

SLOVENSKI STANDARD
SIST EN 61557-1:2007

01-september-2007

BUXca Yý U
SIST EN 61557-1:2000

9`Y_f] bUj Ufbcghj `b]n_cbUdYrcg]b] `fUnXY]b] `g]ghYa] `]na Yb] bY`bUdYrcg]`Xc
 %_J`]b`Ybcga YfbY`bUdYrcg]`Xc`%`_J`!`CdfYa UnUdfYg_i ýUb`Yza Yf`Yb`YU]
 bUXncfcj Ub`Y`nUý]]b] `i_fYdcj `!`%`XY.`Gd`cýbY`nU H]j Y`f]97 `*`%`) +!`%&\$\$+L

Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. -
 Equipment for testing, measuring or monitoring of protective measures -- Part 1: General
 requirements

iTeh STANDARD PREVIEW

(standards.iteh.ai)

Elektrische Sicherheit in Niederspannungsnetzen bis AC 1 000 V und DC 1 500 V -
 Geräte zum Prüfen, Messen oder Überwachen von Schutzmaßnahmen -- Teil 1:
 Allgemeine Anforderungen

<https://standards.iteh.ai/catalog/standards/sist/ea055a21-2a93-442c-a5b2-9a7bee78c347/sist-en-61557-1-2007>

Sécurité électrique dans les réseaux de distribution basse tension de 1 000 V c.a. et 1
 500 V c.c. - Dispositifs de contrôle, de mesure ou de surveillance de mesures de
 protection -- Partie 1: Exigences générales

Ta slovenski standard je istoveten z: EN 61557-1:2007

ICS:

17.220.20	T`^ b} b`Á ^`dã} ã` { æ}^`ç`ã`^ ã`ã`	Measurement of electrical and magnetic quantities
29.080.01	Ò ^`dã} ã` [ã`ã`ã` æ •] [z] [Electrical insulation in general
29.240.01	U{ ^`0ã`ã` ^` [•`ã` ã`ã`ã` &ã` Á ^`dã} ^`Á} ^`!`ã` } ã` [z] [Power transmission and distribution networks in general

SIST EN 61557-1:2007 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61557-1:2007

<https://standards.iteh.ai/catalog/standards/sist/ea055a21-2a93-442c-a5b2-9a7bee78c347/sist-en-61557-1-2007>

English version

**Electrical safety in low voltage distribution systems
up to 1 000 V a.c. and 1 500 V d.c. -
Equipment for testing, measuring or monitoring
of protective measures -
Part 1: General requirements
(IEC 61557-1:2007)**

Sécurité électrique dans les réseaux
de distribution basse tension
de 1 000 V c.a. et 1 500 V c.c. -
Dispositifs de contrôle, de mesure
ou de surveillance de mesures
de protection -
Partie 1: Exigences générales
(CEI 61557-1:2007)

Elektrische Sicherheit
in Niederspannungsnetzen
bis AC 1 000 V und DC 1 500 V -
Geräte zum Prüfen,
Messen oder Überwachen
von Schutzmaßnahmen -
Teil 1: Allgemeine Anforderungen
(IEC 61557-1:2007)

[SIST EN 61557-1:2007](https://standards.iteh.ai/catalog/standards/sist/ea055a21-2a93-442c-a5b2-9a7bee78c347/sist-en-61557-1-2007)

<https://standards.iteh.ai/catalog/standards/sist/ea055a21-2a93-442c-a5b2-9a7bee78c347/sist-en-61557-1-2007>

This European Standard was approved by CENELEC on 2007-03-01. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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 85/290/FDIS, future edition 2 of IEC 61557-1, prepared by IEC TC 85, Measuring equipment for electrical and electromagnetic quantities, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61557-1 on 2007-03-01.

This European Standard supersedes EN 61557-1:1997.

The following changes were made with respect to EN 61557-1:1997:

- revision of the definitions;
- addition of influence quantities E_9 and E_{10} ;
- the subclause on Electromagnetic compatibility was complemented;
- inclusion of performance monitoring devices in the introduction;
- addition of new requirements for operating instructions.

This Part 1 specifies the general requirements. Parts 2 to 8 of EN 61557, which are to be used in conjunction with this Part 1, comprise specific specifications for individual measuring equipment.

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) 2007-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2010-03-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61557-1:2007 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 standards indicated:

IEC 60359	NOTE	Harmonized as EN 60359:2002 (not modified).
IEC 60364-6	NOTE	Harmonized as HD 60364-6:2007 (modified).
IEC 61326-1	NOTE	Harmonized as EN 61326-1:2006 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

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 60038 (mod)	1983	IEC standard voltages ¹⁾	HD 472 S1	1989
-	-		+ corr. February	2002
-	-		A1	1995
A1	1994			
A2	1997			
IEC 60364-6 (mod)	2006	Low voltage electrical installations - Part 6: Verification	HD 60364-6	2007
IEC 60664-1	- ²⁾	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2003 ³⁾
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
A1	1999		+ corr. May A1	1993 2000
IEC 61010-1	2001	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements	EN 61010-1	2001
			+ corr. June	2002
IEC 61010-2-030	200X ⁴⁾	Safety requirements for electrical equipment - for measurement, control and laboratory use - Part 2-030: Particular requirements for testing and measuring circuits	-	-
IEC 61326-2-2	2005	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-2: Particular requirements - Test configurations, operational conditions and performance criteria for portable test, measuring and monitoring equipment used in low-voltage distribution systems	EN 61326-2-2	2006

¹⁾ The title of HD 472 S1 is: Nominal voltages for low voltage public electricity supply systems.

²⁾ Undated reference.

³⁾ Valid edition at date of issue.

⁴⁾ To be published.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61326-2-4	2006	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-4: Particular requirements - Test configurations, operational conditions and performance criteria for insulation monitoring devices according to IEC 61557-8 and for equipment for insulation fault location according to IEC 61557-9	EN 61326-2-4	2006
IEC 61557-2	- ²⁾	Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 2: Insulation resistance	EN 61557-2	2007 ³⁾
IEC 61557-3	- ²⁾	Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 3: Loop impedance	EN 61557-3	2007 ³⁾
IEC 61557-4	- ²⁾	Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 4: Resistance of earth connection and equipotential bonding	EN 61557-4	2007 ³⁾
IEC 61557-5	- ²⁾	Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 5: Resistance to earth	EN 61557-5	2007 ³⁾
IEC 61557-6	- ⁴⁾	Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 6: Effectiveness of residual current devices (RCD) in TT, TN and IT systems	EN 61557-6	200X ⁵⁾
IEC 61557-7	- ²⁾	Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 7: Phase sequence	EN 61557-7	2007 ³⁾
IEC 61557-8	- ²⁾	Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 8: Insulation monitoring devices for IT systems	EN 61557-8	200X ⁵⁾

⁵⁾ To be ratified.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61557-9	- ²⁾	Electrical safety in low voltage distribution systems up to 1 kV a.c. and 1,5 kV d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 9: Equipment for insulation fault location in IT systems	EN 61557-9	1999 ³⁾
IEC 61557-10	- ²⁾	Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures - Part 10: Combined measuring equipment for testing, measuring or monitoring of protective measures	EN 61557-10	2001 ³⁾

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 61557-1:2007](https://standards.iteh.ai/catalog/standards/sist/ea055a21-2a93-442c-a5b2-9a7bee78c347/sist-en-61557-1-2007)

<https://standards.iteh.ai/catalog/standards/sist/ea055a21-2a93-442c-a5b2-9a7bee78c347/sist-en-61557-1-2007>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61557-1:2007

<https://standards.iteh.ai/catalog/standards/sist/ea055a21-2a93-442c-a5b2-9a7bee78c347/sist-en-61557-1-2007>

NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC

61557-1

Deuxième édition
Second edition
2007-01

**Sécurité électrique dans les réseaux
de distribution basse tension de 1 000 V c.a.
et 1 500 V c.c. –
Dispositifs de contrôle, de mesure ou de
surveillance de mesures de protection –
STANDARD PREVIEW
Partie 1: Exigences générales**
(standards.iten.ai)

SIST EN 61557-1:2007
<https://standards.iten.ai/catalog/standards/sist/en/61557-1/2007>
**Electrical safety in low voltage distribution
systems up to 1 000 V a.c. and 1 500 V d.c. –
Equipment for testing, measuring
or monitoring of protective measures –**

Part 1: General requirements

© IEC 2007 Droits de reproduction réservés — Copyright - all rights reserved

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'éditeur.

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 the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

Q

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

FOREWORD.....	5
INTRODUCTION.....	9
1 Scope.....	11
2 Normative references.....	11
3 Terms and definitions	13
4 Requirements	21
4.1 Operating uncertainty (<i>B</i>), percentage operating uncertainty (<i>B</i> [%])	23
4.2 Rated operating conditions	25
4.3 Battery check facility.....	25
4.4 Terminals	25
4.5 Class of protection.....	25
4.6 Class of pollution.....	25
4.7 Overvoltage category.....	25
4.8 Measuring category	25
4.9 Electromagnetic compatibility.....	27
4.10 Vibration test	27
5 Marking and operating instructions.....	27
5.1 Marking	27
5.2 Operating instructions.....	29
6 Tests.....	29
6.1 Influence of position.....	29
6.2 Influence of temperature.....	29
6.3 Influence of the supply voltage.....	31
6.4 Battery check facility.....	31
6.5 Protection class.....	31
6.6 Terminals	31
6.7 Mechanical requirements	31
6.8 Marking and operating instructions.....	31
Bibliography.....	33

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL SAFETY IN LOW VOLTAGE DISTRIBUTION SYSTEMS
UP TO 1 000 V a.c. AND 1 500 V d.c. –
EQUIPMENT FOR TESTING, MEASURING OR MONITORING
OF PROTECTIVE MEASURES –****Part 1: General requirements**

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.
<https://standards.iteh.ai/catalog/standards/sist/ea055a21-2a93-442c-a5b2->
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 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 61557-1 has been prepared by IEC technical committee 85: Measuring equipment for electrical and electromagnetic quantities.

This second edition replaces and cancels the first edition published in 1997. It constitutes a technical revision.

The following changes were made with respect to the previous edition:

- a) revision of the definitions
- b) addition of influence quantities E_9 and E_{10}
- c) the subclause on Electromagnetic compatibility was complemented
- d) inclusion of performance monitoring devices in the introduction
- e) addition of new requirements for operating instructions