

**SLOVENSKI STANDARD  
SIST EN IEC 61557-4:2022****01-marec-2022****Nadomešča:  
SIST EN 61557-4:2007**

---

**Električna varnost v nizkonapetostnih razdelilnih sistemih za izmenične napetosti do 1 kV in enosmerne napetosti do 1,5 kV - Oprema za preskušanje, merjenje ali nadzorovanje zaščitnih ukrepov - 4. del: Upornost ozemljitvenega priključka in povezav za izenačitev potencialov (IEC 61557-4:2019)**

Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 4: Resistance of earth connection and equipotential bonding (IEC 61557-4:2019)

**(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 4: Widerstand von Erdungsleitern, Schutzleitern und Potentialausgleichsleitern (IEC 61557-4:2019)

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 4: Résistance de conducteurs de terre et d'équipotentialité (IEC 61557-4:2019)

**Ta slovenski standard je istoveten z: EN IEC 61557-4:2021**

---

**ICS:**

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities
29.080.01	Električna izolacija na splošno	Electrical insulation in general

**SIST EN IEC 61557-4:2022****en,fr,de**

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

[SIST EN IEC 61557-4:2022](https://standards.iteh.ai/catalog/standards/sist/1adc0baa-e4cb-4ecd-9d01-f36c93471e52/sist-en-iec-61557-4-2022)

<https://standards.iteh.ai/catalog/standards/sist/1adc0baa-e4cb-4ecd-9d01-f36c93471e52/sist-en-iec-61557-4-2022>

EUROPEAN STANDARD

EN IEC 61557-4

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2021

ICS 17.220.20; 29.080.01; 29.240.01

Supersedes EN 61557-4:2007 and all of its amendments  
and corrigenda (if any)

English Version

Electrical safety in low voltage distribution systems up to 1 000 V  
AC and 1 500 V DC - Equipment for testing, measuring or  
monitoring of protective measures - Part 4: Resistance of earth  
connection and equipotential bonding  
(IEC 61557-4:2019)

Sécurité électrique dans les réseaux de distribution basse  
tension au plus égale à 1 000 V c.a. et 1 500 V c.c. -  
Dispositifs de contrôle, de mesure ou de surveillance de  
mesures de protection - Partie 4: Résistance de  
conducteurs de terre et d'équipotentialité  
(IEC 61557-4:2019)

Elektrische Sicherheit in Niederspannungsnetzen bis AC 1  
000 V und DC 1 500 V - Geräte zum Prüfen, Messen oder  
Überwachen von Schutzmaßnahmen - Teil 4: Widerstand  
von Erdungsleitern, Schutzleitern und  
Potentialausgleichsleitern  
(IEC 61557-4:2019)

FOR STANDARD  
PREVIEW

This European Standard was approved by CENELEC on 2021-11-10. 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.

<https://standards.itec.ai>  
[SIST EN IEC 61557-4:2022](https://standards.itec.ai/SIST/EN/IEC/61557-4/2022)

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.

2022

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, Turkey 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 61557-4:2021 (E)****European foreword**

The text of document 85/686/FDIS, future edition 3 of IEC 61557-4, prepared by IEC/TC 85 "Measuring equipment for electrical and electromagnetic quantities" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61557-4:2021.

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) 2022-08-10
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-11-10

This document supersedes EN 61557-4:2007 and all of its amendments and corrigenda (if any).

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.

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association.

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.

**STANDARD  
PREVIEW**  
**(standards.iteh.ai)**  
**Endorsement notice**

SIST EN IEC 61557-4:2022

The text of the International Standard IEC 61557-4:2019 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61010-1:2010      NOTE Harmonized as EN 61010-1:2010 (not modified)

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61010-031	-	Safety requirements for electrical equipment for measurement, control and laboratory use - Part 031: Safety requirements for hand-held probe assemblies for electrical measurement and test	EN 61010-031	-
IEC 61010-2-030	2017	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-030: Particular requirements for equipment having testing or measuring circuits	EN IEC 61010-2-030	2021
-	-	<a href="https://standards.iec.ch/catalog/standards/sist/1adc0baa-e4cb-4ecd-9d01-f36c93471e52/sist-en-iec-61557-4-2021">https://standards.iec.ch/catalog/standards/sist/1adc0baa-e4cb-4ecd-9d01-f36c93471e52/sist-en-iec-61557-4-2021</a>	+ A11	2021
IEC 61557-1	2019	Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC - Equipment for testing, measuring or monitoring of protective measures - Part 1: General requirements	EN IEC 61557-1	2021

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

SIST EN IEC 61557-4:2022

<https://standards.iteh.ai/catalog/standards/sist/1adc0baa-e4cb-4ecd-9d01-f36c93471e52/sist-en-iec-61557-4-2022>



IEC 61557-4

Edition 3.0 2019-07

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

---

iTeh STANDARD

**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**

**Sécurité électrique dans les réseaux de distribution basse tension au plus égale à 1 000 V c.a. et 1 500 V c.c. – Dispositifs de contrôle, de mesure ou de surveillance de mesures de protection –**  
**Partie 4: Résistance de conducteurs de terre et d'équipotentialité**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

---

ICS 17.220.20; 29.080.01; 29.240.01

ISBN 978-2-8322-7158-2

**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
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	5
4 Requirements .....	5
4.1 General .....	5
4.2 Measuring voltage .....	6
4.3 Measuring current .....	6
4.4 Measuring with DC .....	6
4.5 Measuring range .....	6
4.6 External resistance .....	6
4.7 Indication of limits .....	6
4.8 Overvoltage .....	7
5 Marking and operating instructions .....	7
5.1 Marking .....	7
5.2 Operating instructions .....	7
6 Tests .....	7
6.1 General .....	7
6.2 Operating uncertainty .....	7
6.3 Open-circuit voltage .....	8
6.4 Measuring current .....	8
6.5 Indication of limits .....	8
6.6 Overvoltage .....	8
6.7 Battery life in battery operated instruments .....	9
Bibliography .....	10
Table 1 – Calculation of operating uncertainty .....	8



## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL SAFETY IN LOW VOLTAGE DISTRIBUTION SYSTEMS  
UP TO 1 000 V AC AND 1 500 V DC –  
EQUIPMENT FOR TESTING, MEASURING OR MONITORING  
OF PROTECTIVE MEASURES –**

**Part 4: Resistance of earth connection  
and equipotential bonding**

## 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 61557-4 has been prepared by IEC technical committee 85: Measuring equipment for electrical and electromagnetic quantities.

This third edition cancels and replaces the second edition published in 2007. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) complement to the measurement category in Clause 4;
- b) correction of the equation for operating uncertainty;
- c) complement to the requirements for measuring with DC;

d) alignment of the structure with that of the whole IEC 61557 series.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
85/686/FDIS	85/695/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This International Standard is to be used in conjunction with IEC 61557-1:2019.

A list of all parts of the IEC 61557 series, published under the general title *Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC – Equipment for testing, measuring or monitoring of protective measures*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

iteh STANDARD  
PREVIEW  
(standards.iteh.ai)

SIST EN IEC 61557-4:2022

<https://standards.iteh.ai/catalog/standards/sist/1adc0baa-e4cb-4ecd-9d01-f36c93471e52/sist-en-iec-61557-4-2022>