SVENSK STANDARD

SS-EN IEC 63365, utg 1:2023

Fastställd	Sida	Ansvarig kommitté
2023-04-19	1 (25)	SEK TK 65

Industriell processtyrning – Digital märkskylt (typskylt)

Industrial process measurement, control and automation – Digital nameplate

Som svensk standard gäller europastandarden EN IEC 63365:2022. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 63365:2022.

Nationellt förord

Europastandarden EN IEC 63365:2022

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 63365, First edition, 2022 - Industrial process measurement, control and automation – Digital nameplate**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 33.080.00

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 63365

November 2022

ICS 33.080

English Version

Industrial process measurement, control and automation - Digital nameplate
(IEC 63365:2022)

Mesurage, commande et automatisation dans les processus industriels - Plaque signalétique numérique
(IEC 63365:2022)

Industrielle Automatisierungs- und Leittechnik - Digitales Typenschild
(IEC 63365:2022)

This European Standard was approved by CENELEC on 2022-11-22. 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, Türkiye 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

Ref. No. EN IEC 63365:2022 E

SEK Svensk Elstandard SS-EN IEC 63365, utg 1:2023

European foreword

The text of document 65E/880/CDV, future edition 1 of IEC 63365, 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 63365:2022.

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)	2023-08-22
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2025-11-22

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.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 63365:2022 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 standard indicated:

IEC 60721 (series) NOTE Harmonized as EN 60721 (series)

IEC 61360 (series) NOTE Harmonized as EN 61360 (series)

IEC 61987 (series) NOTE Harmonized as EN IEC 61987 (series)

IEC 62683-1 NOTE Harmonized as EN 62683-1

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 60079-14	-	Explosive atmospheres - Part 14: Electrical installations design, selection and erection	EN 60079-14	-
IEC 61406-1	-	Identification Link	-	-
ISO/IEC 15415	2011	Information technology - Automatic identification and data capture techniques - Bar code symbol print quality test specification - Two-dimensional symbols	-	-
ISO/IEC 16022	-	Information technology - Automatic identification and data capture techniques - Data Matrix bar code symbology specification	-	-
ISO/IEC 18004	-	Information technology - Automatic identification and data capture techniques - QR Code bar code symbology specification	-	-
ISO/IEC 18092	-	Information technology - Telecommunications and information exchange between systems - Near Field Communication - Interface and Protocol (NFCIP-1)	-	-
ISO/IEC 21471	-	Information technology - Automatic identification and data capture techniques - Extended rectangular data matrix (DMRE) bar code symbology specification	-	-
ISO/IEC 21481	-	Information technology - Telecommunications and information exchange between systems - Near field communication interface and protocol 2 (NFCIP-2)	-	-
ISO/IEC 29158	-	Information technology - Automatic identification and data capture techniques - Direct Part Mark (DPM) Quality Guideline	-	-

ISO/IEC 29160	-	Information technology - Radio frequency identification for item management - RFID Emblem	EN 16656	-
ISO 13849-1	-	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design	EN ISO 13849-1	-
ISO/IEC 14443-1	-	Cards and security devices for personal identification - Contactless proximity objects - Part 1: Physical characteristics		
ISO/IEC 14443-2	-	Cards and security devices for personal identification - Contactless proximity objects - Part 2: Radio frequency power and signal interface	-	-
ISO/IEC 14443-3	-	Cards and security devices for personal identification - Contactless proximity objects - Part 3: Initialization and anticollision	-	-
ISO/IEC 14443-4	-	Cards and security devices for personal identification - Contactless proximity objects – Part 4: Transmission protocol	-	-
ISO/IEC 15693-1	-	Cards and security devices for personal identification - Contactless vicinity objects - Part 1: Physical characteristics	-	-
ISO/IEC 15693-2	-	Cards and security devices for personal identification - Contactless vicinity objects - Part 2: Air interface and initialization	-	-
ISO/IEC 15693-3	-	Cards and security devices for personal identification - Contactless vicinity objects - Part 3: Anticollision and transmission protocol	-	-

IEC 63365

Edition 1.0 2022-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Industrial process measurement, control and automation – Digital nameplate

Mesurage, commande et automatisation dans les processus industriels – Plaque signalétique numérique

INTERNATIONAL
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COMMISSION

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INDUSTRIAL PROCESS MEASUREMENT, CONTROL AND AUTOMATION – DIGITAL NAMEPLATE

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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IEC 63365 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial Process Measurement, control and automation. It is an International Standard.

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

Draft	Report on voting
65E/880/CDV	65E/931/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under 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.

IMPORTANT – The "colour inside" logo on the cover page of this document 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 primary purpose of a nameplate is to clearly identify the device and its manufacturer. Legal marks or approval symbols indicate conformity with the regulations for placing the device on the market and for safe use.

The project "Digital Nameplate" was started in response to the needs of manufacturers of explosion-protected equipment and operators of electrical plants in explosion hazardous areas. One objective is to ensure that all of the necessary information can be marked on the equipment, particularly considering the extent of the information required in the field of explosion protection. The requirements for marking products for the global markets have become as extensive that it is often no longer possible to include all of the necessary information on the nameplate, especially of smaller products (e.g. sensors). As an example, in Europe, different EU Directives and harmonized standards can apply to the same product, e.g. for electric safety, explosion safety, safety of machinery, pressure safety or food safety. If the product is to be sold worldwide, additional markings and approval symbols are required, e.g. IEC Ex marking, Ex marking for the North American market, UK CA marking for UK, EAC for the Eurasian Economic Area, RCM for Australia or CCC for China.

Within the context of smart manufacturing, it is also anticipated that products will have to be electronically identifiable in future. Equipment manufacturers can use machine-readable marking in the production process to automatically control the material flow by using a barcode. Operators can easily identify the product at the incoming inspection.Service engineers or the responsible authorities can electronically check all the required data and information for the application and safe use. The data from the machine-readable nameplate can be transmitted directly to an ERP system (Enterprise Resource Planning system) for error-free stocktaking. Operators and users have access to the device data in digital format.

One intention of the (offline) digital nameplate is to reduce the required space of the conventional nameplate. In the long term it is expected that the digital nameplate can replace the conventional text on the nameplate saving a lot of space, especially on small products.

This document describes alternative electronically-readable solutions to the current, conventional, plain text marking on the nameplate or packaging. It describes marking technologies that use 2D codes, transponders or the firmware of the products. In the case of a 2D code or transponder, the stored data can be read by commonly available scanning devices, e.g. smartphones. If the marking is stored in the firmware of the product, the nameplate can be shown, for example, on the product display or the data can be read via an electronic interface remotely.

Furthermore, the IEC 61406-1 is in development for a unique product identification via an Identification Link. That standard enables manufacturers to provide all product related data and documents via an Internet address in an electronic format. Product documentation such as technical information, operating instructions and product certificates can be downloaded. That standard defines a specific 2D or RFID code, which contains only the Identification Link string with limited characters. In IEC 63365, the Identification Link string is included as the first property in the digital nameplate, followed by the detailed marking properties. If an Internet connection to the manufacturer's website is available, additional product data (digital twin) and documentation can be accessed.

This document is also intended to increase acceptance of digital nameplates among legislative bodies. A long-term goal is to replace the conventional nameplate with an electronically readable nameplate as far as possible. Regulators require marking to be applied to devices permanently, clearly and legibly. This requirement could be met with digital marking as well. Digital nameplates that are permanently affixed to the product and provide the necessary data without the need for an Internet connection come very close to plain text marking. To ensure greater acceptance, the nameplate shows a minimum amount of marking in plain text. During a transition period, both, the plain text and the digital marking can be applied simultaneously at the product. Today electronic marking is being increasingly implemented and accepted on the international markets.

ISO/IEC 22603-1 was recently published and specifies a digital label representating the product marking. But that standard provides the product marking via a link to a Webserver which contains the relevant information and does not contain the marking directly in the digital code.

INDUSTRIAL PROCESS MEASUREMENT, CONTROL AND AUTOMATION – DIGITAL NAMEPLATE

1 Scope

This International standard applies to products used in the process measurement, control and automation industry. It establishes a concept and requirements for the digital nameplate and provides alternative electronically readable solutions (e.g. 2D codes, RFID or firmware) to current conventional plain text marking on the nameplate or packaging of products.

The digital nameplate information is contained in the electronically readable medium affixed to the product, the packaging or accompanying documents. The digital nameplate information is available offline without Internet connection. After electronic reading, all digital nameplate information is displayed in a human readable text format. The digital nameplate also includes the Identification Link String according to IEC 61406-1 which provides additional online information for the product.

This document does not specify the contents of the conventional nameplate, which are subject to regional or national regulations and standards.

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 60079-14, *Explosive atmospheres – Part 14: Electrical installations design, selection and erection*

IEC 61406-1, *Identification link*

ISO/IEC 15415:2011, *Information technology – Automatic identification and data capture techniques – Bar code symbol print quality test specification – Two-dimensional symbols*

ISO/IEC 16022, *Information technology – Automatic identification and data capture techniques – Data Matrix bar code symbology specification*

ISO/IEC 18004, *Information technology – Automatic identification and data capture techniques – QR Code bar code symbology specification*

ISO/IEC 18092, *Information technology – Telecommunications and information exchange between systems – Near Field Communication – Interface and Protocol (NFCIP-1)*

ISO/IEC 21471, *Information technology – Automatic identification and data capture techniques – Extended rectangular data matrix (DMRE) bar code symbology specification*

ISO/IEC 21481, *Information technology – Telecommunications and information exchange between systems – Near field communication interface and protocol 2 (NFCIP-2)*

ISO/IEC 29158, *Information technology – Automatic identification and data capture techniques – Direct Part Mark (DPM) Quality Guideline*

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ISO/IEC 14443-3, *Cards and security devices for personal identification – Contactless proximity objects – Part 3: Initialization and anticollision*

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