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**BS EN 61784-1:2014**



**BSI Standards Publication**

# **Industrial communication networks — Profiles**

Part 1: Fieldbus profiles

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This British Standard is the UK implementation of EN 61784-1:2014. It is identical to IEC 61784-1:2014. It supersedes BS EN 61784-1:2010 which is withdrawn.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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**Compliance with a British Standard cannot confer immunity from legal obligations.**

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## EUROPÄISCHE NORM

October 2014

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English Version

Industrial communication networks - Profiles - Part 1: Fieldbus  
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(IEC 61784-1:2014)

Réseaux de communication industriels - Profils - Partie 1:  
Profils de bus de terrain  
(CEI 61784-1:2014)

Industrielle Kommunikationsnetze - Profile - Teil 1:  
Feldbusprofile  
(IEC 61784-1:2014)

This European Standard was approved by CENELEC on 2014-09-23. 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.

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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/760/FDIS, future edition 4 of IEC 61784-1, prepared by IEC/TC 65C "Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61784-1:2014.

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) 2015-06-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-09-23

This document supersedes EN 61784-1:2010.

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.

## Endorsement notice

The text of the International Standard IEC 61784-1:2014 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 60079-14	NOTE	Harmonised as EN 60079-14.
IEC 60793 (Series)	NOTE	Harmonised as EN 60793 (Series).
IEC 61131-3	NOTE	Harmonised as EN 61131-3.
IEC 61158-1	NOTE	Harmonised as EN 61158-1.
IEC 61800-7-204	NOTE	Harmonised as EN 61800-7-204.
ISO/IEC 7498-3	NOTE	Harmonised as EN ISO/IEC 7498-1.

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## Annex ZA

(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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60079-11	-	Explosive atmospheres -- Part 11: Equipment protection by intrinsic safety "i"	EN 60079-11	-
IEC 60079-25	-	Explosive atmospheres -- Part 25: Intrinsically safe electrical systems	EN 60079-25	-
IEC 61010	series	Safety requirements for electrical equipment for measurement, control and laboratory use	+AC -	2013 series
IEC 61131-2	-	Programmable controllers -- Part 2: Equipment requirements and tests	EN 61131-2	-
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 61158-3-1	2014	Industrial communication networks - Fieldbus specifications - Part 3-1: Data-link layer service definition - Type 1 elements	EN 61158-3-1	2014
IEC 61158-3-2	2014	Industrial communication networks - Fieldbus specifications - Part 3-2: Data-link layer service definition - Type 2 elements	EN 61158-3-2	2014
IEC 61158-3-3	2014	Industrial communication networks - Fieldbus specifications - Part 3-3: Data-link layer service definition - Type 3 elements	EN 61158-3-3	2014
IEC 61158-3-4	2014	Industrial communication networks - Fieldbus specifications - Part 3-4: Data-link layer service definition - Type 4 elements	EN 61158-3-4	2014
IEC 61158-3-7	2007	Industrial communication networks - Fieldbus specifications - Part 3-7: Data-link layer service definition - Type 7 elements	EN 61158-3-7	2008
IEC 61158-3-8	2007	Industrial communication networks - Fieldbus specifications - Part 3-8: Data-link layer service definition - Type 8 elements	EN 61158-3-8	2008
IEC 61158-3-16	2007	Industrial communication networks - Fieldbus specifications - Part 3-16: Data-link layer service definition - Type 16 elements	EN 61158-3-16	2008
IEC 61158-3-18	2007	Industrial communication networks - Fieldbus specifications - Part 3-18: Data-link layer service definition - Type 18 elements	EN 61158-3-18	2008
IEC 61158-3-19	2014	Industrial communication networks - Fieldbus specifications - Part 3-19: Data-link layer service definition - Type 19 elements	EN 61158-3-19	2014

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		Fieldbus specifications - Part 3-20: Data-link layer service definition - Type 20 elements		
IEC 61158-3-24	2014	Industrial communication networks - Fieldbus specifications - Part 3-24: Data-link layer service definition - Type-24 elements	EN 61158-3-24	2014
IEC 61158-4-1	2014	Industrial communication networks - Fieldbus specifications - Part 4-1: Data-link layer protocol specification - Type 1 elements	EN 61158-4-1	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	2014
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	2014
IEC 61158-4-4	2014	Industrial communication networks - Fieldbus specifications - Part 4-4: Data-link layer protocol specification - Type 4 elements	EN 61158-4-4	2014
IEC 61158-4-7	2007	Industrial communication networks - Fieldbus specifications - Part 4-7: Data-link layer protocol specification - Type 7 elements	EN 61158-4-7	2008
IEC 61158-4-8	2007	Industrial communication networks - Fieldbus specifications - Part 4-8: Data-link layer protocol specification - Type 8 elements	EN 61158-4-8	2008
IEC 61158-4-16	2007	Industrial communication networks - Fieldbus specifications - Part 4-16: Data-link layer protocol specification - Type 16 elements	EN 61158-4-16	2008
IEC 61158-4-16	2007	Industrial communication networks - Fieldbus specifications - Part 4-16: Data-link layer protocol specification - Type 16 elements	EN 61158-4-16	2008
IEC 61158-4-18	2010	Industrial communication networks - Fieldbus specifications -- Part 4-18: Data-link layer protocol specification - Type 18 elements	EN 61158-4-18	2012
IEC 61158-4-18	2010	Industrial communication networks - Fieldbus specifications -- Part 4-18: Data-link layer protocol specification - Type 18 elements	EN 61158-4-18	2012
IEC 61158-4-19	2014	Industrial communication networks - Fieldbus specifications - Part 4-19: Data-link layer protocol specification - Type 19 elements	EN 61158-4-19	2014
IEC 61158-4-20	2014	Industrial communication networks - Fieldbus specifications - Part 4-20: Data-link layer protocol specification - Type 20 elements	EN 61158-4-20	2014
IEC 61158-4-24	2014	Industrial communication networks - Fieldbus specifications - Part 4-24: Data-link layer protocol specification - Type 24 elements	EN 61158-4-24	2014

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		Fieldbus specifications -- Part 5-2: Application layer service definition - Type 2 elements		
IEC 61158-5-3	2014	Industrial communication networks - Fieldbus specifications - Part 5-3: Application layer service definition - Type 3 elements	EN 61158-5-3	2014
IEC 61158-5-4	2014	Industrial communication networks - Fieldbus specifications - Part 5-4: Application layer service definition - Type 4 elements	EN 61158-5-4	2014
IEC 61158-5-5	2014	Industrial communication networks - Fieldbus specifications - Part 5-5: Application layer service definition - Type 5 elements	EN 61158-5-5	2014
IEC 61158-5-7	2007	Industrial communication networks - Fieldbus specifications - Part 5-7: Application layer service definition - Type 7 elements	EN 61158-5-7	2008
IEC 61158-5-8	2007	Industrial communication networks - Fieldbus specifications - Part 5-8: Application layer service definition - Type 8 elements	EN 61158-5-8	2008
IEC 61158-5-9	2014	Industrial communication networks - Fieldbus specifications - Part 5-9: Application layer service definition - Type 9 elements	EN 61158-5-9	2014
IEC 61158-5-16	2007	Industrial communication networks - Fieldbus specifications - Part 5-16: Application layer service definition - Type 16 elements	EN 61158-5-16	2008
IEC 61158-5-18	2010	Industrial communication networks - Fieldbus specifications -- Part 5-18: Application layer service definition - Type 18 elements	EN 61158-5-18	2012
IEC 61158-5-19	2014	Industrial communication networks - Fieldbus specifications - Part 5-19: Application layer service definition - Type 19 elements	EN 61158-5-19	2014
IEC 61158-5-20	2014	Industrial communication networks - Fieldbus specifications - Part 5-20: Application layer service definition - Type 20 elements	EN 61158-5-20	2014
IEC 61158-5-24	2014	Industrial communication networks - Fieldbus specifications - Part 5-24: Application layer service definition - Type 24 elements	EN 61158-5-24	2014
IEC 61158-6-2	2014	Industrial communication networks - Fieldbus specifications - Part 6-2: Application layer protocol specification - Type 2 elements	FprEN 61158-6-2	2014
IEC 61158-6-3	2014	Industrial communication networks - Fieldbus specifications - Part 6-3: Application layer protocol specification - Type 3 elements	EN 61158-6-3	2014
IEC 61158-6-4	2014	Industrial communication networks - Fieldbus specifications - Part 6-4: Application layer protocol specification - Type 4 elements	EN 61158-6-4	2014

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		Fieldbus specifications - Part 6-5: Application layer protocol specification - Type 5 elements		
IEC 61158-6-7	2007	Industrial communication networks - Fieldbus specifications - Part 6-7: Application layer protocol specification - Type 7 elements	EN 61158-6-7	2008
IEC 61158-6-8	2007	Industrial communication networks - Fieldbus specifications - Part 6-8: Application layer protocol specification - Type 8 elements	EN 61158-6-8	2008
IEC 61158-6-9	2014	Industrial communication networks - Fieldbus specifications - Part 6-9: Application layer protocol specification - Type 9 elements	EN 61158-6-9	2014
IEC 61158-6-16	2007	Industrial communication networks - Fieldbus specifications - Part 6-16: Application layer protocol specification - Type 16 elements	EN 61158-6-16	2008
IEC 61158-6-18	2010	Industrial communication networks - Fieldbus specifications - Part 6-18: Application layer protocol specification - Type 18 elements	EN 61158-6-18	2012
IEC 61158-6-19	2014	Industrial communication networks - Fieldbus specifications - Part 6-19: Application layer protocol specification - Type 19 elements	EN 61158-6-19	2014
IEC 61158-6-20	2014	Industrial communication networks - Fieldbus specifications - Part 6-20: Application layer protocol specification - Type 20 elements	EN 61158-6-20	2014
IEC 61158-6-24	2014	Industrial communication networks - Fieldbus specifications - Part 6-24: Application layer protocol specification - Type-24 Elements	EN 61158-6-24	2014
IEC 61784-2	2014	Industrial communication networks - Profiles - Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC 8802-3	EN 61784-2	2014
IEC 61784-5-2	2013	Industrial communication networks - Profiles -- Part 5-2: Installation of fieldbuses - Installation profiles for CPF 2	EN 61784-5-2	2013
IEC 61918 (mod)	2013	Industrial communication networks - Installation of communication networks in industrial premises	EN 61918	2013
			+AC	2014
			+AA	201X
IEC 62026-3	-	Low-voltage switchgear and controlgear Controller-device interfaces (CDIs) -- Part 3: Device Net	-	-
IEC 62591	2010	Industrial communication networks - Wireless communication network and communication profiles - WirelessHART™	EN 62591	2010
ISO 15745-3	2003	Industrial automation systems and integration - Open systems application integration framework -- Part 3: Reference description for IEC 61158 based control systems	-	-



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		integration - Open systems application integration framework - Part 4: Reference description for Ethernet-based control systems		
ISO/IEC 8482	-	Information technology - Telecommunications and information exchange between systems - Twisted pair multipoint interconnections	-	-
ISO/IEC 8802-2	1998	Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements -- Part 2: Logical link control	-	-
ISO/IEC 8802-3	2000	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 15802-3	-	Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Common specifications - Part 3: Media Access Control (MAC) Bridges	-	-
ANSI TIA/EIA-485-A		Electrical Characteristics of Generators and Receivers for Use in Balanced Digital Multipoint Systems	-	-
IEEE 802.3	2002	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	-	-
IETF RFC 1112	-	Host Extensions for IP Multicasting	-	-
IETF RFC 1122	-	Requirements for Internet Hosts - Communication Layers	-	-
IETF RFC 1123	-	Requirements for Internet Hosts - Application and Support	-	-
IETF RFC 1127	-	A Perspective on the Host Requirements RFCs	-	-
IETF RFC 2236	-	Internet Group Management Protocol	-	-
IETF RFC 768	-	User Datagram Protocol	-	-
IETF RFC 791	-	Internet Protocol - DARPA Internet Program Protocol Specification	-	-
IETF RFC 792	-	Internet Control Message Protocol	-	-
IETF RFC 793	-	Transmission Control Protocol - DARPA Internet Program Protocol Specification	-	-
IETF RFC 826	-	An Ethernet Address Resolution Protocol - or - Converting Network Protocol Addresses to 48.bit Ethernet Address for Transmission on Ethernet Hardware	-	-
IETF RFC 894	-	Standard for the Transmission of IP Datagrams over Ethernet Networks	-	-

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## CONTENTS

INTRODUCTION.....	17
1 Scope.....	18
2 Normative references .....	19
3 Definitions .....	23
3.1 Terms and definitions.....	23
3.2 Abbreviations and symbols .....	23
3.2.1 IEC 61158 abbreviations and symbols .....	23
3.2.2 Other abbreviations and symbols.....	24
3.3 Conventions.....	24
3.3.1 Conventions common to all layers .....	24
3.3.2 Physical layer .....	26
3.3.3 Data-link layer .....	26
3.3.4 Application layer .....	27
4 Conformance to communication profiles .....	27
5 Communication Profile Family 1 (FOUNDATION™ fieldbus) .....	28
5.1 General overview .....	28
5.2 Profile 1/1 (FOUNDATION™ H1) .....	29
5.2.1 Physical layer .....	29
5.2.2 Data-link layer .....	47
5.2.3 Application layer.....	118
5.3 Profile 1/2 (FOUNDATION™ HSE).....	120
5.3.1 Physical layer .....	120
5.3.2 Data-link layer .....	120
5.3.3 Network layer .....	120
5.3.4 Transport layer .....	120
5.3.5 Application layer .....	120
5.4 Profile 1/3 (FOUNDATION™ H2) .....	121
5.4.1 Physical layer .....	121
5.4.2 Data-link layer .....	124
5.4.3 Application layer .....	124
6 Communication Profile Family 2 (CIP™).....	124
6.1 General overview .....	124
6.2 Profile 2/1 (ControlNet) .....	125
6.2.1 Physical layer .....	125
6.2.2 Data-link layer .....	126
6.2.3 Application layer .....	128
6.3 Profile 2/2 (EtherNet/IP).....	129
6.3.1 Physical layer .....	129
6.3.2 Data-link layer .....	130
6.3.3 Application layer .....	131
6.4 Profile 2/3 (DeviceNet).....	133
6.4.1 Physical layer .....	133
6.4.2 Data-link layer .....	133
6.4.3 Application layer .....	135
7 Communication Profile Family 3 (PROFIBUS & PROFINET) .....	136