SLOVENSKI STANDARD
SIST EN 61784-5-3:2012

01-junij-2012

Nadomešča:

SIST EN 61784-5-3:2008

Industrijska komunikacijska omrežja - Profili - 5-3. del: Inštalacija procesnih vodil - Inštalacijski profili za CPF 3 (IEC 61784-5-3:2010)

Industrial communication networks - Profiles - Part 5-3: Installation of fieldbuses - Installation profiles for CPF 3 (IEC 61784-5-3:2010)

Industrielle Kommunikationsnetze - Profile - Teil 5-3: Feldbusinstallation - Installationsprofile für die Kommunikationsprofilfamilie 3 (IEC 61784-5-3:2010)

Réseaux de communication industriels - Profils - Partie 5-3: Installation des bus de terrain - Profils d'installation pour CPF 3 (CEI 61784-5-3:2010)

Ta slovenski standard je istoveten z: EN 61784-5-3:2012

ICS:

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

SIST EN 61784-5-3:2012 en

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61784-5-3

April 2012

ICS 25.040.40; 35.100.40

Supersedes EN 61784-5-3:2008

English version

Industrial communication networks - Profiles - Part 5-3: Installation of fieldbuses - Installation profiles for CPF 3

(IEC 61784-5-3:2010)

Réseaux de communication industriels - Profils - Partie 5-3: Installation des bus de terrain - Profils d'installation pour CPF 3 (CEI 61784-5-3:2010)

Industrielle Kommunikationsnetze - Profile - Teil 5-3: Feldbusinstallation - Installationsprofile für die Kommunikationsprofilfamilie 3 (IEC 61784-5-3:2010)

This European Standard was approved by CENELEC on 2011-10-19. 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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/602/FDIS, future edition 2 of IEC 61784-5-3, 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 61784-5-3:2012.

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)	2012-10-20
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2014-10-19

This document supersedes EN 61784-5-3:2008.

EN 61784-5-3:2012 includes an addition concerning transmission performance measurement (see C.6.3.2.1.2).

This standard is to be used in conjunction with IEC 61918, second edition (2010-07), together with the European Common Modification published with EN 61918:2008.

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 61784-5-3:2010 was approved by CENELEC as a European Standard without any modification.

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.

Publication	Year	Title	EN/HD	Year
-	-	Electrical apparatus for potentially explosive atmospheres - Intrinsic safety 'i'	EN 50020	-
IEC 60079-0 + corr. December	2007 2010	Explosive atmospheres - Part 0: Equipment - General requirements	EN 60079-0	2009
IEC 60079-11 + corr. December	2006 2006	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"	EN 60079-11	2007
IEC 60079-27	2008	Explosive atmospheres - Part 27: Fieldbus intrinsically safe concept (FISCO)	EN 60079-27	2008
IEC 60512-6-3	-	Connectors for electronic equipment - Tests and measurements - Part 6-3: Dynamic stress tests - Test 6c: Shock	EN 60512-6-3	-
IEC 60512-6-4	-	Connectors for electronic equipment - Tests and measurements - Part 6-4: Dynamic stress tests - Test 6d: Vibration (sinusoidal)	EN 60512-6-4	-
IEC 60793-2-10	2007	Optical fibres - Part 2-10: Product specifications - Sectional specification for category A1 multimode fibres	EN 60793-2-10[1)]	2007
IEC 60793-2-50	2008	Optical fibres - Part 2-50: Product specifications - Sectional specification for class B single-mode fibres	EN 60793-2-50	2008
IEC 61000-4-2	2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61076-2-107	2010	Connectors for electronic equipment - Product requirements - Part 2-107: Detail specification for circular hybrid connectors M12 with electrical and fibre-optic contacts with screw-locking	EN 61076-2-107	2010
IEC 61156-5 + corr. May + corr. February	2009 2009 2010	Multicore and symmetrical pair/quad cables for digital communications - Part 5: Symmetrical pair/quad cables with transmission characteristics up to 1 000 MHz - Horizontal floor wiring - Sectional specification	-	-

[1)] EN 60793-2-10 is superseded by EN 60793-2-10:2011, which is based on IEC 60793-2-10:2011.

Publication	Year	Title	EN/HD	Year
IEC 61508	Series	Functional safety of electrical/electronic/programmable electronic safety-related systems	EN 61508	Series
IEC 61754-24-11	-	Fibre optic interconnecting devices and passive components - Fibre optic connector interfaces - Part 24-11: Type SC-RJ connectors with protective housings based on IEC 61076-3-117	EN 61754-24-11	-
IEC 61918	2010	Industrial communication networks - Installation of communication networks in industrial premises	-	-
ANSI TIA/EIA-485-A	-	Electrical Characteristics of Generators and Receivers for Use in Balanced Digital Multipoint Systems	-	-

IEC 61784-5-3

Edition 2.0 2010-07

INTERNATIONAL STANDARD

colour inside

Industrial communication networks – Profiles – Part 5-3: Installation of fieldbuses – Installation profiles for CPF 3

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRICE CODE XD

ICS 25.040.40; 35.100.40

ISBN 978-2-88912-056-7

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

INDUSTRIAL COMMUNICATION NETWORKS – PROFILES –

Part 5-3: Installation of fieldbuses – Installation profiles for CPF 3

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.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
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.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61784-5-3 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.

This edition includes the technical changes of the corrigendum for the first edition in 2008 and an addition concerning transmission performance measurement (see Annex C.6.3.2.1.2).

This standard is to be used in conjunction with IEC 61918:2010.

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

FDIS	Report on voting
65C/602/FDIS	65C/616/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 61784-5 series, published under the general title *Industrial communication networks – Profiles – Installation of fieldbuses*, can be found on the IEC website.

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,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This International Standard is one of a series produced to facilitate the use of communication networks in industrial control systems.

IEC 61918:2010 provides the common requirements for the installation of communication networks in industrial control systems. This installation profile standard provides the installation profiles of the communication profiles (CP) of a specific communication profile family (CPF) by stating which requirements of IEC 61918 fully apply and, where necessary, by supplementing, modifying, or replacing the other requirements (see Figure 1).

For general background on fieldbuses, their profiles, and relationship between the installation profiles specified in this standard, see IEC/TR 61158-1.

Each CP installation profile is specified in a separate annex of this standard. Each annex is structured exactly as the reference standard IEC 61918 for the benefit of the persons representing the roles in the fieldbus installation process as defined in IEC 61918 (planner, installer, verification personnel, validation personnel, maintenance personnel, administration personnel). By reading the installation profile in conjunction with IEC 61918, these persons immediately know which requirements are common for the installation of all CPs and which are modified or replaced. The conventions used to draft this standard are defined in Clause 5.

The provision of the installation profiles in one standard for each CPF (for example IEC 61784-5-3 for CPF 3), allows readers to work with standards of a convenient size.

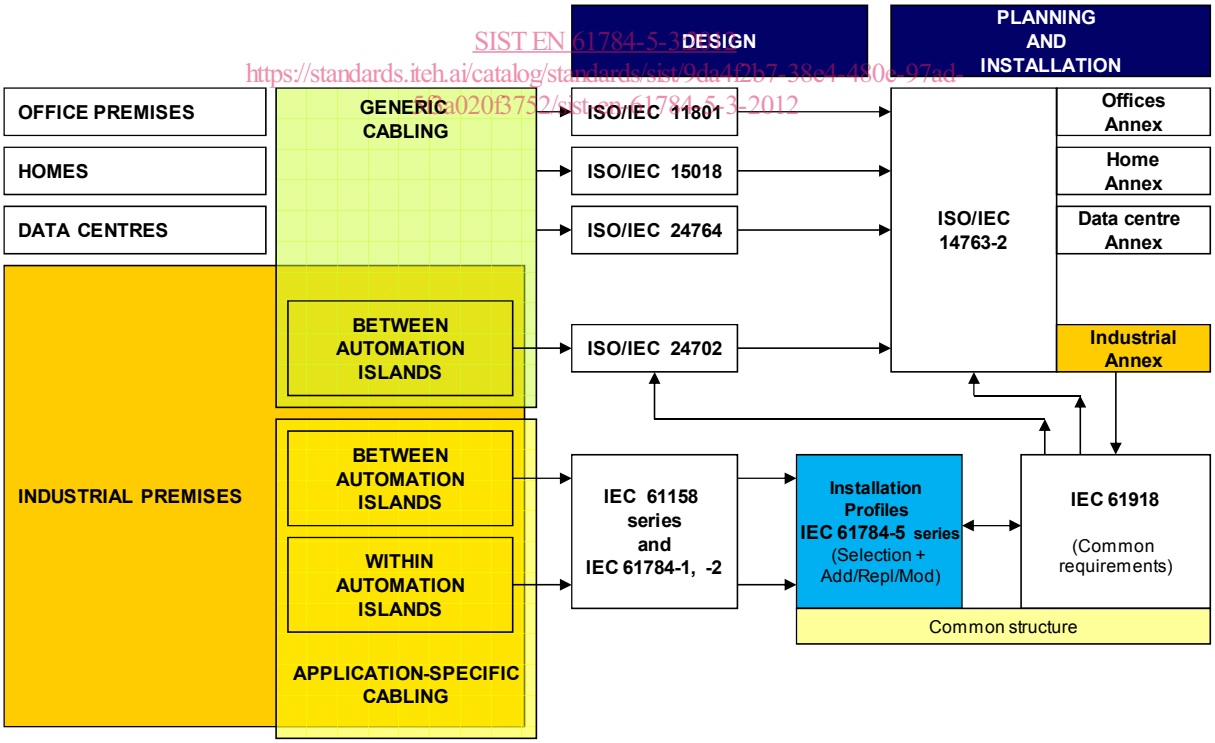

Figure 1 – Standards relationships

INDUSTRIAL COMMUNICATION NETWORKS – PROFILES –

Part 5-3: Installation of fieldbuses – Installation profiles for CPF 3

1 Scope

This part of IEC 61784 specifies the installation profiles for CPF 3 (PROFIBUS/PROFINET)[1].

The installation profiles are specified in the annexes. These annexes are read in conjunction with IEC 61918:2010.

2 Normative references

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.

IEC 61918:2010, *Industrial communication networks – Installation of communication networks in industrial premises*

The normative references of IEC 61918:2010, Clause 2, apply. For profile specific normative references, see Clause(s) A.2, B.2 and C.2.

3 Terms, definitions and abbreviated terms

For the purposes of this document, the terms, definitions and abbreviated terms of IEC 61918:2010, Clause 3, apply. For profile specific terms, definitions and abbreviated terms see Clause(s) A.3, B.3 and C.3.

4 CPF 3: Overview of installation profiles

CPF 3 consists of six communication profiles as specified in IEC 61784-1 and IEC 61784-2.

The installation requirements for CP 3/1 (PROFIBUS with physical layer according to RS 485, RS 485-IS, and fibre) are specified in Annex A.

The installation requirements for CP 3/2 (PROFIBUS with physical layer according to MBP, MBP-IS, MBP-LP) are specified in Annex B.

The installation requirements for CP 3/3, CP 3/4, CP 3/5, and CP 3/6 (PROFINET) are specified in Annex C.

---

[1] PROFIBUS and PROFINET are trade names of the non-profit organization PROFIBUS Nutzerorganisation e.V. (PNO). This information is given for the convenience of users of this International Standard and does not constitute an endorsement by IEC of the trade names holder or any of its products. Compliance to this profile does not require use of the trade names. Use of the trade names PROFIBUS and PROFINET requires permission of the trade name holder.

5 Installation profile conventions

The numbering of the clauses and subclauses in the annexes of this standard corresponds to the numbering of IEC 61918 main clauses and subclauses.

The annex clauses and subclauses of this standard supplement, modify, or replace the respective clauses and subclauses in IEC 61918.

Where there is no corresponding subclause of IEC 61918 in the normative annexes in this standard, the subclause of IEC 61918 applies without modification.

The annex heading letter represents the installation profile assigned in Clause 4. The annex (sub)clause numbering following the annex letter shall represent the corresponding (sub)clause numbering of IEC 61918.

EXAMPLE "Annex B.4.4" in IEC 61784-5-3 means that CP 3/2 specifies the Subclause 4.4 of IEC 61918.

All main clauses of IEC 61918 are cited and apply in full unless otherwise stated in each normative installation profile annex.

If all subclauses of a (sub)clause are omitted, then the corresponding IEC 61918 (sub)clause applies.

If in a (sub)clause it is written "Not applicable", then the corresponding IEC 61918 (sub)clause does not apply.

If in a (sub)clause it is written "*Addition*", then the corresponding IEC 61918 (sub)clause applies with the additions written in the profile.

If in a (sub)clause it is written "*Replacement*", then the text provided in the profile replaces the text of the corresponding IEC 61918 (sub)clause.

NOTE A replacement can also comprise additions.

If in a (sub)clause it is written "*Modification*", then the corresponding IEC 61918 (sub)clause applies with the modifications written in the profile.

If all (sub)clauses of a (sub)clause are omitted but in this (sub)clause it is written *"(Sub)clause x has addition*" (or "*replacement*", or "*modification*") or *"*(Sub)clause is not applicable.", then (sub)clause x becomes valid as declared and all the other corresponding IEC 61918 (sub)clauses apply.

6 Conformance to installation profiles

Each installation profile within this standard includes part of IEC 61918:2010. It may also include defined additional specifications.

A statement of compliance to an installation profile of this standard shall be stated[2] as either

Compliance to IEC 61784-5-3:2010[3] for CP 3/m <name> or

Compliance to IEC 61784-5-3 (Ed.2.0) for CP 3/m <name>

where the name within the angle brackets < > is optional and the angle brackets are not to be included. The m within CP 3/m shall be replaced by the profile number 1 to 6.

---

2 In accordance with ISO/IEC Directives

3 The date should not be used when the edition number is used.