SLOVENSKI STANDARD
oSIST prEN IEC 63365:2022

01-junij-2022

Digitalna imenska tablica - Digitalna oznaka izdelka

Digital Nameplate - Digital Product Marking

Plaque signalétique numérique – Marquage numérique des produits

Ta slovenski standard je istoveten z: prEN IEC 63365:2022

ICS:

35.240.15	Identifikacijske kartice. Čipne kartice. Biometrija	Identification cards. Chip cards. Biometrics

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IEC SC 65E : DEVICES AND INTEGRATION IN ENTERPRISE SYSTEMS	
SECRETARIAT: United States of America	SECRETARY: Mr Donald (Bob) Lattimer
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING
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TITLE:

Digital Nameplate – Digital Product Marking

PROPOSED STABILITY DATE: 2025

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INDUSTRIAL PROCESS MEASUREMENT, CONTROL AND AUTOMATION -

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FOREWORD

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IEC 63365 has been prepared by subcommittee SC65E: Devices and integration in enterprise systems, of IEC technical committee TC65: 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
XX/XX/FDIS	XX/XX/RVD

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.

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

108 The committee has decided that the contents of this document will remain unchanged until the
109 stability date indicated on the IEC website under webstore.iec.ch in the data related to the
110 specific document. At this date, the document will be

111 • reconfirmed,
112 • withdrawn,
113 • replaced by a revised edition, or
114 • amended.
115

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 may apply to the same product, e.g. for electric safety, explosion safety, safety of machinery, pressure safety or food safety. If the product will 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 standard 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 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 the 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 might 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 must show 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 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 which provides additional online information of the product.

This standard 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.

ISO 13849-1, *Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design*

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

IEC 61406, *Identification Link (to be published)*

ISO/IEC 10646, *Information technology — Universal Coded Character Set (UCS)*

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 18000-3:2010, *Information technology – Radio frequency identification for item management – Part 3: Parameters for air interface communications at 13.56 MHz*

ISO/IEC 18000-63:2015, *Information technology – Radio frequency identification for item management – Part 63: Parameters for air interface communications at 860 MHz to 960 MHz Type C*

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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050 (IEV) and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
conventional nameplate
nameplate containing all necessary product marking strings in plain text, which is human readable.

Note 1 to entry: A conventional nameplate string is composed of text and symbols.

3.2
digital nameplate
electronically readable product marking string encoded in an optically readable medium, a radio frequency transponder or the product firmware

Note 1 to entry: In contrast to a conventional nameplate, a Digital Nameplate is not human readable.

EXAMPLE 1 2D symbols such as QR Code and DataMatrix are examples of optically readable media.

EXAMPLE 2 Radio frequency identification (RFID) transponders are examples of electronical readable media.

3.3
digital nameplate string
alphanumeric string representing the information encoded in the Digital Nameplate

Note 1 to entry: A Digital Nameplate string can be read by a human using the appropriate scanner, reader or engineering software.

3.4
electronic reader
hardware and software means to read electronically readable media

3.5
2D Code
2 dimensional barcode, which can be converted with commonly available readers into plain text