

Industrial communication networks - Fieldbus
specifications - Part 1: Overview and guidance for the
IEC 61158 and IEC 61784 series

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

Industrial communication networks - Fieldbus specifications -
Part 1: Overview and guidance for the IEC 61158 and IEC 61784
series
(IEC 61158-1:2023)

Réseaux de communication industriels - Spécifications des
bus de terrain - Partie 1 : Vue d'ensemble et
recommandations pour les séries IEC 61158 et IEC 61784
(IEC 61158-1:2023)

Industrielle Kommunikationsnetze - Feldbusse - Teil 1:
Überblick und Leitfaden zu den Normen der Reihen IEC
61158 und IEC 61784
(IEC 61158-1:2023)

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European foreword

The text of document 65C/1199/FDIS, future edition 3 of IEC 61158-1, 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 61158-1:2023.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2024-01-20 level by publication of an identical national standard or by endorsement
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**Réseaux de communication industriels – Spécifications des bus de terrain –
Partie 1: Vue d'ensemble et recommandations pour les séries IEC 61158 et
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IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL COMMUNICATION NETWORKS –
FIELDBUS SPECIFICATIONS –****Part 1: Overview and guidance for the IEC 61158 and IEC 61784 series**

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NOTE Combinations of protocol types are specified in the IEC 61784-1 series and the IEC 61784-2 series.

IEC 61158-1 has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation. It is an International Standard.

This third edition cancels and replaces the second edition published in 2019. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) added the new technology AUTBUS specified in Type 28;
- b) additional profile within IEC 61784-2-8 referring to Type 23 (CP 8/6, CC-Link IE TSN);
- c) additional profile referring to Type 24 (CP 19/3, Σ -LINKII);
- d) additional profile within IEC 61784-2-19 referring to a new Type 27 (CP 19/4, MECHATROLINK-4).

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The language used for the development of this International Standard is English.

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INDUSTRIAL COMMUNICATION NETWORKS – FIELDBUS SPECIFICATIONS –

Part 1: Overview and guidance for the IEC 61158 and IEC 61784 series

1 Scope

This part of IEC 61158 specifies the generic concept of fieldbuses.

This document also presents an overview and guidance for the IEC 61158¹ series by:

- explaining the structure and content of the IEC 61158 series;
- relating the structure of the IEC 61158 series to the ISO/IEC 7498-1 OSI Basic Reference Model;
- showing the logical structure of the IEC 61784² series;
- showing how to use parts of the IEC 61158 series in combination with the IEC 61784 series;
- providing explanations of some aspects of the IEC 61158 series that are common to the type specific parts of the IEC 61158-5 series including the application layer service description concepts and the generic fieldbus data types.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms, definitions and abbreviated terms apply.

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

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

3.1.1

communication system

arrangement of hardware, software and propagation media to allow the transfer of messages from one application to another

3.1.2

fieldbus

communication system based on serial data transfer as typically used in industrial automation and process control applications

¹ In the following pages of this document, "IEC 61158" will be used as a qualifier for "IEC 61158 (all parts)".

² In the following pages of this document, "IEC 61784" will be used as a qualifier for "IEC 61784 (all parts)".