	NOTE	Harmonized as EN 60079-0.
IEC 60875-1	NOTE	Harmonized as EN 60875-1.
IEC 60947-5-2	NOTE	Harmonized as EN 60947-5-2.
IEC 61158	NOTE	Harmonized as EN 61158 series.
IEC 61158-1:2014	NOTE	Harmonized as EN 61158-1:2014 (not modified).
IEC 61158-4-1:2014	NOTE	Harmonized as EN 61158-4-1 ¹⁾ (not modified).
IEC 61158-4-4:2014	NOTE	Harmonized as EN 61158-4-4 ¹⁾ (not modified).
IEC 61158-4-7:2007	NOTE	Harmonized as EN 61158-4-7:2008 (not modified).
IEC 61158-4-8:2007	NOTE	Harmonized as EN 61158-4-8:2008 (not modified).
IEC 61158-4-12:2014	NOTE	Harmonized as EN 61158-4-12 ¹⁾ (not modified).

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IEC 61158-4-18:2010	NOTE	Harmonized as EN 61158-4-18:2012 (not modified).
IEC 61158-4-20:2014	NOTE	Harmonized as EN 61158-4-20 ¹⁾ (not modified).
IEC 61158-4-24:2014	NOTE	Harmonized as EN 61158-4-24 ¹⁾ (not modified).
IEC 61300-3-4	NOTE	Harmonized as EN 61300-3-4.
IEC/TR 61491	NOTE	Harmonized as CLC/TR 61491.
IEC 61596	NOTE	Harmonized as EN 61596.
IEC 61784-1	NOTE	Harmonized as EN 61784-1.
IEC 61784-2	NOTE	Harmonized as EN 61784-2.

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(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When 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 60050	series	International Electrotechnical Vocabulary (IEV)	-	-
IEC 60079-11	-	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"	EN 60079-11	-
IEC 60079-14 -	2007 -	Explosive atmospheres - Part 14: Electrical installations design, selection and erection	EN 60079-14 + AC	2008 2011
IEC 60079-25	-	Explosive atmospheres - Part 25: Intrinsically safe electrical systems	EN 60079-25	-
IEC 60169-17	-	Radio-frequency connectors Part 17: R.F. coaxial connectors with inner diameter of outer conductor 6,5 mm (0,256 in) with screw coupling - Characteristic impedance 50 ohms (Type TNC)	-	-
IEC 60189-1	2007	Low-frequency cables and wires with PVC insulation and PVC sheath - Part 1: General test and measuring methods	-	-
IEC 60255-22-1	1988	Electrical relays - Part 22: Electrical disturbance tests for measuring relays and protection equipment - Section 1: 1 MHz burst disturbance tests	-	-
IEC 60364-4-41	-	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41	-

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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 60529	-	Degrees of protection provided by enclosures (IP Code)	EN 60529	-
IEC 60603-7-4	-	Connectors for electronic equipment - Part 7-4: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz	EN 60603-7-4	-
IEC 60754-2	-	Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity	EN 60754-2	-
IEC 60793	series	Optical fibres	EN 60793	series
IEC 60793-2-30	2012	Optical fibres - Part 2-30: Product specifications - Sectional specification for category A3 multimode fibres	EN 60793-2-30	2013
IEC 60793-2-40	2009	Optical fibres - Part 2-40: Product specifications - Sectional specification for category A4 multimode fibres	EN 60793-2-40	2011
IEC 60794-1-2	2003	Optical fibre cables - Part 1-2: Generic specification - Basic optical cable test procedures	EN 60794-1-2	2003
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 types with closed crimp barrels, rear insertion/rear extraction	-	-
IEC 60811-403	-	Electric and optical fibre cables - Test methods for non-metallic materials - Part 403: Miscellaneous tests - Ozone resistance tests on cross-linked compounds	EN 60811-403	-
IEC 60811-404	2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 404: Miscellaneous tests - Mineral oil immersion tests for sheaths	EN 60811-404	2012
IEC 61000-4-2	-	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	-
IEC 61000-4-3	-	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	-

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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 61131-2	2007	Programmable controllers - Part 2: Equipment requirements and tests	EN 61131-2	2007
IEC 61156-1	2007	Multicore and symmetrical pair/quad cables for digital communications - Part 1: Generic specification	-	-
IEC 61158-3-20	2014	Industrial communication networks - Fieldbus specifications - Part 3-20: Data-link layer service definition - Type 20 elements	EN 61158-3-20	2014
IEC 61158-4-2	2014	Industrial communication networks - Fieldbus specifications - Part 4-2: Data-link layer protocol specification - Type 2 elements	EN 61158-4-2	2) ²⁾
IEC 61158-4-3	2014	Industrial communication networks - Fieldbus specifications - Part 4-3: Data-link layer protocol specification - Type 3 elements	EN 61158-4-3	2) ²⁾
IEC 61169-8	2007	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 - Characteristics impedance 50 ohms (type BNC)	EN 61169-8	2007
IEC 61210 (mod)	2010	Connecting devices - Flat quick-connect terminations for electrical copper conductors - Safety requirements	EN 61210	2010
IEC 61754-2	-	Fibre optic connector interfaces - Part 2: Type BFOC/2,5 connector family	EN 61754-2	-
IEC 61754-13	-	Fibre optic connector interfaces - Part 13: Type FC-PC connector	EN 61754-13	-
IEC 61754-22	-	Fibre optic connector interfaces - Part 22: Type F-SMA connector family	EN 61754-22	-
ISO/IEC 7498	series	Information technology - Open Systems Interconnection - Basic Reference Model	-	-
ISO/IEC 7498-1	1994	Information technology - Open Systems Interconnection - Basic Reference Model: The Basic Model	-	-
ISO/IEC 8482	-	Information technology - Telecommunications and information exchange between systems - Twisted pair multipoint interconnections	-	-

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ISO/IEC 8802-3	-	Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications	-	-
ISO/IEC 10731	1994	Information technology - Open Systems Interconnection - Basic Reference Model - Conventions for the definition of OSI services	-	-
ISO 4892-1	-	Plastics - Methods of exposure to laboratory light sources - Part 1: General guidance	EN ISO 4892-1	-
ISO 9314-1	-	Information Processing Systems - Fibre distributed data interface (FDDI) - Part 1: Token Ring physical layer protocol (PHY)	-	-
ANSI TIA/EIA-422-B	-	Electrical Characteristics of Balanced Voltage Digital Interface Circuits	-	-
ANSI TIA/EIA-485-A	-	Electrical Characteristics of Generators and Receivers for Use in Balanced Digital Multipoint Systems	-	-
ANSI TIA/EIA-644-A	-	Electrical Characteristics of Low Voltage Differential Signaling (LVDS) Interface Circuits	-	-

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