



BSI Standards Publication

**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**

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Part 5: Resistance to earth

## National foreword

This British Standard is the UK implementation of EN IEC 61557-5:2021. It is identical to IEC 61557-5:2019. It supersedes BS EN 61557-5:2007, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PEL/85, Measuring equipment for electrical and electromagnetic quantities.

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ISBN 978 0 580 99194 3

ICS 17.220.20; 29.080.01; 29.240.01

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2022.

**Amendments/corrigenda issued since publication**

Date	Text affected
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EUROPEAN STANDARD

**EN IEC 61557-5**

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2021

ICS 17.220.20; 29.080.01; 29.240.01

Supersedes EN 61557-5:2007 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 5: Resistance to earth  
(IEC 61557-5:2019)**

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 5: Résistance à la terre  
(IEC 61557-5:2019)

Elektrische Sicherheit in Niederspannungsnetzen bis AC 1  
000 V und DC 1 500 V - Geräte zum Prüfen, Messen oder  
Überwachen von Schutzmaßnahmen - Teil 5:  
Erdungswiderstand  
(IEC 61557-5:2019)

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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**

## **European foreword**

The text of document 85/685/FDIS, future edition 3 of IEC 61557-5, 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 61557-5:2021.

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

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# IEC 61557-5

Edition 3.0 2019-07

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**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**

**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 5: Résistance à la terre**



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# IEC 61557-5

Edition 3.0 2019-07

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Electrical safety in low voltage distribution systems up to 1 000 V a.c. and  
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measures –  
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**Sécurité électrique dans les réseaux de distribution basse tension au plus égale  
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surveillance de mesures de protection –  
Partie 5: Résistance à la terre**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

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ICS 17.220.20; 29.080.01; 29.240.01

ISBN 978-2-8322-7159-9

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## 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 5: Resistance to earth**

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International Standard IEC 61557-5 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) definitions and symbols in Clause 3 modified;
- b) subclauses in Clause 4 restructured and aligned with other parts of the series;
- c) limits for reduced voltages 25 V RMS or 35 V peak removed from 4.5;

- d) requirements for clamps added;
- e) marking for rated voltages to earth and measurement category added to Clause 5;
- f) warning about absence of hazardous voltage added in Clause 5;
- g) the term "percentage operating uncertainty" replaced by "operating uncertainty" in Clause 6;
- h) equation for uncertainty corrected in Table 1;
- i) new Annex A on test measurements with loop clamps added.

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

FDIS	Report on voting
85/685/FDIS	85/696/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

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- amended.

# 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 5: Resistance to earth

### 1 Scope

This part of IEC 61557 specifies the requirements applicable to measuring equipment for measuring the resistance to earth using an AC voltage.

### 2 Normative references

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.

IEC 60364-6:2016, *Low voltage electrical installations – Part 6: Verification*

IEC 61010-1:2010, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements*  
IEC 61010-1:2010/AMD1:2016<sup>1</sup>

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*

IEC 61010-2-032, *Safety requirements for electrical equipment for measurement, control and laboratory use – Part 2-032: Particular requirements for hand-held and hand-manipulated current sensors for electrical test and measurement*

IEC 61243-3, *Live working – Voltage detectors – Part 3: Two-pole low-voltage type*

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*

### 3 Terms and definitions

For the purposes of this document, the terms, definitions and symbols given in IEC 61557-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

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<sup>1</sup> A consolidated version of this publication exists, comprising IEC 61010-1:2010 and IEC 61010-1:2010/AMD1:2016.