



BSI Standards Publication

Industrial communication networks — Fieldbus specifications

Part 6-10: Application layer protocol specification — Type 10 elements

National foreword

This British Standard is the UK implementation of EN IEC 61158-6-10:2023. It is identical to IEC 61158-6-10:2023. It supersedes BS EN IEC 61158-6-10:2019, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/65, Measurement and control.

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Part 6-10: Application layer protocol specification - Type 10
elements
(IEC 61158-6-10:2023)

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couche liaison de données - Eléments de type 10
(IEC 61158-6-10:2023)

Industrielle Kommunikationsnetze - Feldbusse - Teil 6-10:
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(Anwendungsschicht) - Typ 10-Elemente
(IEC 61158-6-10:2023)

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European foreword

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The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2024-01-28 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2026-04-28 document have to be withdrawn

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

IEC 60793-2-30	NOTE	Approved as EN 60793-2-30
IEC 60793-2-40	NOTE	Approved as EN IEC 60793-2-40
IEC 61158-1	NOTE	Approved as EN IEC 61158-1
IEC/IEEE 60802:— ¹	NOTE	Approved as EN IEC 60802:— ²
IEC 61784-1 (series)	NOTE	Approved as EN IEC 61784-1 (series)
IEC 61784-2 (series)	NOTE	Approved as EN IEC 61784-2 (series)
IEC 61784-3-3	NOTE	Approved as EN IEC 61784-3-3

¹ Under preparation. Stage at the time of publication: IEC/IEEE CD 60802:2022.

² Under preparation. Stage at the time of publication: prEN IEC 60802:2020.

Annex ZA (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 61131-9	-	Programmable controllers - Part 9: Single-drop digital communication interface for small sensors and actuators (SDCI)	EN IEC 61131-9	-
IEC 61158-2	2023	Industrial communication networks - Fieldbus specifications - Part 2: Physical layer specification and service definition	EN IEC 61158-2	2023
IEC 61158-5-10	2023	Industrial communication networks - Fieldbus specifications - Part 5-10: Application layer service definition - Type 10 elements	-	-
IEC 61158-6-3	2019	Industrial communication networks - Fieldbus specifications - Part 6-3: Application layer protocol specification - Type 3 elements	EN IEC 61158-6-3	2019
IEC 61158-6-10	2010	Industrial communication networks - Fieldbus specifications - Part 6-10: Application layer protocol specification - Type 10 elements	-	-
IEC 62439-2	2021	Industrial communication networks - High availability automation networks - Part 2: Media Redundancy Protocol (MRP)	EN IEC 62439-2	2022
IEC/TS 60079-47	2021	Explosive atmospheres - Part 47: Equipment protection by 2-Wire Intrinsically Safe Ethernet concept (2-WISE)	CLC IEC/TS 60079-47	2021
ISO/IEC 646	1991	Information technology - ISO 7-bit coded character set for information interchange	-	-
ISO/IEC 7498-1	-	Information technology - Open Systems Interconnection - Basic reference model: The basic model	-	-
ISO/IEC 8822	1994	Information technology - Open Systems Interconnection - Presentation service definition	-	-
ISO/IEC 8824-1	-	Information technology - Abstract Syntax Notation One (ASN.1) - Part 1: Specification of basic notation	-	-

EN IEC 61158-6-10:2023 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO/IEC 9545	-	Information technology - Open Systems Interconnection - Application layer structure	-	-
ISO/IEC 9834-8	-	Information technology - Procedures for the operation of object identifier registration authorities - Part 8: Generation of universally unique identifiers (UUIDs) and their use in object identifiers	-	-
ISO/IEC 10646	-	Information technology - Universal coded character set (UCS)	-	-
ISO/IEC 10731	-	Information technology - Open Systems Interconnection - Basic Reference Model - Conventions for the definition of OSI services	-	-
ISO/IEC/IEEE 60559	2020	Information technology - Microprocessor Systems - Floating-Point arithmetic	-	-
ISO 8601-1	2019	Date and time - Representations for information interchange - Part 1: Basic rules	-	-
IEEE Std 802	2014	IEEE Standard for Local and metropolitan area networks: Overview and Architecture	-	-
IEEE Std 802.1AB	2016	IEEE Standard for Local and metropolitan area networks: Station and Media Access Control Connectivity Discovery	-	-
IEEE 802.1AC	2016	IEEE Standard for Local and metropolitan area networks - Media Access Control (MAC) Service Definition	-	-
IEEE 802.1AS	2020	IEEE Standard for Local and Metropolitan Area Networks - Timing and Synchronization for Time-Sensitive Applications	-	-
IEEE 802.1CB	2017	IEEE Standard for Local and metropolitan area networks - Frame Replication and Elimination for Reliability	-	-
IEEE 802.1Q	2018	IEEE Standard for Local and Metropolitan Area Networks, Bridges and Bridged Networks	-	-
IEEE 802.3	2018	IEEE Standard for Ethernet	-	-
IEEE 802.11	2020	IEEE Standard for Information Technology - Telecommunications and Information Exchange between Systems - Local and Metropolitan Area Networks - Specific Requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications	-	-
IEEE 802.15.1	2005	IEEE Standard for Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 15.1: Wireless medium access control (MAC) and physical layer (PHY) specifications for wireless personal area networks (WPANs)	-	-
IETF RFC 768	-	User Datagram Protocol	-	-

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IETF RFC 791	-	Internet Protocol Darpa Internet Program Protocol Specification	-	-
IETF RFC 792	-	Internet Control Message Protocol	-	-
IETF RFC 826	-	Ethernet Address Resolution Protocol: Or Converting Network Protocol Addresses to 48.bit Ethernet Address for Transmission on Ethernet Hardware	-	-
IETF RFC 1034	-	Domain names - concepts and facilities	-	-
IETF RFC 1213	-	Management Information Base for Network Management of TCP/IP-based Internets: MIB-II	-	-
IETF RFC 2131	-	Dynamic Host Configuration Protocol	-	-
IETF RFC 2132	-	DHCP Options and BOOTP Vendor Extensions	-	-
IETF RFC 2236	-	Internet Group Management Protocol, Version 2	-	-
IETF RFC 2365	-	Administratively Scoped IP Multicast	-	-
IETF RFC 2474	-	Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers	-	-
IETF RFC 2475	-	An Architecture for Differentiated Services	-	-
IETF RFC 2674	-	Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions	-	-
IETF RFC 2863	-	The Interfaces Group MIB	-	-
IETF RFC 3418	-	Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)	-	-
IETF RFC 3535	-	Overview of the 2002 IAB Network Management Workshop	-	-
IETF RFC 3621	-	Power Ethernet MIB	-	-
IETF RFC 4361	-	Node-specific Client Identifiers for Dynamic Host Configuration Protocol Version Four (DHCPv4)	-	-
IETF RFC 4363	-	Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual LAN Extensions	-	-
IETF RFC 4604	-	Using Internet Group Management Protocol Version 3 (IGMPv3) and Multicast Listener Discovery Protocol Version 2 (MLDv2) for Source-Specific Multicast	-	-
IETF RFC 4632	-	Classless Inter-domain Routing (CIDR): The Internet Address Assignment and Aggregation Plan	-	-
IETF RFC 4836	-	Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs)	-	-
IETF RFC 4944	-	Transmission of IPv6 Packets over IEEE 802.15.4 Networks	-	-

EN IEC 61158-6-10:2023 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IETF RFC 5227	-	IPv4 Address Conflict Detection	-	-
IETF RFC 5277	-	NETCONF Event Notifications	-	-
IETF RFC 5539	-	NETCONF over Transport Layer Security (TLS)	-	-
IETF RFC 5890	-	Internationalized Domain Names for Applications (IDNA): Definitions and Document Framework	-	-
IETF RFC 5905	-	Network Time Protocol Version_4: Protocol and Algorithms Specification	-	-
IETF RFC 6020	-	A Data Modeling Language for the Network Configuration Protocol (NETCONF)	-	-
IETF RFC 6021	-	Common YANG Data Types	-	-
IETF RFC 6087	-	Guidelines for Authors and Reviewers of YANG Data Model Documents	-	-
IETF RFC 6110	-	Mapping YANG to Document Schema Definition Languages and Validating NETCONF Content	-	-
IETF RFC 6151	-	Updated Security Considerations for the MD5 MessageDigest and the HMAC-MD5 Algorithms	-	-
IETF RFC 6241	-	Network Configuration Protocol (NETCONF)	-	-
IETF RFC 6243	-	With-defaults Capability for NETCONF	-	-
IETF RFC 6244	-	An Architecture for Network Management Using NETCONF and YANG	-	-
IETF RFC 6470	-	Network Configuration Protocol (NETCONF) Base Notifications	-	-
IETF RFC 6536	-	Network Configuration Protocol (NETCONF) Access Control Model	-	-
IETF RFC 6890	-	Special-Purpose IP Address Registries	-	-
IETF RFC 6918	-	Formally Deprecating Some ICMPv4 Message Types	-	-
IETF RFC 8342	-	Network Management Datastore Architecture (NMDA)	-	-
ITU-T G.781	-	Synchronization layer functions for frequency synchronization based on the physical layer	-	-
The Open Group, Publication C706	-	Technical standard DCE1.1: Remote Procedure Call	-	-
Metro Ethernet Forum - MEF 10.4	2018	Subscriber Ethernet Service Attributes	-	-
NIST FIPS PUB 180-4	2015	Federal Information Processing Standards Publication, Secure Standard (SHS)	-	-
NIST FIPS PUB 186-4	2013	Federal Information Processing Standards Publication, Digital Signature Standard (DSS),	-	-

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