



IEC 61557-10

Edition 3.0 2024-10  
COMMENTED VERSION

# INTERNATIONAL STANDARD



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**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 10: Combined measuring equipment for testing, measuring and monitoring of protective measures**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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ICS 17.220.20; 29.080.01; 29.240.01

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**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 10: Combined measuring equipment for testing, measuring-~~or~~ and  
monitoring of protective measures****FOREWORD**

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**This commented version (CMV) of the official standard IEC 61557-10:2024 edition 3.0 allows the user to identify the changes made to the previous IEC 61557-10:2013 edition 2.0. Furthermore, comments from IEC TC 85 experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.**

**A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.**

**This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.**

IEC 61557-10 has been prepared by IEC technical committee TC85: Measuring equipment for electrical and electromagnetic quantities. It is an International Standard.

This third edition cancels and replaces the second edition published in 2013. This edition constitutes a technical revision.

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

- a) The scope has been updated to include the combination of measuring functions covered by the IEC 61557 series with those not covered by the IEC 61557 series.
- b) Reasonably foreseeable misuse is now considered.
- c) An exemption has been added for terminals that can only be accessed by use of a tool.
- d) Table 1 has been updated for clarification.
- e) The voltage source used for the overload test takes into account the expected short-circuit currents for measurement categories in accordance with IEC 61010-2-030:2017.

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

| Draft      | Report on voting |
|------------|------------------|
| 85/887/CDV | 85/914/RVC       |

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

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 [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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# 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 10: Combined measuring equipment for testing, measuring~~or~~ and monitoring of protective measures

### 1 Scope

This part of IEC 61557 specifies the requirements for~~combined~~ measuring equipment that combines several measuring functions or methods of testing, measuring or monitoring, that are in accordance with the respective parts of IEC 61557, into one piece of apparatus.

Measuring equipment which combines measuring functions or methods of testing, measuring or monitoring covered by the respective parts of IEC 61557 with those not covered by the respective parts of IEC 61557 is also within the scope of this document. **1**

### 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 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*

IEC 61557-2, *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 2: Insulation resistance*

IEC 61557-3, *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 3: Loop impedance*

IEC 61557-4, *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 61557-5, *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 61557-6, *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 6: Effectiveness of residual current devices (RCD) in TT, TN and IT systems*

IEC 61557-7, *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 7: Phase sequence*

IEC 61010-2-030:~~2010~~2023, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-030: Particular requirements for equipment having testing and or measuring circuits*

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**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 10: Combined measuring equipment for testing, measuring and monitoring of protective measures**

**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 10: Appareils combinés de contrôle, de mesure et de surveillance de mesures de protection**



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**INTERNATIONAL ELECTROTECHNICAL COMMISSION**

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IEC 61010-2-030:2023, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-030: Particular requirements for equipment having testing or measuring circuits*

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## COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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### **SÉCURITÉ ÉLECTRIQUE DANS LES RÉSEAUX DE DISTRIBUTION BASSE TENSION AU PLUS ÉGAL 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 10: Appareils combinés de contrôle, de mesure et de surveillance de mesures de protection**

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L'IEC 61557-10 a été établie par le comité d'études 85 de l'IEC: Équipement de mesure des grandeurs électriques et électromagnétiques. Il s'agit d'une Norme internationale.

Cette troisième édition annule et remplace la deuxième édition parue en 2013. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) Le domaine d'application a été mis à jour en vue d'inclure la combinaison de fonctions de mesure couverte par la série IEC 61557 ainsi que celles non couvertes par la série IEC 61557.
- b) Un mauvais usage raisonnablement prévisible est dorénavant pris en considération.
- c) Une exemption a été ajoutée pour les bornes accessibles uniquement à l'aide d'un outil.
- d) Le Tableau 1 a été mis à jour à des fins de clarification.
- e) La source de tension utilisée pour l'essai de surcharge prend en compte les courants de court-circuit prévus pour les catégories de mesure conformément à l'IEC 61010-2-030:2017

Le texte de cette Norme internationale est issu des documents suivants:

| Projet     | Rapport de vote |
|------------|-----------------|
| 85/887/CDV | 85/914/RVC      |

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). Les principaux types de documents développés par l'IEC sont décrits plus en détail sous [www.iec.ch/publications/](http://www.iec.ch/publications/).

La présente Norme internationale doit être utilisée conjointement avec l'IEC 61557-1:2019.

Une liste de toutes les parties de l'IEC 61557, publiées sous le titre général *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*, se trouve sur le site web de l'IEC.

Le comité a décidé que le contenu de ce document ne sera pas modifié avant la date de stabilité indiquée sur le site web de l'IEC sous [webstore.iec.ch](http://webstore.iec.ch) dans les données relatives au document recherché. À cette date, le document sera

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**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 10: Appareils combinés de contrôle, de mesure et de surveillance  
de mesures de protection**

## 1 Domaine d'application

La présente partie de l'IEC 61557 spécifie les exigences relatives aux appareils de mesure qui combinent en un seul appareil plusieurs fonctions de mesures ou méthodes de contrôle, de mesure ou de surveillance, et qui sont conformes aux parties concernées de l'IEC 61557.

Les appareils de mesure qui combinent des fonctions de mesures ou méthodes de contrôle, de mesure ou de surveillance et sont couverts par les parties concernées de l'IEC 61557, ainsi que ceux qui ne sont pas couverts par les parties concernées de l'IEC 61557, sont également inclus dans le domaine d'application du présent document.

## 2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 61557-1:2019, *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 1: Exigences générales*

IEC 61557-2, *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 2: Résistance d'isolement*

IEC 61557-3, *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 3: Impédance de boucle*

IEC 61557-4, *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 61557-5, *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 5: Résistance à la terre*

IEC 61557-6, *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 6: Efficacité des dispositifs à courant différentiel résiduel (DDR) dans les réseaux TT, TN et IT*

IEC 61557-7, *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 7: Ordre de phases*

IEC 61010-2-030:2023, *Exigences de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire – Partie 2-030: Exigences particulières pour les appareils équipés de circuits d'essai ou de mesure*