

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Document kinds for electrical and instrumentation projects in the process industry

Types de documents pour les projets relatifs aux systèmes électriques et aux instruments de fonctionnement dans l'industrie de transformation



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2015 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 Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
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 corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub

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 also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in 15 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

More than 60 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

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: csc@iec.ch.

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.

Catalogue IEC - webstore.iec.ch/catalogue

Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

Recherche de publications IEC - www.iec.ch/searchpub

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 aussi une fois par mois par email.

Electropedia - www.electropedia.org

Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient plus de 30 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 15 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary

Plus de 60 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

Service Clients - webstore.iec.ch/csc

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

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Document kinds for electrical and instrumentation projects in the process industry

Types de documents pour les projets relatifs aux systèmes électriques et aux instruments de fonctionnement dans l'industrie de transformation

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 01.110; 25.040.40

ISBN 978-2-8322-2227-0

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.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	7
3 Terms, definitions, abbreviated terms and acronyms	8
3.1 Terms and definitions.....	8
3.2 Abbreviated terms and acronyms	9
4 Conformity.....	10
4.1 Document	10
4.2 Document request.....	10
5 Document kinds.....	10
Annex A (informative) Names of document kinds in different languages	23
Annex B (informative) Examples	29
Bibliography.....	70
Figure B.1 – AB001 list of documents	30
Figure B.2 – BB001 punch list.....	31
Figure B.3 – BE001 manpower mobilization plan	32
Figure B.4 – DA001 instrument data sheet.....	33
Figure B.5 – DC001 test and maintenance recommendations.....	34
Figure B.6 – DZ001 test and maintenance requirements	35
Figure B.7 – EC002 electrical consumer list.....	36
Figure B.8 – EC008 heating circuit list	37
Figure B.9 – EC009 requirement specification.....	38
Figure B.10 – EC010 specification sheet.....	39
Figure B.11 – EC011 loop list	40
Figure B.12 – EC014 construction bill of quantities	41
Figure B.13 – EC015 specification E&I process connections	42
Figure B.14 – ED006 Ex-i calculation sheet	43
Figure B.15 – ED007 heat dissipation summary	44
Figure B.16 – FA001 electrical single line diagram.....	45
Figure B.17 – FA002 structure diagram DCS-PLC-SIS	46
Figure B.18 – FB001 piping and instrumentation diagram (P&ID)	47
Figure B.19 – FE001 function description.....	48
Figure B.20 – FF001 function block diagram	49
Figure B.21 – FF002 cause and effect matrix.....	50
Figure B.22 – FP001 signal list	51
Figure B.23 – FP002 I/O list.....	52
Figure B.24 – FQ001 trip point list	53
Figure B.25 – FQ002 configuration parameter list	54
Figure B.26 – FS002 loop diagram.....	55
Figure B.27 – FS003 bus layout drawing.....	56

Figure B.28 – LD003 plot plan E&I	57
Figure B.29 – LD006 arrangement drawing	58
Figure B.30 – LU001 cabinet layout drawing	59
Figure B.31 – MA001 terminal connection diagram	60
Figure B.32 – MA003 conceptual wiring diagram	61
Figure B.33 – MB001 cable list	62
Figure B.34 – MB002 cable laying list	63
Figure B.35 – PA001 material take off	64
Figure B.36 – PB001 spare parts list	65
Figure B.37 – PB002 instrument index	66
Figure B.38 – PD001 system log book	67
Figure B.39 – TC001 installation drawing (hook up)	68
Figure B.40 – TC002 assembly drawing	69
Table 1 – Document kinds	11
Table A.1 – Names of document kinds in English and French	23
Table A.2 – Names of document kinds in Chinese and German	26

preview generated by EVS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

DOCUMENT KINDS FOR ELECTRICAL AND INSTRUMENTATION PROJECTS IN THE PROCESS INDUSTRY

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) 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 62708 has been prepared by IEC technical committee 65: Industrial-process measurement, control and automation.

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

FDIS	Report on voting
65/580/FDIS	65/583/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.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site 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 engineering in the process industry is driven by international cooperation. Due to economic reasons, special know-how, special licence, authorization or simply capacity utilisation the work is split between partners. They will arrange their cooperation for each individual project differently. This requires well defined split of work and responsibilities. Documents are the basis for these definitions since they are the result of any engineering work.

If there is only the name of a document without further description of form and content, it will be likely that each partner develops their own view of the result of their efforts. Therefore, for each project the definition of deliverable documents is a major issue. The name of a document is often used for similar but in detail different documents. This standard will take the most commonly used name from synonymous names as the document kind name, intending to make other alternatives obsolete.

The first aim of this standard is to avoid misunderstandings and erroneous elaboration of documents in order to reduce additional corrective works and expenses for clarification between partners.

The second aim is to provide the convenience of document handling by using the IEC 61355 database. This standard will provide document kind names, document kind classification codes specified by IEC 61355, and some templates.

To cover these aims, we specify individual document kind names, but do not specify which documents are mandatory or optional.

DOCUMENT KINDS FOR ELECTRICAL AND INSTRUMENTATION PROJECTS IN THE PROCESS INDUSTRY

1 Scope

This International Standard defines specific documents and their basic content required for electrical and instrumentation projects in the process industry.

This standard specifies the document kind name and the mandatory content of the document kind.

Documents used in the phases of a project from the concept phase to the mechanical completion are covered (see IEC 62337).

Documents for project management and quality assurance are included.

Documents for commercial project administration are excluded.

Examples of documents are provided for easy reference, understanding and usage.

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 60617, *Graphical symbols for diagrams*

IEC 60079-10-1, *Explosive atmospheres – Part 10-1: Classification of areas – Explosive gas atmospheres*

IEC 60079-11, *Explosive atmospheres – Part 11: Equipment protection by intrinsic safety "i"*

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

IEC 61131-3, *Programmable controllers – Part 3: Programming languages*

IEC 61355 (all parts), *Classification and designation of documents for plants, systems and equipment*

IEC 61355-1:2008, *Classification and designation of documents for plants, systems and equipment – Part 1: Rules and classification tables*

IEC 61511 (all parts), *Functional safety – Safety instrumented systems for the process industry sector*

IEC 61987-10, *Industrial-process measurement and control – Data structures and elements in process equipment catalogues – Part 10: Lists of properties (LOPs) for industrial-process measurement and control for electronic data exchange – Fundamentals*

IEC 62337, *Commissioning of electrical, instrumentation and control systems in the process industry – Specific phases and milestones*

IEC 62381, *Automation systems in the process industry – Factory acceptance test (FAT), site acceptance test (SAT), and site integration test (SIT)*

IEC 62424, *Representation of process control engineering – Requests in P&I diagrams and data exchange between P&ID tools and PCE-CAE tools*

IEC 82079-1, *Preparation of instructions for use – Structuring, content and presentation – Part 1: General principles and detailed requirements*

ISO 10006, *Quality management systems – Guidelines for quality management in projects*

ISO 10628, *Flow diagrams for process plants – General rules*

3 Terms, definitions, abbreviated terms and acronyms

3.1 Terms and definitions

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

3.1.1

activity

smallest identified item of work in a project

[SOURCE: ISO 10006: 2003, 3.1]

3.1.2

document

fixed and structured amount of information intended for human perception that can be managed and interchanged as a unit between users and systems

[SOURCE: IEC 61355-1: 2008, 3.2, modified – notes removed for easy understanding.]

3.1.3

document kind

type of document defined with respect to its specified content of information and form of presentation

[SOURCE: IEC 61355-1: 2008, 3.6, modified – note removed for easy understanding.]

3.1.4

document request

document which requests to prepare or provide a set of documents

3.1.5

documentation

collection of documents related to a given subject

[SOURCE: IEC 61355-1: 2008, 3.5, modified – notes removed for easy understanding.]

3.1.6

export permission

authority permission to transport e.g. embargo goods from the country of origin to its intended country of destination