

STN	Integrácia softvérového nástroja (FDI) Časť 100: Profily Kmeňové protokoly	STN EN IEC 62769-100
		18 4012

Field device integration (FDI) - Part 100: Profiles - Generic protocols

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola označená vo Vestníku ÚNMS SR č. 01/21

Obsahuje: EN IEC 62769-100:2020, IEC 62769-100:2020

132303

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 62769-100

November 2020

ICS 25.040.40; 35.100.05

English Version

**Field device integration (FDI) - Part 100: Profiles - Generic
protocols
(IEC 62769-100:2020)**

Intégration des appareils de terrain (FDI) - Partie 100:
Profils - Protocoles génériques
(IEC 62769-100:2020)

Feldgeräteintegration (FDI) - Teil 100: Profile - Allgemeine
Protokolle
(IEC 62769-100:2020)

This European Standard was approved by CENELEC on 2020-10-29. 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 62769-100:2020 (E)**European foreword**

The text of document 65E/739/FDIS, future edition 1 of IEC 62769-100, 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 62769-100:2020.

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) 2021-07-29
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-10-29

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 62769-100:2020 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 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 61804	series	Function blocks (FB) for process control and electronic device description language (EDDL)	EN IEC 61804	series
IEC 61804-3	-	Devices and integration in enterprise systems - Function blocks (FB) for process control and electronic device description language (EDDL) - Part 3: EDDL syntax and semantics	EN IEC 61804-3	-
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 62769-7	-	Field Device Integration (FDI) - Part 7: FDI Communication Devices	-	-



IEC 62769-100

Edition 1.0 2020-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Field device integration (FDI) –
Part 100: Profiles – Generic protocols**

**Intégration des appareils de terrain (FDI) –
Partie 100: Profils – Protocoles génériques**





THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2020 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
 3, rue de Varembé
 CH-1211 Geneva 20
 Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform
 The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished
 Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc
 If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC - webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.



IEC 62769-100

Edition 1.0 2020-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Field device integration (FDI) –
Part 100: Profiles – Generic protocols**

**Intégration des appareils de terrain (FDI) –
Partie 100: Profils – Protocoles génériques**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 25.040.40; 35.100.05

ISBN 978-2-8322-8858-0

Warning! Make sure that you obtained this publication from an authorized distributor.

Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

CONTENTS

FOREWORD	4
1 Scope	6
2 Normative references	6
3 Terms, definitions, abbreviated terms and conventions	6
3.1 Abbreviated terms	7
3.2 Conventions	7
3.2.1 EDDL syntax	7
3.2.2 XML syntax	7
3.2.3 Capitalizations	7
4 Profile for Generic Protocols	8
4.1 General	8
4.2 Catalog profile	8
4.2.1 Protocol support file	8
4.2.2 CommunicationProfile definition	8
4.2.3 Profile device	8
4.2.4 Protocol version information	9
4.3 Associating a Package with a device	9
4.3.1 Device type identification mapping	9
4.3.2 Device type revision mapping	10
4.4 Information Model mapping	10
4.4.1 ProtocolType definition	10
4.4.2 DeviceType mapping	11
4.4.3 FunctionalGroup identification definition	11
4.5 Topology elements	12
4.5.1 ConnectionPoint definition	12
4.5.2 Communication Device definition	13
4.5.3 Communication service provider definition	14
4.5.4 Network definition	14
4.6 Methods	15
4.6.1 Methods for FDI Communication Servers	15
4.6.2 Methods for Gateways	19
4.6.3 Transfer service parameters	26
Annex A (normative) Topology Scan result schema	27
A.1 General	27
A.2 Network	27
A.3 GenericNetworkT	27
A.4 GenericConnectionPointT	27
A.5 GenericIdentificationT	28
A.6 GenericAddressT	29
Annex B (normative) Transfer service parameters	30
B.1 General	30
B.2 sendData	30
B.3 receiveData	30
B.4 TransferSendDataT	30
B.5 EddDataTypeInfoListT	31

B.6	EddTypeInfoT	31
B.7	EddTypeT	32
B.8	TransferResultDataT	33
Annex C (normative)	Protocol-specific definitions	34
C.1	General	34
C.2	Header	34
C.3	ProtocolIdentifier	34
C.4	Address	34
C.5	Manufacturer	34
C.6	DeviceModel	35
C.7	DeviceRevision	35
C.8	SerialNumber	35
C.9	Tag	35
C.10	ProfileId	35
C.11	Version	36
C.12	ProtocolSupportFile	36
Bibliography	37	
Table 1 – ProtocolSupportFile for FDI Device Packages	8	
Table 2 – Catalog values for profile devices	9	
Table 3 – Device identification information mapping	10	
Table 4 – Device revision information mapping	10	
Table 5 – Protocol type GenericProtocol	11	
Table 6 – Inherited DeviceType property mapping	11	
Table 7 – Generic Protocol Device Types identification attributes	12	
Table 8 – ConnectionPoint type for Generic Protocols	12	
Table 9 – Method Connect arguments	15	
Table 10 – Method Disconnect arguments	16	
Table 11 – Method Transfer arguments	17	
Table 12 – EddTypeInfo Data-Type Structure	17	
Table 13 – EddTypeEnum Values	18	
Table 14 – Method SetAddress arguments	19	
Table 15 – Connect service arguments	20	
Table 16 – Method Transfer arguments	22	
Table 17 – Method SetAddress arguments	25	
Table A.1 – Elements of GenericNetworkT	27	
Table A.2 – Attributes of GenericConnectionPointT	28	
Table A.3 – Elements of GenericConnectionPointT	28	
Table A.4 – Attributes of GenericIdentificationT	29	
Table B.1 – Attributes of TransferSendDataT	31	
Table B.2 – Elements of TransferSendDataT	31	
Table B.3 – Elements of EddTypeInfoListT	31	
Table B.4 – Attributes of EddTypeInfoT	32	
Table B.5 – Enumerations of EddTypeT	33	
Table B.6 – Attributes of TransferResultDataT	33	

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIELD DEVICE INTEGRATION (FDI) –

Part 100: Profiles – Generic protocols

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 62769-100 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

FCG TS62769-100 Edition 1.1, *Field Device Integration Part 100: Profiles – Generic Protocols*, a specification of the FieldComm Group, PROFIBUS Nutzerorganisation e. V., OPC Foundation and FDT Group, serves as a basis for the elaboration of this standard.

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

FDIS	Report on voting
65E/739/FDIS	65E/743/RVD

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.

FIELD DEVICE INTEGRATION (FDI) –

Part 100: Profiles – Generic protocols

1 Scope

This part of IEC 62769 specifies an FDI profile of IEC 62769 for generic protocols. That means that all interfaces are defined, and a host can add support for more protocols without changing its implementation. Nevertheless, there are some protocol-specific definitions (PSD) that need to be specified per protocol using this profile. Annex C specifies what PSDs need to be defined per protocol so that FDI Device Packages, FDI Communication Packages for Gateways and FDI Communication Servers, FDI Communication Servers, Gateways and Devices supporting such a protocol can work together in a host not aware about this specific protocol.

NOTE A host not using an FDI Communication Server but a proprietary mechanism for communication defines its own means to deal with this profile to support several protocols without changing its implementation. This is specific to the proprietary way how the communication driver is bound to the host.

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

IEC 61804-3, *Function blocks (FB) for process control and Electronic Device Description Language (EDDL) – Part 3: EDDL syntax and semantics*

IEC 62541-100:2015, *OPC Unified Architecture – Part 100: OPC UA for Devices*

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

koniec náhľadu – text d'alej pokračuje v platenej verzii STN