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Industrijska komunikacijska omrežja - Profili - 3-3. del: Funkcijska varnost procesnih vodil - Dodatne specifikacije za CPF 3 (IEC 61784-3-3:2016)

Industrial communication networks - Profiles - Part 3-3: Functional safety fieldbuses - Additional specifications for CPF 3 (IEC 61784-3-3:2016)

Industrielle Kommunikationsnetze - Profile - Teil 3-3: Funktionale sichere Übertragung bei Feldbussen - Zusätzliche Festlegungen für die Kommunikationsprofilfamilie 3 (IEC 61784-3-3:2016)

Réseaux de communication industriels - Profils - Partie 3-3: Bus de terrain de sécurité fonctionnelle - Spécifications supplémentaires pour CPF 3 (IEC 61784-3-3:2016)

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<https://standards.iteh.ai/catalog/standards/sist/a2cb4c74-03ab-462c-bde6-4f0cfd757e/sist-en-61784-3-3-2018>

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**Industrial communication networks - Profiles - Part 3-3:
Functional safety fieldbuses - Additional specifications for CPF 3
(IEC 61784-3-3:2016)**

Réseaux de communication industriels - Profils - Partie 3-3:
Bus de terrain de sécurité fonctionnelle - Spécifications
supplémentaires pour CPF 3
(IEC 61784-3-3:2016)

Industrielle Kommunikationsnetze - Profile - Teil 3-3:
Funktional sichere Übertragung bei Feldbussen -
Zusätzliche Festlegungen für die
Kommunikationsprofilfamilie 3
(IEC 61784-3-3:2016)

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[SIST EN 61784-3-3:2018](https://standards.iteh.ai/catalog/standards/sist/a2cb4c74-03ab-462c-bde6-4a119191e1e2/EN-61784-3-3-2016)

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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

EN 61784-3-3:2017**European foreword**

The text of document 65C/851/FDIS, future edition 3 of IEC 61784-3-3, 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 61784-3-3:2017.

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- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2018-05-10
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-11-10

This document supersedes EN 61784-3-3:2010.

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Endorsement notice

The text of the International Standard IEC 61784-3-3:2016 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 60870-5-1	NOTE	Harmonized as EN 60870-5-1.
IEC 61000-6-7	NOTE	Harmonized as EN 61000-6-7.
IEC 61131-6	NOTE	Harmonized as EN 61131-6.
IEC 61158 (all parts)	NOTE	Harmonized as EN 61158 (all parts).
IEC 61496 (all parts)	NOTE	Harmonized as EN 61496 (all parts).
IEC 61508-1:2010	NOTE	Harmonized as EN 61508-1:2010 (not modified).
IEC 61508-4:2010	NOTE	Harmonized as EN 61508-4:2010 (not 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 61784-5 (all parts)	NOTE	Harmonized as EN 61784-5 (all parts).
IEC 61800-5-2	NOTE	Harmonized as EN 61800-5-2.
IEC 61804 (all parts)	NOTE	Harmonized as EN 61804 (all parts)
IEC 62443 (all parts)	NOTE	Harmonized as prEN 62443 (all parts)
IEC/TR 62685	NOTE	Harmonized as CLC/TR 62685.
ISO 10218-1	NOTE	Harmonized as EN ISO 10218-1.
ISO 12100	NOTE	Harmonized as EN ISO 12100.
ISO 13849 (all parts)	NOTE	Harmonized as EN ISO 13849 (all parts)

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 60204-1 (mod)	-	Safety of machinery - Electrical equipment of machines - Part 1: General requirements	-	-
IEC 61000-6-2	-	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments	EN 61000-6-2	-
IEC 61010-1	-	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements	EN 61010-1	-
IEC 61131-2	2007	Programmable controllers - Part 2: Equipment requirements and tests	EN 61131-2	2007
IEC 61131-3	-	Programmable controllers - Part 3: Programming languages	EN 61131-3	-
IEC 61158-2	-	Industrial communication networks - Fieldbus specifications - Part 2: Physical layer specification and service definition	EN 61158-2	-
IEC 61158-3-3	-	Industrial communication networks - Fieldbus specifications - Part 3-3: Data-link layer service definition - Type 3 elements	EN 61158-3-3	-
IEC 61158-4-3	-	Industrial communication networks - Fieldbus specifications - Part 4-3: Data-link layer protocol specification - Type 3 elements	EN 61158-4-3	-
IEC 61158-5-3	-	Industrial communication networks - Fieldbus specifications - Part 5-3: Application layer service definition - Type 3 elements	EN 61158-5-3	-
IEC 61158-5-10	-	Industrial communication networks - Fieldbus specifications - Part 5-10: Application layer service definition - Type 10 elements	EN 61158-5-10	-
IEC 61158-6-3	-	Industrial communication networks - Fieldbus specifications - Part 6-3: Application layer protocol specification - Type 3 elements	EN 61158-6-3	-
IEC 61158-6-10	-	Industrial communication networks - Fieldbus specifications - Part 6-10: Application layer protocol specification - Type 10 elements	EN 61158-6-10	-

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IEC 61326-3-1	-	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 3-1: Immunity requirements for safety-related systems and for equipment intended to perform safety-related functions (functional safety) – General industrial applications	EN 61326-3-1	-
IEC 61326-3-2	-	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 3-2: Immunity requirements for safety-related systems and for equipment intended to perform safety-related functions (functional safety) – Industrial applications with specified electromagnetic environment	-	-
IEC 61508	series	Functional safety of electrical/electronic/programmable electronic safety-related systems	EN 61508	series
IEC 61508-2	-	Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems	EN 61508-2	-
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 61784-2	-	Industrial communication networks - Profiles - Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC 8802-3	EN 61784-2	-
IEC 61784-3	-	Industrial communication networks - Profiles - Part 3: Functional safety fieldbuses - General rules and profile definitions	EN 61784-3	-
IEC 61784-5-3	-	Industrial communication networks - Profiles - Part 5-3: Installation of fieldbuses - Installation profiles for CPF 3	EN 61784-5-3	-
IEC 61918 (mod)	2013	Industrial communication networks - Installation of communication networks in industrial premises	EN 61918	2013
IEC 62061	-	Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems	EN 62061	-
IEC 62280	2014	Railway applications - Communication, signalling and processing systems - Safety related communication in transmission systems	-	-
ISO 13849-1	2006	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design	EN ISO 13849-1	2008
ISO 13849-2	-	Safety of machinery - Safety-related parts of control systems - Part 2: Validation	EN ISO 13849-2	-
IEC/TR 62390	-	Common automation device - Profile guideline	-	-



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NORME INTERNATIONALE



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

**Réseaux de communication industriels – Profils –
Partie 3-3: Bus de terrain de sécurité fonctionnelle – Spécifications
supplémentaires pour CPF 3**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

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- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

International Standard IEC 61784-3-3 has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation.

This third edition cancels and replaces the second edition published in 2010. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

- Legacy V1-mode removed from this protocol edition;
- Protocol extensions to protect against possible loopbacks (LP extensions);
- Protocol extensions to keep SIL3 for safety networks with large numbers of participants (XP extensions) and subsequent new F-Parameter "F_CRC_Seed";
- Introduction of random and disjoint Codename based MonitoringNumbers (MNR) besides to the previous Consecutive Numbers;

- Provisions for Channel Granular Passivation and subsequent new F-Parameter "F_Passivation";
- GSD extensions due to new F-Parameters;
- Notations according to the CP3 family in IEC 61158 (e.g. IO Controller);
- Additional diagnosis message types;
- Diverse error corrections and fixes of typos;
- Updated documents in bibliography.

The text of this standard is based on the following documents:

FDIS	Report on voting
65C/851/FDIS	65C/854/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61784-3 series, published under the general title *Industrial communication networks – Profiles – Functional safety fieldbuses*, can be found on the IEC website.

iTeh STANDARD PREVIEW

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed, [SIST EN 61784-3-3:2018](https://standards.iteh.ai/catalog/standards/sist/a2cb4c74-03ab-462c-bde6-4f0cfd757e/sist-en-61784-3-3-2018)
- withdrawn, <https://standards.iteh.ai/catalog/standards/sist/a2cb4c74-03ab-462c-bde6-4f0cfd757e/sist-en-61784-3-3-2018>
- replaced by a revised edition, or
- amended.

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