IEC 61557-16

Edition 2.0 2023-08

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 16: Equipment for testing the effectiveness of the protective measures of electrical equipment and/or medical electrical equipment

Sécurité électrique dans les réseaux de distribution basse tension au plus égale à 1 000 V en courant alternatif et 1 500 V en courant continu – Dispositifs de contrôle, de mesure ou de surveillance de mesures de protection –
Partie 16: Équipement pour les essais de bon fonctionnement des mesures de protection des appareils électriques et/ou des appareils électromédicaux

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 17.220.20, 29.080.01

ISBN 978-2-8322-7251-0

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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 –

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IEC 61557-16 has been prepared by IEC technical committee 85: Measuring equipment for electrical and electromagnetic quantities. It is an International Standard.

This second edition cancels and replaces the first edition published in 2014. This edition constitutes a technical revision.

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

a) splitting of uncertainty requirements for medical and non-medical electrical equipment in 4.2.1;
b) addition of a definition of ranges with defined uncertainty in 4.2.1 to 4.2.7;
c) addition of an optional measuring device (MD) for non-medical devices in 4.2.1;

d) addition of a limitation of the maximum intrinsic uncertainty for medical applications at leakage current in 4.2.1;

e) change of 4.2.3 from test sockets to sockets for service purposes;

f) addition of a warning in the operating instructions;

g) integration of former 6.3 into 6.2;

h) update of Table 1;

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

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

Draft	Report on voting
85/876/FDIS	85/885/RVD

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. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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.

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 in the data related to the specific document. At this date, the document will be

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- withdrawn,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

INTRODUCTION

This part of IEC 61557 defines performance requirements of measuring equipment intended for testing the effectiveness of the protective measures of either electrical equipment or medical electrical equipment, or both (in accordance with IEC 62353). It is the intention of this document to achieve comparable measuring results, additional safety for the person carrying out the testing, and non-damaging electrical stress for the unit under test.

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 16: Equipment for testing the effectiveness of the protective measures of electrical equipment and/or medical electrical equipment

1 Scope

This part of IEC 61557 specifies the requirements applicable to the performance for test and measurement equipment in order to determine the effectiveness of the protective measures for electrical equipment and/or medical electrical equipment described in IEC 62353.

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 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60601-1:2005, *Medical electrical equipment – Part 1: General requirements for basic safety and essential performance*
IEC 60601-1:2005/AMD1:2012
IEC 60601-1:2005/AMD2:2020

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

IEC 61010-031, *Safety requirements for electrical equipment for measurement, control and laboratory use – Part 031: Safety requirements for hand-held and hand-manipulated probe assemblies for electrical test and measurement*

IEC 61010-2-030, *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 61010-2-034, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-034: Particular requirements for measurement equipment for insulation resistance and test equipment for electric strength*

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*