



SLOVENSKI STANDARD

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SIST EN 61784-3-1:2008

Industrijska komunikacijska omrežja - Profili - 3-1. del: Funkcijska varnost procesnih vodil - Dodatne specifikacije za CPF 1 (IEC 61784-3-1:2010)

Industrial communication networks - Profiles - Part 3-1: Functional safety fieldbuses - Additional specifications for CPF 1 (IEC 61784-3-1:2010)

Industrielle Kommunikationsnetze - Profile - Teil 3-1: Funktionale sichere Übertragung bei Feldbussen - Zusätzliche Festlegungen für die Kommunikationsprofilfamilie 1 (IEC 61784-3-1:2010)

Réseaux de communication industriels - Partie 3-1: Bus de terrain à sécurité fonctionnelle - Spécifications complémentaires pour le CPF 1 (CEI 61784-3-1:2010)

Ta slovenski standard je istoveten z: EN 61784-3-1:2010

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25.040.40	Merjenje in krmiljenje industrijskih postopkov	Industrial process measurement and control
35.100.05	Večslojne uporabniške rešitve	Multilayer applications

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EUROPEAN STANDARD
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August 2010

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English version

**Industrial communication networks -
Profiles -
Part 3-1: Functional safety fieldbuses -
Additional specifications for CPF 1
(IEC 61784-3-1:2010)**

Réseaux de communication industriels -
Partie 3-1: Bus de terrain à sécurité
fonctionnelle -
Spécifications complémentaires
pour le CPF 1
(CEI 61784-3-1:2010)

Industrielle Kommunikationsnetze -
Profile -
Teil 3-1: Funktional sichere Übertragung
bei Feldbussen -
Zusätzliche Festlegungen
für die Kommunikationsprofilfamilie 1
(IEC 61784-3-1:2010)

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 65C/591A/FDIS, future edition 2 of IEC 61784-3-1, 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 was approved by CENELEC as EN 61784-3-1 on 2010-07-01.

This European Standard supersedes EN 61784-3-1:2008.

The main technical changes with respect to EN 61784-3-1:2008 are listed below:

- updates in relation with changes in EN 61784-3;
- adjustment of Figure 5;
- change of sequence number from two octets to four octets in 7.2.2 to match the final protocol from the consortium.
- addition of details for time synchronization in 7.2.4;
- addition of information for safety response time in 9.3;
- addition of information in constraints for calculation of system characteristics in 9.5.

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The following dates were fixed:

- | | | |
|--|---|-------------------------|
| <ul style="list-style-type: none"> – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | <p>SIST EN 61784-3-1:2010
https://standards.iteh.ai/catalog/standards/sist/f7dd90e7-6aab-468a-add3-6e00404f2810/sist-en-61784-3-1-2010</p> | <p>(dop) 2011-04-01</p> |
| <ul style="list-style-type: none"> – latest date by which the national standards conflicting with the EN have to be withdrawn | | <p>(dow) 2013-07-01</p> |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61784-3-1:2010 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 60204-1	NOTE	Harmonized as EN 60204-1.
IEC 61158 series	NOTE	Harmonized in EN 61158 series (not modified).
IEC 61326-3-1	NOTE	Harmonized as EN 61326-3-1
IEC 61326-3-2	NOTE	Harmonized as EN 61326-3-2.
IEC 61496 series	NOTE	Harmonized in EN 61496 series (partially modified).
IEC 61508-5:2010	NOTE	Harmonized as EN 61508-5:2010 (not modified).
IEC 61508-6:2010	NOTE	Harmonized as EN 61508-6:2010 (not modified).
IEC 61784-2	NOTE	Harmonized as EN 61784-2.
IEC 61784-5 series	NOTE	Harmonized in EN 61784-5 series (not modified).
IEC 61800-5-2	NOTE	Harmonized as EN 61800-5-2.
IEC 62061	NOTE	Harmonized as EN 62061.
ISO 10218-1	NOTE	Harmonized as EN ISO 10218-1.
ISO 12100-1	NOTE	Harmonized as EN ISO 12100-1.
ISO 13849-1	NOTE	Harmonized as EN ISO 13849-1.
ISO 13849-2	NOTE	Harmonized as EN ISO 13849-2.
ISO 14121	NOTE	Harmonized as EN ISO 14121.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61131-2	-	Programmable controllers - Part 2: Equipment requirements and tests	EN 61131-2	-
IEC 61158-2	-	Industrial communication networks - Fieldbus specifications - Part 2: Physical layer specification and service definition	EN 61158-2	-
IEC 61158-3-1	-	Industrial communication networks - Fieldbus specifications - Part 3-1: Data-link layer service definition - Type 1 elements	EN 61158-3-1	-
IEC 61158-4-1	-	Industrial communication networks - Fieldbus specifications - Part 4-1: Data-link layer protocol specification - Type 1 elements	EN 61158-4-1	-
IEC 61158-5-5	-	Industrial communication networks - Fieldbus specifications - Part 5-5: Application layer service definition - Type 5 elements	EN 61158-5-5	-
IEC 61158-5-9	-	Industrial communication networks - Fieldbus specifications - Part 5-9: Application layer service definition - Type 9 elements	EN 61158-5-9	-
IEC 61158-6-5	-	Industrial communication networks - Fieldbus specifications - Part 6-5: Application layer protocol specification - Type 5 elements	EN 61158-6-5	-
IEC 61158-6-9	-	Industrial communication networks - Fieldbus specifications - Part 6-9: Application layer protocol specification - Type 9 elements	EN 61158-6-9	-
IEC 61508	Series	Functional safety of electrical/electronic/programmable electronic safety-related systems	EN 61508	Series
IEC 61508-1	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: General requirements	EN 61508-1	2010

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61508-2	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems	EN 61508-2	2010
IEC 61508-3	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 3: Software requirements	EN 61508-3	2010
IEC 61508-4	2010	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 4: Definitions and abbreviations	EN 61508-4	2010
IEC 61511	Series	Functional safety - Safety instrumented systems for the process industry sector	EN 61511	Series
IEC 61784-1	-	Industrial communication networks - Profiles - Part 1: Fieldbus profiles	EN 61784-1	-
IEC 61784-3	2010	Industrial communication networks - Profiles - Part 3: Functional safety fieldbuses - General rules and profile definitions	EN 61784-3	2010
IEC 61918	-	Industrial communication networks - Installation of communication networks in industrial premises	EN 61918	-
IEC 62280-1	-	Railway applications - Communication, signalling and processing systems - Part 1: Safety-related communication in closed transmission systems	-	-
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	-	-

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INTERNATIONAL STANDARD



**Industrial communication networks – Profiles –
Part 3-1: Functional safety fieldbuses – Additional specifications for CPF 1**

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**INDUSTRIAL COMMUNICATION NETWORKS –
PROFILES –****Part 3-1: Functional safety fieldbuses –
Additional specifications for CPF 1**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61784-3-1 has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial process measurement, control and automation.

This second edition cancels and replaces the first edition published in 2007. This edition constitutes a technical revision. The main changes with respect to the previous edition are listed below:

- updates in relation with changes in IEC 61784-3;
- adjustment of Figure 5;
- change of sequence number from two octets to four octets in 7.2.2 to match the final protocol from the consortium.
- addition of details for time synchronization in 7.2.4;
- addition of information for safety response time in 9.3;
- addition of information in constraints for calculation of system characteristics in 9.5.