Function blocks (FB) for process control and Electronic Device Description Language (EDDL) - Part 3: Electronic Device Description Language (EDDL)

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 61804-3:2015 sisaldab Euroopa standardi EN 61804-3:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 61804-3:2015 consists of the English text of the European standard EN 61804-3:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.09.2015.	Date of Availability of the European standard is 18.09.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Blocs Fonctionnels (FB) pour les procédés industriels et le Langage de Description Electronique de Produit (EDDL) - Partie 3: Sémantique et syntaxe EDDL (IEC 61804-3:2015)

Funktionsbausteine für die Prozessautomation und elektronische Gerätebeschreibungssprache - Teil 3: Elektronische Gerätebeschreibungssprache (EDDL) (IEC 61804-3:2015)

This European Standard was approved by CENELEC on 2015-07-14. 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.

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European Committee for Electrotechnical Standardization
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European foreword

The text of document 65E/451/FDIS, future edition 3 of IEC 61804-3, 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 61804-3:2015.

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)	2016-04-14
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-07-14

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Endorsement notice

The text of the International Standard IEC 61804-3:2015 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 61131-3	NOTE	Harmonized as EN 61131-3..
IEC 61499-1	NOTE	Harmonized as EN 61499-1.
IEC 61784-1	NOTE	Harmonized as EN 61784-1.
IEC 61784-2	NOTE	Harmonized as EN 61784-2.
IEC 61804-4	NOTE	Harmonized as EN 61804-4 [1)]

1) To be published.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 When 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 60050	series	International Electrotechnical Vocabulary	-	series
IEC 61804-2	-	Function blocks (FB) for process control and EDDL - Part 2: Specification of FB concept	-	-
IEC 61804-5	-	Function blocks (FB) for process control and EDDL - Part 5: EDDL Builtin library	-	-
IEC 62541-4	-	OPC Unified Architecture - Part 4: Services	EN 62541-4	-
ISO 639	series	Codes for the representation of names of languages	-	series
ISO 3166-1	-	Codes for the representation of names of countries and their subdivisions - Part 1: Country codes	-	-
ISO/IEC 2375	-	Information technology - Procedure for registration of escape sequences and coded character sets	-	-
ISO/IEC 7498-1	-	Information technology - Open Systems Interconnection - Basic Reference Model: The Basic Model	-	-
ISO/IEC 9834-8	-	Information technology - Procedures for the operation of object identifier registration authorities - Part 8: Generation of universally unique identifiers (UUIDs) and their use in object identifiers	-	-
ISO/IEC 9899	-	Information technology - Programming languages - C	-	-
ISO/IEC 10646-1	-	Information technology - Universal Multiple-Octet Coded Character Set (UCS) -- Part 1: Architecture and Basic Multilingual Plane	-	-
IEEE 754	-	IEEE Standard for Binary Floating-Point Arithmetic	-	-
RFC 3629	-	UTF-8, User Datagram Protocol	-	-
W3C	-	Cascading Style Sheets level 2 Specification	-	-

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INTRODUCTION

The EDDL fills the gap between the conceptual function block specification of IEC 61804-2 and a product implementation. It allows the manufacturers to use the same description method for devices based on different technologies and platforms. Figure 1 shows these aspects.

IEC 61804 has the general title "Function blocks (FB) for process control and Electronic Device Description Language (EDDL)" and consists of the following parts:

Part 2: Specification of FB concept

Part 3: EDDL syntax and semantics

Part 4: EDD interpretation

Part 5: EDDL Builtin library

Part 6: Meeting the requirements for integrating fieldbus devices in engineering tools for field devices

This part of IEC 61804 has integrated some parts of IEC TS 61804-1:2003, which was withdrawn in January 2013.

The EDDL may also be used for the description of product properties in other domains such as industrial automation. Industrial automation may include devices such as generic digital and analog input/output modules, motion controllers, human-machine interfaces, sensors, closed-loop controllers, encoders, hydraulic valves, and programmable controllers.

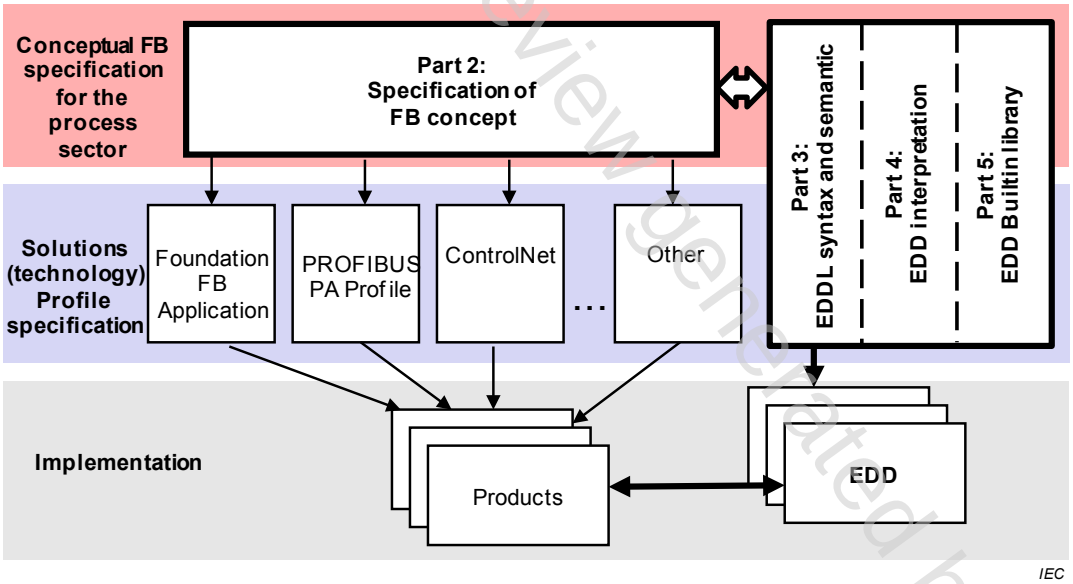

Figure 1 – Position of IEC 61804 in relation to other standards and products

FUNCTION BLOCKS (FB) FOR PROCESS CONTROL AND ELECTRONIC DEVICE DESCRIPTION LANGUAGE (EDDL) –

Part 3: EDDL syntax and semantics

1 Scope

This part of IEC 61804 specifies the Electronic Device Description Language (EDDL) technology, which enables the integration of real product details using the tools of the engineering life cycle.

This part of IEC 61804 specifies EDDL as a generic language for describing the properties of automation system components. EDDL is capable of describing

- device parameters and their dependencies;
- device functions, for example, simulation mode, calibration;
- graphical representations, for example, menus;
- interactions with control devices;
- graphical representations:
  - enhanced user interface,
  - graphing system;
- persistent data store.

EDDL is used to create Electronic Device Description (EDD) for example concrete devices, common usable profiles or libraries. This EDD is used with appropriate tools to generate an interpretative code to support parameter handling, operation, and monitoring of automation system components such as remote I/Os, controllers, sensors, and programmable controllers. Tool implementation is outside the scope of this standard.

This part of IEC 61804 specifies the semantic and lexical structure in a syntax-independent manner. A specific syntax is defined in Annex A, but it is possible to use the semantic model also with different syntaxes.

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 60050 (all parts), *International Electrotechnical Vocabulary* (available at http://www.electropedia.org)

IEC 61804-2:–[1], *Function blocks (FB) for process control and Electronic Device Description Language (EDDL) – Part 2: Specification of FB concept and Electronic Device Description Language (EDDL)*

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1 To be published.