



SLOVENSKI STANDARD
SIST EN 62382:2007

01-julij-2007

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Electrical and instrumentation loop check (EN 62382:2007)

PLT-Stellenprüfung (EN 62382:2007)

Contrôle par retour pour l'instrumentation électrique (EN 62382:2007)

Ta slovenski standard je istoveten z: EN 62382:2007

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ICS:

25.040.01	Sistemi za avtomatizacijo v industriji na splošno	Industrial automation systems in general
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Electrical and instrumentation loop check
(IEC 62382:2006)

Contrôle par retour
pour l'instrumentation électrique
(CEI 62382:2006)

PLT-Stellenprüfung
(IEC 62382:2006)

This European Standard was approved by CENELEC on 2007-02-01. 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.

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 65/386/FDIS, future edition 1 of IEC 62382, prepared by IEC TC 65, Industrial-process measurement and control, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62382 on 2007-02-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2007-11-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2010-02-01

Endorsement notice

The text of the International Standard IEC 62382:2006 was approved by CENELEC as a European Standard without any modification.

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INTERNATIONAL STANDARD

IEC 62382

First edition
2006-11

Electrical and instrumentation loop check

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE

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CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Terms and definitions.....	6
3 Abbreviations	7
4 The order of loop check and cold commissioning in the project schedule.....	7
5 Loop-check content	8
5.1 Included activities.....	8
5.2 Excluded activities.....	10
6 Loop check procedure	10
6.1 Documentation check.....	10
6.2 Visual inspection	10
6.3 Function check	11
6.4 Checkout of E&I infrastructure and E&I concepts.....	11
6.5 Additional tests – Quality and safety relevant loops.....	12
7 Documents and test sheets	12
7.1 Input documents.....	12
7.2 Test sheets	12
7.3 Documents generated upon completion of loop check	13
7.4 Loop-check results	13
8 Quality assurance.....	13
9 Safety aspects.....	13
Annexe A (informative) Test report for analogue input loop.....	14
Annexe B (informative) Test report for binary input loop.....	15
Annexe C (informative) Test report for analogue output loop.....	16
Annexe D (informative) Test report for binary output loop	17
Annexe E (informative) Test report for motors and variable frequency drives	18

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICAL AND INSTRUMENTATION LOOP CHECK

FOREWORD

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International Standard IEC 62382 has been prepared by IEC technical committee 65: Industrial-process measurement and control.

This standard cancels and replaces IEC/PAS 62382 published in 2004. This first edition constitutes a technical revision.

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

FDIS	Report on voting
65/386/FDIS	65/395/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 maintenance result 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.

A bilingual version of this publication may be issued at a later date.

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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 loop check.

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

For application in the pharmaceutical or other highly specialized industries, additional guidelines (for example, Good Automated Manufacturing Practice (GAMP)), definitions and stipulations should apply in accordance with existing standards, for example, for GMP Compliance 21 CFR (FDA) and the Standard Operating Procedure of the European Medicines Agency (SOP/INSP/2003).

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ELECTRICAL AND INSTRUMENTATION LOOP CHECK

1 Scope

This International Standard describes the steps recommended to complete a loop check, which comprises the activities between the completion of the loop construction (including installation and point-to-point checks) and the start-up of cold commissioning. This standard is applicable for the construction of new plants and for expansion/retrofits (i.e. revamping) of E&I installations in existing plants (including PLC, BAS, DCS, panel-mounted and field instrumentation). It does not include a detailed checkout of power distribution systems, except as they relate to the loops being checked (i.e. a motor starter or a power supply to a four-wire transmitter).

2 Terms and definitions

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

2.1

precommissioning

phase, during which the activities of non-operating adjustments, cold alignment checks, cleaning, and testing of machinery take place.

NOTE Please refer to the enclosed annexes as an example.

2.2

mechanical completion

milestone, which is achieved when the plant, or any part thereof, has been erected and tested in accordance with drawings, specifications, instructions, and applicable codes and regulations to the extent necessary to permit cold commissioning

NOTE This includes completion of all necessary electrical and instrumentation work. This is a milestone marking the end of the precommissioning activities.

2.3

cold commissioning

phase, during which the activities associated with the testing and operation of equipment or facilities using test media such as water or inert substances prior to introducing any chemical in the system take place

2.4

start-up

milestone marking the end of cold commissioning.

NOTE At this stage, the operating range of every instrument loop is already adjusted to reflect the actual working condition.

2.5

hot commissioning

phase, during which the activities associated with the testing and operation of equipment or facilities using the actual chemical process prior to making an actual production run take place

2.6

start of production

milestone marking the end of hot commissioning.

NOTE At this stage, the plant is ready for full and continuous operation.

2.7**performance test**

milestone at which time the production plant runs to its design capacity

NOTE This test, carried out by the owner's personnel with the help and supervision of the contractor, should demonstrate the contractor's process performance and consumption guarantees as specified in the contract.

2.8**acceptance of plant**

milestone at which the formal turn over of the plant from the contractor to the owner is carried out

2.9**basic software**

software which, at a minimum, contains the graphic faceplates, base-level alarms and switch points, basic interlocking and analogue control. In the case of safety loops, any safety switch point should be included if it is not in the basic database

3 Abbreviations

BAS	Building automation systems
C&E	Cause and effect diagram
DCS	Distributed control system
E&I	Electrical and instrumentation and control systems
ESD	Emergency shut-down system
FAT	Factory acceptance testing
FBD	Functional block diagram
FUP	Function plan
HMI	Human machine interface
HW	Hardware
MC	Mechanical completion
PDS	Project design specifications
PFS	Project functional specification
PLC	Programmable logic controller
SAT	Site acceptance test
SIT	Site integration test
SW	Software

4 The order of loop check and cold commissioning in the project schedule

The loop checks will ideally occur in the precommissioning phase of the schedule shown in Figure 1.

However, normal occurrence is that the loop checks begin when any specific loop is completed and turned over to the checkout crew even if it is during the "construction" phase. The loop check could substantially overlap the "construction" phase.