SVENSK STANDARD SS-EN 61804-3

Fastställd	Utgåva	Sida	Ansvarig kommitté
2011-06-08	2	1 (1+435)	SEK TK 65

Industriell processtyrning – Funktionsblock (FB) – Del 3: EDDL

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

Som svensk standard gäller europastandarden EN 61804-3:2011. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61804-3:2011.

Nationellt förord

Europastandarden EN 61804-3:2011

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 61804-3, Second edition, 2010 - Function blocks (FB) for process control - Part 3: Electronic Device Description Language (EDDL)**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 61804-3, utgåva 1, 2007, gäller ej fr o m 2014-01-03.

ICS 25.040.40; 35.240.50

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EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 61804-3

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English version

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

(IEC 61804-3:2010)

Blocs Fonctionnels (FB) pour le contrôle de processus industriel - Partie 3: Langage de description d'un équipement électronique (EDDL)
(CEI 61804-3:2010)

Funktionsbausteine für die Prozessautomation - Teil 3: Elektronische Gerätebeschreibungssprache (EDDL)
(IEC 61804-3:2010)

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 61804-3:2011 E

SEK Svensk Elstandard

Foreword

The text of document 65E/162/FDIS, future edition 2 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 was approved by CENELEC as EN 61804-3 on 2011-01-03.

This European Standard supersedes EN 61804-3:2007.

The main changes with respect to EN 61804-3:2007 are listed below [1)].

Additions

– Language elements to support modular devices, see 7.9, 7.10, 7.36.1, 7.36.2, 7.36.3, 7.36.13 and 7.36.15;

– Language elements to support offline configuration, 7.31;

– Usage of UTF-8, see A.2.3;

– Various BuiltIns;

– BLOCK_A referencing. Updates to support access to multiple blocks, see 7.4.1, 7.38.18 up to 7.38.26;

– Add VALIDITY attribute to various lexical structures;

– Support of multi-language images, see 7.18.2.1;

– In 7.23.1 deleted the restriction of the MENU item list;

– Syntactical limitation on conditionals in 7.23.2.1 to restrict the MENU layout;

– Add LIST and delete VARIABLE_LIST of the MENU items in 7.23.2.1;

– Additional return value data types for METHOD TYPE, see 7.24.2.3;

– Replace reference by a context specific specification in Table 170;

– Clarification on KEY_POINTS behaviour, see 7.35.2.4;

– Add TRANSPARENT to the lexical structure to make the list of attributes consistent, see 7.36.11;

– Clearification on file behaviour, see 7.36.10;

– Add in Table A.5 the new key-words;

– Add the formal EDDL syntax in A.6.

Corrections

– Deleted in A.6 all non-needed constructs using the auxiliary ..._listR. These were created by a non-perfect syntax-checking tool.

– Deleted in A.6 all non-needed "stmt1:" and "stmt2:". These were created by a nonperfect syntax-checking tool.

– Made A.6 consistent about using a colon at the end of a term by amending colons in a consistent way.

– Deleted not used references.

– Deleted in several lexical structures the brackets and “<exp>”.

[1)] The historical background to the EDDL specification is given in Annex E.

– Deleted in lexical structures the “[… <expr>]” where the conditional expression was not possible.

– Exchanged the attribute WIDTH by HEIGHT in the subclause specifying HEIGHT.

– Spelling errors like GUAGE exchanged to GAUGE.

– Syntactical limitation on conditionals in ACTIONS (for example see 7.14.2.3 and 7.14.2.4) to support conditionals only in the METHODs.

– Clearification on file behaviour in 7.15.

– Add GRID and IMAGES to the attribute list, see 7.19.

– Deleted a duplication of element list in 7.23.2.1.

– Defining and calling METHODs with parameter and return value, see 7.24.

– Restriction on METHOD CLASS, see 7.24.2.2.

– Clearification on SCALING_FACTOR behaviour, see Table 165.

– Deleted EDDL operators from EDDL keyword list, see Table A.5.

– Clarification on TIME_VALUE coding providing the absolute basis, see Table D.16 and Table D.17.

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

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2011-10-03
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-01-03

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61804-3:2010 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 61804-2	NOTE	Harmonized as EN 61804-2.
IEC/TR 61804-4	NOTE	Harmonized as CLC/TR 61804-4.

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
IEC 61499-1	2005	Function blocks - Part 1: Architecture	EN 61499-1	2005
IEC/TS 61804-1	2003	Function blocks (FB) for process control - Part 1: Overview of system aspects	-	-
ISO/IEC 2022	-	Information technology - Character code structure and extension techniques	-	-
ISO/IEC 2375	2003	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 8859-1	1998	Information technology - 8-bit single-byte coded graphic character sets - Part 1: Latin alphabet No.1	-	-
ISO/IEC 9899	-	Programming languages - C	-	-
ISO/IEC 10646-1	2000	Information technology - Universal Multiple-Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane	-	-
ISO 639	-	Codes for the representation of names of languages	-	-
ISO 3166-1	2006	Codes for the representation of names of countries and their subdivisions - Part 1: Country codes	EN ISO 3166-1	2006
IEEE 754	1985	Binary Floating-Point Arithmetic (R1990)	-	-
RFC 3629	2003	UTF-8, User Datagram Protocol, available at http://www.ietf.org/rfc/rfc0768.txt	-	-

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INTRODUCTION

This part of the IEC 61804 series specifies the Electronic Device Description Language (EDDL) technology.

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.

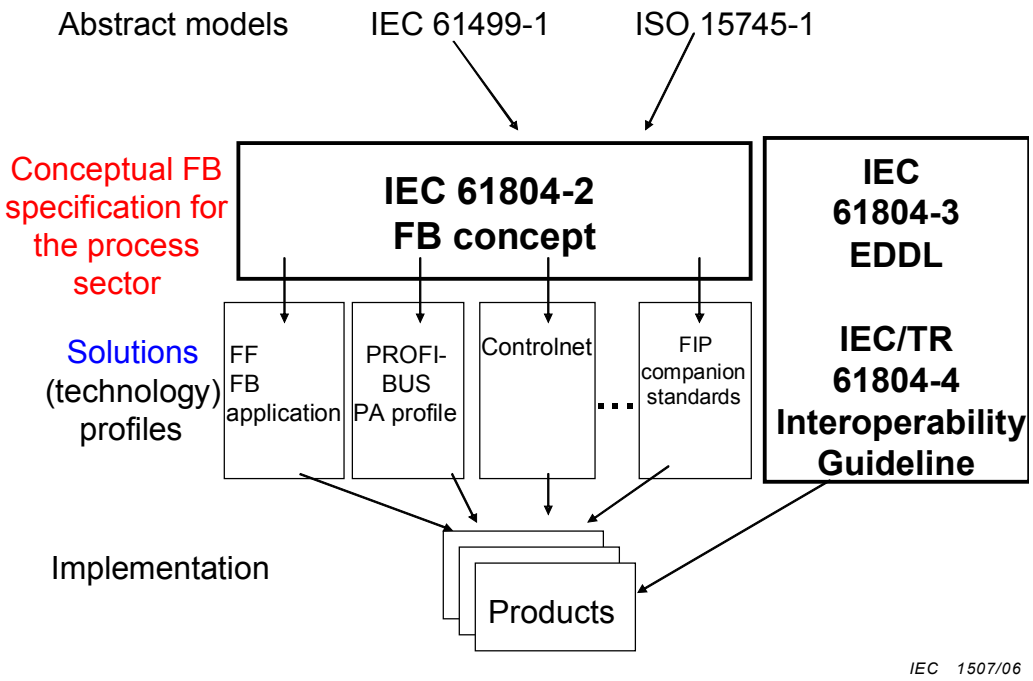

Figure 1 – Position of the IEC 61804 series related to other standards and products

FUNCTION BLOCKS (FB) FOR PROCESS CONTROL –

Part 3: Electronic Device Description Language (EDDL)

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 standard 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 to be used to create Electronic Device Description (EDD). This EDD is used with appropriate tools to generate 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 standard 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.

NOTE 1 The EDDL may also be used for the description of product properties in other domains.

The EDDL and the device-related EDD is applicable to industrial automation.

NOTE 2 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.

This International Standard satisfies the requirements of Clause 9 of IEC/TS 61804-1.

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 61499-1:2005, *Function blocks – Part 1: Architecture*

IEC/TS 61804-1:2003, *Function blocks (FB) for process control – Part 1: Overview of system aspects*

ISO/IEC 2022, *Information technology – Character code structure and extension techniques*

ISO/IEC 2375:2003, *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 8859-1:1998, *Information technology – 8-bit single-byte coded graphic character sets – Part 1: Latin alphabet No. 1*

ISO/IEC 9899, *Programming languages – C*

ISO/IEC 10646-1:2000, *Information technology – Universal Multiple-Octet Coded Character Set (UCS) – Part 1: Architecture and Basic Multilingual Plane*

ISO 639*, Code for the representation of names of languages*

ISO 3166-1:2006*, Codes for the representation of names of countries and their subdivisions – Part 1: Country codes*

IEEE 754:1985 (R1990), *Binary Floating-Point Arithmetic*

RFC 3629:2003, *UTF-8, User Datagram Protocol*, available at
<http://www.ietf.org/rfc/rfc0768.txt >