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Irish Standard
I.S. EN 61784-5-3:2013

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

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December 2013

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English version

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

(IEC 61784-5-3:2013)

Réseaux de communication industriels - Profils - Partie 5-3: Installation des bus de terrain - Profils d'installation pour CPF 3 (CEI 61784-5-3:2013)

Industrielle Kommunikationsnetze - Profile - Teil 5-3: Feldbusinstallation - Installationsprofile für die Kommunikationsprofilfamilie 3 (IEC 61784-5-3:2013)

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Foreword

The text of document 65C/738/FDIS, future edition 3 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 61784-5-3:2013.

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)	2014-07-18
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This document supersedes EN 61784-5-3:2012.

EN 61784-5-3:2013 includes the following significant technical changes with respect to EN 61784-5-3:2012:

– an addition of 4-pair cabling (see C.4.4.1.2.1 and C.5.3.2);

– an addition of the connector M12 X-Coding (see C.4.4.2.2);

– an addition of the definition of end-to-end links (see C.4.4.3.1);

– a revision of Table C.17 (see C.5.2.1) and a formula for the NEXT limits of end-to-end links (see C.6.3.2.1.2).

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NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Annex ZA of EN 61918:2013 applies, except as follows:

Publication	Year	Title	EN/HD	Year
Addition to Annex ZA of EN 61918:2013:				
IEC 61918	2013	Industrial communication networks - Installation of communication networks in industrial premises	EN 61918	2013

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IEC 61784-5-3

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

Réseaux de communication industriels – Profils – Partie 5-3: Installation des bus de terrain – Profils d'installation pour CPF 3

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Réseaux de communication industriels – Profils – Partie 5-3: Installation des bus de terrain – Profils d'installation pour CPF 3

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INDUSTRIAL COMMUNICATION NETWORKS – PROFILES –

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

FOREWORD

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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 third edition cancels and replaces the second edition published in 2010. This edition constitutes a technical revision.

This edition includes an addition of 4-pair cabling (see C.4.4.1.2.1and C.5.3.2), an addition of the connector M12 X-Coding (see C.4.4.2.2), an addition of the definition of end-to-end links (see C.4.4.3.1), a revision of Table C.17 (see C.5.2.1) and a formula for the NEXT limits of end-to-end links (see C.6.3.2.1.2).

This standard is to be used in conjunction with IEC 61918:2013.

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

FDIS	Report on voting
65C/738/FDIS	65C/743/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 IEC 61784-5 series, 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.

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INTRODUCTION

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

IEC 61918:2013 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 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.

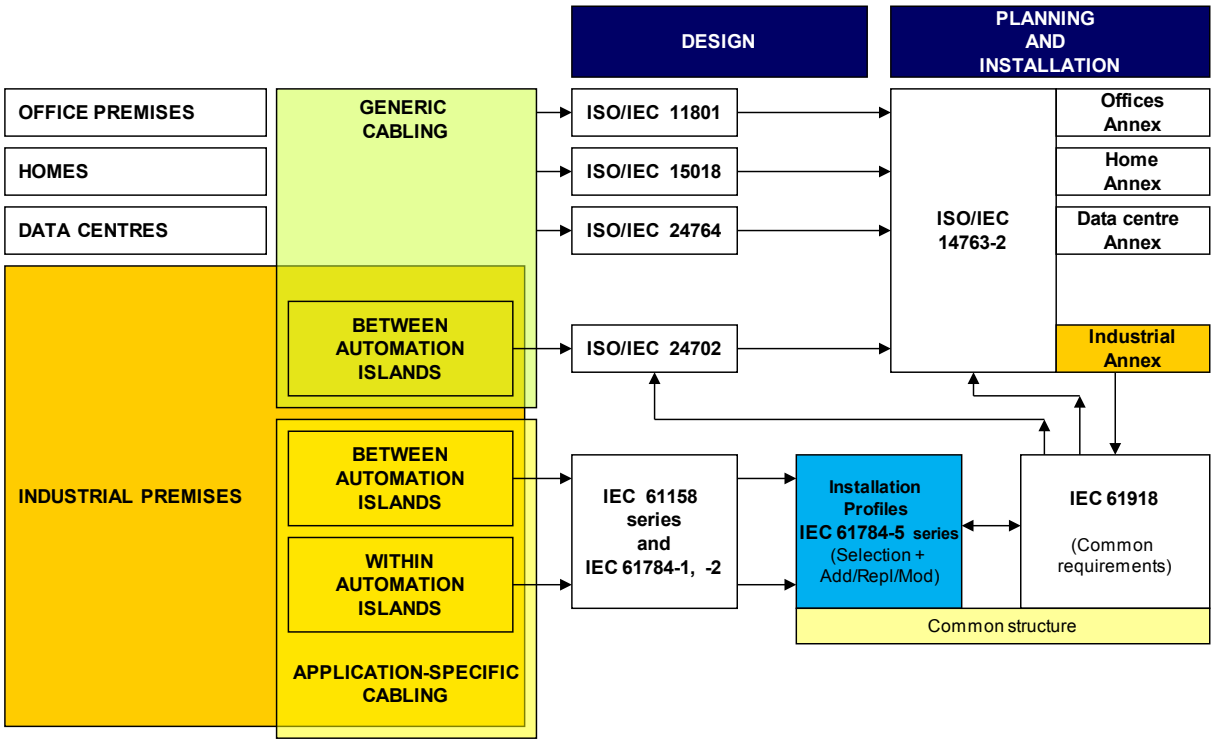

Figure 1 – Standards relationships

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INDUSTRIAL COMMUNICATION NETWORKS – PROFILES –

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

1 Scope

This part of IEC 61784-5 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 61918:2013.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61918:2013, *Industrial communication networks – Installation of communication networks in industrial premises*

The normative references of IEC 61918:2013, 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 61918:2013, 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.

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[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 document 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.

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