SLOVENSKI STANDARD
SIST EN 61175-1:2015

01-november-2015

Industrijski sistemi, inštalacije in oprema ter industrijski proizvodi, oznake signalov - 1. del: Osnovna pravila (IEC 61175-1:2015)

Industrial systems, installations and equipment and industrial products, designation of signals - Part 1: Basic rules (IEC 61175-1:2015)

Industrielle Systeme, Anlagen und Ausrüstungen und Industrieprodukte, Kennzeichnung von Signalen - Teil 1: Allgemeine Regeln (IEC 61175-1:2015)

Systèmes industriels, installations et appareils, et produits industriels, Désignations des signaux - Partie 1: Règles de base (IEC 61175-1:2015)

Ta slovenski standard je istoveten z: **EN 61175-1:2015**

ICS:

29.020	Elektrotehnika na splošno	Electrical engineering in general

SIST EN 61175-1:2015 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61175-1

August 2015

ICS 29.020

Supersedes EN 61175:2005

English Version

Industrial systems, installations and equipment and industrial products - Designation of signals - Part 1: Basic rules (IEC 61175-1:2015)

Systèmes, installations, appareils et produits industriels - Désignation des signaux - Partie 1: Règles de base (IEC 61175-1:2015)

Industrielle Systeme, Anlagen und Ausrüstungen und Industrieprodukte, Kennzeichnung von Signalen - Teil 1: Allgemeine Regeln (IEC 61175-1:2015)

This European Standard was approved by CENELEC on 2015-06-25. 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.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 61175-1:2015 E

European foreword

The text of document 3/1214A/FDIS, future edition 1 of IEC 61175-1, prepared by IEC/TC 3 "Information structures and elements, identification and marking principles, documentation and graphical symbols" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61175-1:2015.

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) 2016-03-25
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-06-25

This document supersedes EN 61175:2005.

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

Endorsement notice

The text of the International Standard IEC 61175-1:2015 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 60027	NOTE	Harmonized in EN 60027 series.
IEC 60445	NOTE	Harmonized as EN 60445.
IEC 60447	NOTE	Harmonized as EN 60447.
IEC 60747	NOTE	Harmonized in EN 60747 series.
IEC 61131	NOTE	Harmonized in EN 61131 series.
IEC 61355-1	NOTE	Harmonized as EN 61355-1.
IEC 61360-1	NOTE	Harmonized as EN 61360-1.
IEC 61666	NOTE	Harmonized as EN 61666.
IEC 61850	NOTE	Harmonized in EN 61850 series.
IEC 62491	NOTE	Harmonized as EN 62491.

IEC 62744	NOTE	Harmonized as EN 62744.
IEC 81346-2	NOTE	Harmonized as EN 81346-2.
IEC 80000	NOTE	Harmonized in EN 80000 series.
ISO 21549-7:2007	NOTE	Harmonized as EN ISO 21549-7:2007 (not modified).
ISO 80000	NOTE	Harmonized in EN ISO 80000 series.

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 61082-1	-	Preparation of documents used in electrotechnology - Part 1: Rules	EN 61082-1	-
IEC 81346-1	-	Industrial systems, installations and equipment and industrial products - Structuring principles and reference designations - Part 1: Basic rules	EN 81346-1	-
IEC/TS 62720	-	Identification of units of measurement for computer-based processing	-	-

IEC 61175-1

Edition 1.0 2015-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

HORIZONTAL STANDARD

NORME HORIZONTALE

Industrial systems, installations and equipment and industrial products – Designation of signals – Part 1: Basic rules

Systèmes, installations, appareils et produits industriels – Désignation des signaux – Partie 1: Règles de base

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INDUSTRIAL SYSTEMS, INSTALLATIONS AND EQUIPMENT AND INDUSTRIAL PRODUCTS – DESIGNATION OF SIGNALS –

Part 1: Basic rules

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.
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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 61175-1 has been prepared by IEC technical committee 3: Information structures and elements, identification and marking principles, documentation and graphical symbols.

It has the status of a horizontal standard in accordance with IEC Guide 108.

This first edition cancels and replaces the second edition of IEC 61175 published in 2005. This edition constitutes a technical revision.

Further parts of IEC 61175 may be added as Technical Specifications relating to different domains. Additional parts may be application guides for designation of signals in specific applications such as communication protocols and other software systems.

This edition includes the following significant technical changes with respect to IEC 61175:2005:

– an improved description of the principles for use; and

– a strict separation between the physical aspect of a signal and its associated information, focusing on the latter.

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

FDIS	Report on voting
3/1214A/FDIS	3/1221/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 in the IEC 61175 series, published under the general title *Industrial systems, installations and equipment and industrial products – Designation of signals*, 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 website 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The intention of this part of IEC 61175 is to establish rules and requirements for the designation of signals, and furthermore to make recommendations on useful presentations of these.

Basically, a signal designation is associated with the signal over its whole lifetime, which means from the beginning of the design stage until the signal is no longer needed.

The change of medium for the transfer of a signal because of a physical rebuilding of an installation will not cause a change of the identification of this signal if its semantic meaning is maintained. Signals represent information. For communication purposes the information has to be represented as data. The information can be more or less complex. In simple cases, the information can be represented as a single Boolean variable, without internal structure. In more complex cases, like in computer communication via data networks, the information can be packaged in more complex objects, with internal structure, which are transferred with suitable protocols. The implementation can be done in different ways depending on which technology, protocol, etc. is being used. Figure 1 illustrates the terminology.

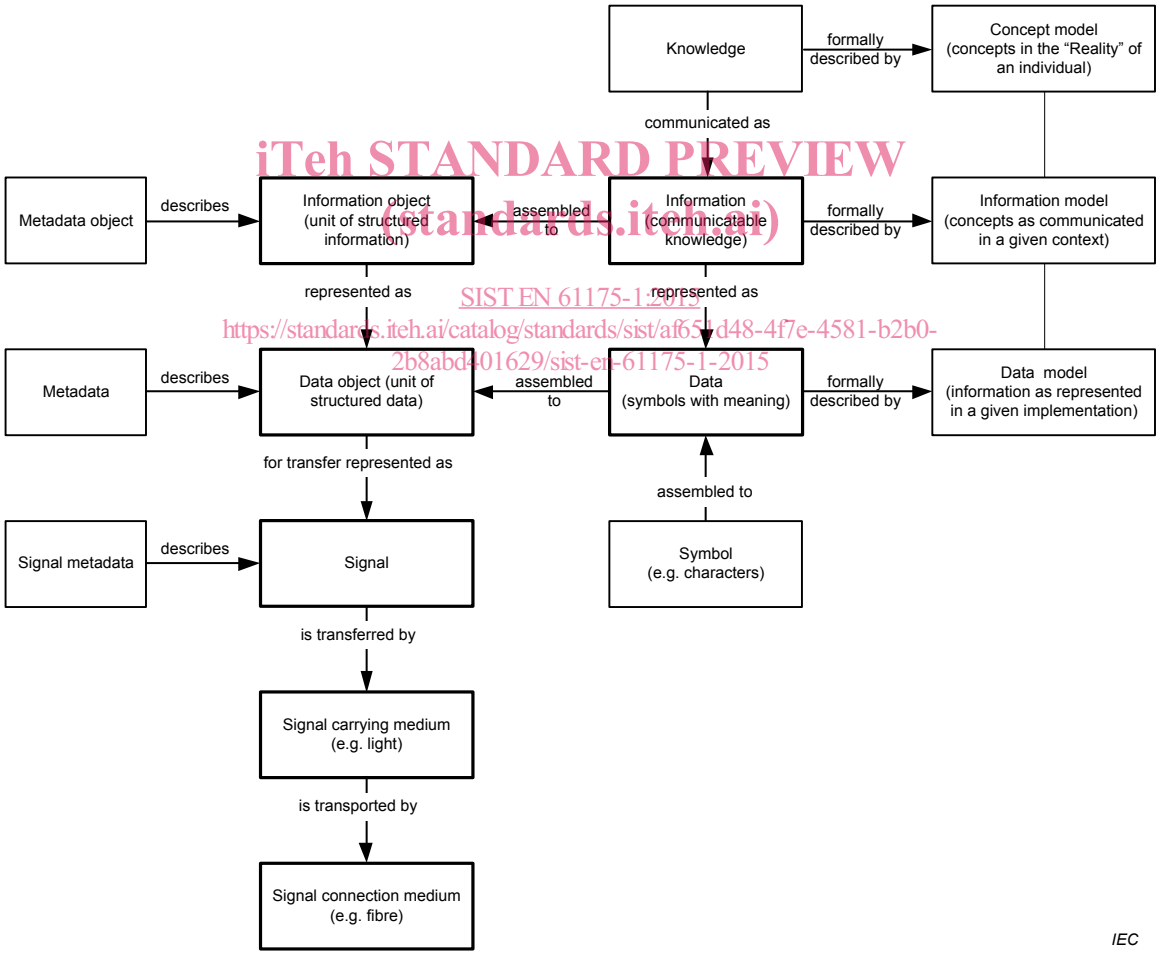

Figure 1 – Illustration of relationship of terminology

The principles described in this part of IEC 61175 are closely related to other International Standards such as IEC 81346-1, IEC 81346-2, IEC 61666 and IEC 81714-3. An information model for the interrelations is provided in IEC TS 62771.

INDUSTRIAL SYSTEMS, INSTALLATIONS AND EQUIPMENT AND INDUSTRIAL PRODUCTS – DESIGNATION OF SIGNALS –

Part 1: Basic rules

1 Scope

This part of IEC 61175 provides rules for the composition of designations for the identification of signals and signal connections. This includes the designation of power supply.

This part of IEC 61175 is applicable to all types of signals within an industrial system, installation and equipment and industrial products. It deals with the information aspect of signals and not with their physical implementation.

Excluded from the scope are general rules for the presentation of information in human machine interfaces. This part of IEC 61175 is also not applicable for the identification of wiring, terminals, piping and other hardware connections.

NOTE For the purpose of marking of wires, see IEC 62491.

This horizontal standard is primarily intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 108.

One of the responsibilities of a technical committee is, wherever applicable, to make use of horizontal standards in the preparation of its publications. The contents of this horizontal standard will not apply unless specifically referred to or included in the relevant publications.

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 61082-1, *Preparation of documents used in electrotechnology – Part 1: Rules*

IEC 81346-1, *Industrial systems, installations and equipment and industrial products – Structuring principles and reference designations – Part 1: Basic principles*

IEC 62720, *Identification of units of measurement for computer-based processing*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
object
entity treated in a process of development, implementation, usage and disposal

Note 1 to entry: The object may refer to a physical or non-physical “thing”, i.e. anything that might exist, exists or did exist.

Note 2 to entry: The object has information associated with it.

[SOURCE: IEC 81346-1:2009, definition 3.1]

3.2
information object
fixed and structured amount of information that can be managed and interchanged as a unit amoung users and systems

Note 1 to entry: This unit need not be human perceptible. Information objects are often stored as data.

Note 2 to entry: "Users" refers in this definition to users of information and "systems" refers to systems managing information and documentation.

3.3
data object
collection of data that has an agreed grouping between the sender and the receiver and can be identified as a complete entity

[SOURCE: ISO 21549-7:2007, 3.12, modified — "Natural grouping" has been changed to "agreed grouping between sender and receiver".]

3.4
signal
agreed representation of an information object conveyed among objects

Note 1 to entry: The agreed representation is a data object. The information object can be used to express a binary state or analogue variable or have a more complex structure.

Note 2 to entry: The representations of the information object e.g. potential level, current level, data format, protocol, etc., are conveyed in a suitable signal connection medium.

Note 3 to entry: Complex information objects usually need a number of successive conversions until they reach a representation suitable for transfer in a signal connection medium.

Note 4 to entry: The agreement between sender(s) and receiver(s) is necessary in order to generate and interpret the representation correctly. In simple cases it is implicit, in other cases it has to be explicitly specified as a protocol, etc.

Note 5 to entry: The representations of the information object can be conveyed directly from source to destination (synchronous communication) on the signal connection medium, or intermediately stored (by the sender) in a place where the intended receivers can get them (asynchronous communication).

3.5
signal name
identifier of the information object represented by a signal

3.6
signal designation
unambiguous identifier of a signal within a system

3.7
object designation
identifier of a specific object in a given context

EXAMPLES Reference designation, type number, serial number, name.

[SOURCE: IEC 61355-1:2008, definition 3.13]

3.8
reference designation
identifier of a specific object formed with respect to the system of which the object is a constituent, based on one or many aspects of that system