BS EN IEC 62769-103-4:2020

BSI Standards Publication

Field device integration (FDI)

Part 103-4: Profiles — PROFINET

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National foreword

This British Standard is the UK implementation of EN IEC 62769-103-4:2020. It is identical to IEC 62769-103-4:2020. It supersedes BS EN 62769-103-4:2015, which will be withdrawn on 1 May 2023.

The UK participation in its preparation was entrusted to Technical Committee GEL/65/3, Industrial communications: process measurement and control, including fieldbus.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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EUROPEAN STANDARD

NORME EUROPÉENNE

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Supersedes EN 62769-103-4:2015 and all of its amendments and corrigenda (if any)

English Version

Field device integration (FDI) - Part 103-4: Profiles - PROFINET (IEC 62769-103-4:2020)

Intégration des appareils de terrain (FDI) - Partie 103-4: Profils - PROFINET (IEC 62769-103-4:2020)

Feldgeräteintegration (FDI) - Teil 103-4: Profile - PROFINET (IEC 62769-103-4:2020)

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European foreword

The text of document 65E/623/CDV, future edition 2 of IEC 62769-103-4, prepared by SC 65E "Devices and integration in enterprise systems" 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 62769-103-4:2020.

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) 2021-03-02
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-06-02

This document supersedes EN 62769-103-4:2015 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62769-103-4:2020 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 61784-1	NOTE	Harmonized as EN IEC 61784-1
IEC 61804-4	NOTE	Harmonized as EN 61804-4

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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.

Publication	Year	Title	EN/HD	Year
IEC 61158-5-10	-	Industrial communication networks - Fieldbus specifications - Part 5-10: Application layer service definition - Type 10 elements	EN IEC 61158-5-10	-
IEC 61784-2	-	Industrial communication networks - Profiles - Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC/IEEE 8802-3	EN IEC 61784-2	-
IEC 61804	series	Function blocks (FB) for process control and electronic device description language (EDDL)	EN IEC 61804	series
IEC 62541-100	2015	OPC Unified Architecture - Part 100: Device Interface	EN 62541-100	2015
IEC 62769-2	-	Field Device Integration (FDI) - Part 2: FDI Client	-	-
IEC 62769-4	-	Field Device Integration (FDI) - Part 4: FDI Packages	-	-
IEC 62769-5	-	Field Device Integration (FDI) - Part 5: FDI Information Model	-	-
IEC 62769-6	-	Field Device Integration (FDI) - Part 6: FDI Technology Mapping	-	-
IEC 62769-7	-	Field Device Integration (FDI) - Part 7: FDI Communication Devices	-	-
PI Order No: 2.122	2008	Specification for PROFIBUS - Device Description and Device Integration - Volume 1: GSD, V5.1, July 2008: GSD	-	-
PI Order No.: 2.352	2014	GSDML Specification for PROFINET IO	-	-

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FIELD DEVICE INTEGRATION (FDI) –

Part 103-4: Profiles – PROFINET

FOREWORD

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International Standard IEC 62769-103-4 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

This second edition cancels and replaces the first edition published in 2015. This edition constitutes a technical revision.

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

a) support for generic protocol extension for faster adoption of other technologies;
b) support for Package Developers to build EDDs targeted for today's EDD bases system under a single development tool.

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The text of this International Standard is based on the following documents:

CDV	Report on voting
65E/623/CDV	65E/686A/RVC 65E/686/RVC

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

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

A list of all parts in the IEC 62769 series, published under the general title *Field Device Integration (FDI)*, can be found on the IEC website.

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

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

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FIELD DEVICE INTEGRATION (FDI) –

Part 103-4: Profiles – PROFINET

1 Scope

This part of IEC 62769 specifies an FDI profile of IEC 62769 for IEC 61784-2_CP 3/4, IEC 61784-2_CP3/5 and IEC 61784-2_CP3/6 (PROFINET[1]).

2 Normative references

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.

IEC 61158-5-10, *Industrial communication networks - Fieldbus specifications - Part 5-10: Application layer service definition - Type 10 elements*

IEC 61784-2, *Industrial communication networks - Profiles - Part 2: Additional fieldbus profiles for real-time networks based on ISO/IEC/IEEE 8802-3*

IEC 61804 (all parts), *Function blocks (FB) for process control and Electronic Device Description Language (EDDL)*

IEC 62541-100:2015, *OPC Unified Architecture - Part 100: Device Interface*

IEC 62769-2, *Field Device Integration (FDI) - Part 2: FDI Client*

IEC 62769-4, *Field Device Integration (FDI) - Part 4: FDI Packages*

IEC 62769-5, *Field Device Integration (FDI) - Part 5: FDI Information Model*

IEC 62769-6, *Field Device Integration (FDI) - Part 6: FDI Technology Mapping*

IEC 62769-7, *Field Device Integration (FDI) - Part 7: FDI Communication Devices*

PI Order No.: 2.122:2008, *Specification for PROFIBUS – Device Description and Device Integration – Volume 1: GSD, V5.1, July 2008: GSD;* available at <www.PROFIBUS.com>

PI Order No.: 2.352:2014, *GSDML Specification for PROFINET IO;* available at <www.profibus.com>

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1 PROFINET is the trade name of the non-profit consortium PROFIBUS & PROFINET International. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the trademark holder or any of its products. Compliance does not require use of the trade name. Use of the trade name requires permission of the trade name holder.

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3 Terms, definitions, abbreviated terms and conventions

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61158-5-10, IEC 61784-2, IEC 61804 (all parts), IEC 62541-100, IEC 62769-2, IEC 62769-4, IEC 62769-5, IEC 62769-6, IEC 62769-7 and PI Order No.: 2.352:2014 apply.

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

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

3.2 Abbreviated terms

For the purposes of this document, the following abbreviated terms and acronyms apply:

DCP	Discovery and basic configuration protocol (according to IEC 61158-5-10)
DNS	Domain name system
EDD	Electronic Device Description
EDDL	Electronic Device Description Language (see IEC 61804)
GSD	General station description (see PI Order No.: 2.122:2008)
GSDML	GSD markup language (see PI Order No.: 2.352:2014)
IP	Internet protocol (IETF RFC 791)
UIP	User Interface plug-in
UUID	Universal unique identifier (see ISO/IEC 11578)
XML	Extensible markup language (see REC-xml-20081126)

3.3 Conventions

3.3.1 EDDL syntax

This part of IEC 62769 specifies content for the EDD component that is part of FDI Communication Packages. The specification content using EDDL syntax uses the font `Courier New`. The EDDL syntax is used for method signature, variable, data structure and component declarations.

3.3.2 XML syntax

XML syntax examples use the font `Courier New`. The XML syntax is used to describe XML document schema.

Example: `<xs:simpleType name="ExampleType">`

3.3.3 Capitalizations

IEC 62769 (all parts) uses capitalized terms to emphasize that these terms have an FDI specific meaning.

Some of these terms using an acronym as a prefix for example

- FDI Client, or
- FDI Server.

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