



# SLOVENSKI STANDARD

## SIST EN 62382:2013

01-april-2013

Nadomešča:  
SIST EN 62382:2007

---

**Preverjanje električnih in merilnih zank (IEC 62382:2012)**

Electrical and instrumentation loop check (IEC 62382:2012)

PLT-Stellenprüfung (IEC 62382:2012)

Contrôle de boucle, électrique et d'instrumentation (CEI 62382:2012)

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

**Ta slovenski standard je istoveten z: EN 62382:2013**

<https://standards.iteh.ai/catalog/standards/sist/94de28a7-d835-4db2-814c-85ab2e7fa6a0/sist-en-62382-2013>

---

**ICS:**

25.040.01	Sistemi za avtomatizacijo v industriji na splošno	Industrial automation systems in general
-----------	---	--

**SIST EN 62382:2013**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 62382:2013

<https://standards.iteh.ai/catalog/standards/sist/94de28a7-d835-4db2-814c-85ab2e7fa6a0/sist-en-62382-2013>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 62382**

March 2013

ICS 25.040.40

Supersedes EN 62382:2007

English version

**Control systems in the process industry -  
Electrical and instrumentation loop check  
(IEC 62382:2012)**

Systèmes de commande pour les  
procédés industriels -  
Contrôle de boucle des circuits électriques  
et des appareillages  
(CEI 62382:2012)

Leittechnische Systeme in der  
verfahrenstechnischen Industrie -  
PLT-Stellenprüfung  
(IEC 62382:2012)

**iTeh STANDARD PREVIEW**

This European Standard was approved by CENELEC on 2012-12-13. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**CENELEC**

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

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 65E/271/FDIS, future edition 2 of IEC 62382, 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 62382:2013.

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) 2013-09-13
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-12-13

This document supersedes EN 62382:2007.

EN 62382:2013 includes the following significant technical changes with respect to EN 62382:2007:

- The definition of the documents mentioned in the standards is in accordance with EN 62708 <sup>1)</sup>: *Documents for electrical and instrumentation projects in the process industry*.
- Subclause 6.3 has been revised.

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.

**STANDARD PREVIEW**  
(standards.iteh.ai)  
SIST EN 62382:2013  
<https://standards.iteh.ai/en/standards/sist/043428e7-d835-4db2-814c-85ab2e7fa6a0/sist-en-62382-2013>  
**Endorsement notice**

The text of the International Standard IEC 62382:2012 was approved by CENELEC as a European Standard without any modification.

---

<sup>1)</sup> Under consideration.

## 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61131	Series	Programmable controllers	EN 61131	Series
IEC 62337	-	Commissioning of electrical, instrumentation and control systems in the process industry - Specific phases and milestones	EN 62337	-
IEC 62424	-	Representation of process control engineering - Requests in P&I diagrams and data exchange between P&ID tools and PCE-CAE tools	EN 62424	-
IEC 62708 <sup>1)</sup>	-	Documents for electrical and instrumentation projects in the process industry	prEN 62708	-

SIST EN 62382:2013  
<https://standards.iteh.ai/catalog/standards/sist/94de28a7-d835-4db2-814c-85ab2e7fa6a0/sist-en-62382-2013>

---

<sup>1)</sup> Under consideration.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 62382:2013

<https://standards.iteh.ai/catalog/standards/sist/94de28a7-d835-4db2-814c-85ab2e7fa6a0/sist-en-62382-2013>



IEC 62382

Edition 2.0 2012-11

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Control systems in the process industry – Electrical and instrumentation loop check**

(standards.iteh.ai)

**Systèmes de commande pour les procédés industriels – Contrôle de boucle des circuits électriques et des appareillages**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE  
CODE PRIX

S

ICS 25.040.40

ISBN 978-2-83220-480-1

**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 .....	8
4 Order of loop check and cold commissioning in the project schedule .....	8
5 Loop check content .....	9
5.1 Included activities.....	9
5.2 Activities excluded.....	11
6 Loop check procedure .....	11
6.1 Documentation check .....	11
6.2 Visual inspection .....	11
6.3 Function check .....	12
6.3.1 General .....	12
6.3.2 Sensors .....	12
6.3.3 Actuators .....	12
6.3.4 Motor loops .....	12
6.3.5 Inter-loops .....	13
6.3.6 Interlocks.....	13
6.3.7 Quality loops .....	13
6.3.8 Safety loops .....	13
6.4 Checkout of E&I Infrastructure and E&I concepts .....	13
6.5 Additional tests – Quality and safety relevant loops .....	13
7 Documents and test sheets .....	14
7.1 Input documents.....	14
7.2 Test sheets .....	14
7.3 Documents generated upon completion of loop check .....	14
7.4 Loop check results .....	14
8 Quality assurance.....	14
9 Safety aspects.....	15
Annex A (informative) Test report for analogue input loop.....	16
Annex B (informative) Test report for binary input loop.....	17
Annex C (informative) Test report for analogue output loop.....	18
Annex D (informative) Test report for binary output loop .....	19
Annex E (informative) Test report for motors and variable frequency drives .....	20
Figure 1 – Definition of phases and milestones .....	9
Figure 2 – Loop components.....	10



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONTROL SYSTEMS IN THE PROCESS INDUSTRY –  
ELECTRICAL AND INSTRUMENTATION LOOP CHECK**

## 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 62382 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

This second edition cancels and replaces the first edition published in 2006. This edition constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

- The definition of the documents mentioned in the standards is in accordance with IEC 62708: *Documents for Electrical and Instrumentation Projects in the Process Industry*.
- Subclause 6.3 has been revised.

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

FDIS	Report on voting
65E/271/FDIS	65E/282/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.**

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 62382:2013](https://standards.iteh.ai/catalog/standards/sist/94de28a7-d835-4db2-814c-85ab2e7fa6a0/sist-en-62382-2013)

<https://standards.iteh.ai/catalog/standards/sist/94de28a7-d835-4db2-814c-85ab2e7fa6a0/sist-en-62382-2013>

## INTRODUCTION

The inspection and verification of the individual measurements and controls in conjunction with the control systems used to monitor these devices (DCS, PLC, etc.) is referred to as loop check. In industry, numerous methods and philosophies are used to check the instrumentation and controls after mechanical installation within projects for modified or new facilities.

This standard was created to provide a better understanding of what loop check consists of and also to provide a standard methodology for executing a loop check.

The annexes of this standard contain forms which may be used in the check procedures. Buyers of this standard may copy these forms for their own purposes only in the required amount.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 62382:2013

<https://standards.iteh.ai/catalog/standards/sist/94de28a7-d835-4db2-814c-85ab2e7fa6a0/sist-en-62382-2013>