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INTERNATIONAL 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 3: Loop impedance**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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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 3: Loop impedance****FOREWORD**

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International Standard IEC 61557-3 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) addition of requirements as regards the measurement category;
- b) addition of new requirements for operating instructions;
- c) 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
85/687/FDIS	85/694/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 in 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.

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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 3: Loop impedance

1 Scope

This part of IEC 61557 specifies the requirements applicable to equipment for measuring the loop impedance between a ~~phase~~ line conductor and protective conductor ~~or~~; between a ~~phase~~ line conductor and neutral; or between two ~~phase~~ line conductors by using the voltage drop when the circuit under test is loaded.

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 61010-1:~~2004~~2010, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements*
IEC 61010-1:2010/AMD1:2016¹

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 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*

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

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 3: Loop impedance

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 3: Impédance de boucle

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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EQUIPMENT FOR TESTING, MEASURING OR MONITORING
OF PROTECTIVE MEASURES –****Part 3: Loop impedance****FOREWORD**

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Part 3: Loop impedance

1 Scope

This part of IEC 61557 specifies the requirements applicable to equipment for measuring the loop impedance between a line conductor and protective conductor; between a line conductor and neutral; or between two line conductors by using the voltage drop when the circuit under test is loaded.

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

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

**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 3: Impédance de boucle****AVANT-PROPOS**

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La Norme internationale IEC 61557-3 a été établie par le comité d'études 85 de l'IEC: Equipements de mesure des grandeurs électriques et électromagnétiques

Cette troisième édition annule et remplace la deuxième édition parue en 2007. Cette édition constitue une révision technique.

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

- a) ajout d'une exigence relative à la catégorie de mesure;
- b) ajout de nouvelles exigences relatives aux instructions de fonctionnement;

c) alignement de la structure sur l'ensemble de la série IEC 61557.

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

FDIS	Rapport de vote
85/687/FDIS	85/694/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette Norme internationale.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

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

Une liste de toutes les parties de la série 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*, peut être consultée sur le site web de l'IEC.

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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 3: Impédance de boucle

1 Domaine d'application

La présente partie de l'IEC 61557 spécifie les exigences applicables aux appareils destinés à mesurer l'impédance de boucle entre un conducteur de ligne et le conducteur de protection, entre un conducteur de ligne et le conducteur neutre, ou entre deux conducteurs de ligne en utilisant la chute de tension lorsque le circuit en essai est chargé.

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 61010-1:2010, *Règles de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire – Partie 1: Exigences générales*
IEC 61010-1:2010/AMD1:2016¹

IEC 61010-2-030:2017, *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*

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*

¹ Il existe une version consolidée de cette publication, comprenant l'IEC 61010-1:2010 et l'IEC 61010-1:2010/AMD1:2016.