

STN	Zobrazenie elektrických a prístrojových objektov v digitálnych 3D modeloch počas projektovania	STN EN IEC 63261 18 0056
------------	---	--

Representation of electrical and instrument objects in digital 3D plant models during engineering

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/25

Obsahuje: EN IEC 63261:2024, IEC 63261:2024

140657

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2025
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii v znení neskorších predpisov.

EUROPEAN STANDARD

EN IEC 63261

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2024

ICS 25.040.40

English Version

**Representation of electrical and instrument objects in digital 3D
plant models during engineering
(IEC 63261:2024)**

Représentation des objets électriques et d'instrumentation
dans des modèles d'installation numérique 3D pendant la
phase d'ingénierie
(IEC 63261:2024)

Darstellung von elektrischen und prozessleittechnischen
Komponenten in digitalen 3D Modellen während der
Projektentwicklung
(IEC 63261:2024)

This European Standard was approved by CENELEC on 2024-12-18. 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

EN IEC 63261:2024 (E)**European foreword**

The text of document 65E/1083/FDIS, future edition 1 of IEC 63261, 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 63261:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2025-12-31 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2027-12-31 document have to be withdrawn

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 63261:2024 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 61082-1	NOTE	Approved as EN 61082-1
IEC 61355-1	NOTE	Approved as EN 61355-1
IEC 61987 series	NOTE	Approved as EN IEC 61987 series
IEC 62424	NOTE	Approved as EN 62424
IEC 62708	NOTE	Approved as EN 62708
IEC 62714 series	NOTE	Approved as EN IEC 62714 series
IEC 81346 series	NOTE	Approved as EN IEC 81346 series



IEC 63261

Edition 1.0 2024-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Representation of electrical and instrument objects in digital 3D plant models during engineering

Représentation des objets électriques et d'instrumentation dans des modèles d'installation numérique 3D pendant la phase d'ingénierie



**THIS PUBLICATION IS COPYRIGHT PROTECTED****Copyright © 2024 IEC, Geneva, Switzerland**

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, ...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews, graphical symbols and the glossary. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 500 terminological entries in English and French, with equivalent terms in 25 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

A propos de l'IEC

La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC

Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC -**webstore.iec.ch/advsearchform**

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, ...). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications, symboles graphiques et le glossaire. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

Electropedia - www.electropedia.org

Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 500 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 25 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.



IEC 63261

Edition 1.0 2024-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Representation of electrical and instrument objects in digital 3D plant models during engineering

Représentation des objets électriques et d'instrumentation dans des modèles d'installation numérique 3D pendant la phase d'ingénierie

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 25.040.40

ISBN 978-2-8322-8359-2

**Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms, definitions and abbreviated terms	6
3.1 Terms and definitions.....	6
3.2 Abbreviated terms.....	7
4 Requirements for E&I objects	7
4.1 Properties	7
4.2 Detail of design.....	8
5 Content and timeline of the 3D plant model during engineering.....	8
5.1 Content of the 3D plant model.....	8
5.2 Timeline of the 3D plant model.....	10
6 Model output	10
7 Conformity.....	11
Bibliography.....	12
Table 1 – Content of 3D plant model.....	8
Table 2 – Model output drawings	10
Table 3 – Model output reports	11

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**REPRESENTATION OF ELECTRICAL AND INSTRUMENT OBJECTS
IN DIGITAL 3D PLANT MODELS DURING ENGINEERING**

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 63261 has been prepared by subcommittee SC 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/1083/FDIS	65E/1137/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.

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, or
- revised.

INTRODUCTION

Engineering and construction in the process industries typically involve the cooperation of multiple companies. Due to economic reasons, special knowledge, special license, authorization or simply capacity utilization, the work is divided between partners. They will arrange their cooperation for each individual project differently. This implies well defined division of work and responsibilities across the different phases of project execution.

Efficient engineering of a digital 3D plant model is inextricably linked to highly sophisticated tools for the different needs of the involved work processes and departments. By nature of the plant model, all engineering disciplines meet in the model and imply clear definitions of the content and interfaces.

Digital 3D plant models play an important part in electrical and instrumentation engineering to create technical drawings and avoid clashes between the elements provided by different engineering disciplines.

The first aim of this document is to define the level of details of electrical and instrumentation equipment representations placed in the 3D plant model. It specifies minimum requirements at the different maturity grades of the model for each equipment, its related metadata and reports retrieved from the 3D plant model.

The second aim of this document is to define a timeline and project milestones with the associated level of detail for the incorporation of electrical and instrumentation equipment into the 3D plant model.

This document aims at avoiding misunderstandings and erroneous design work in order to reduce additional corrective works and expenses for clarification.

REPRESENTATION OF ELECTRICAL AND INSTRUMENT OBJECTS IN DIGITAL 3D PLANT MODELS DURING ENGINEERING

1 Scope

This International Standard provides requirements for the E&I objects of a digital 3D plant model, used in the engineering phase to design and construct a process plant and its instrumentation. It provides guidance how to model plants and their electrical and instrumentation equipment.

This document also specifies the content and the possible output of the 3D plant model at project milestones.

This document can be used by the contractual partners to agree upon the content of the 3D plant model to be delivered at specified milestones.

This document does not specify the transfer and format of digital 3D plant models.

This document does not specify definitions or instructions to equipment representations and details of elements in the 3D plant model not belonging to electrical and instrumentation domains.

2 Normative references

There are no normative references in this document.

koniec náhľadu – text ďalej pokračuje v platenej verzii STN