

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 14: Equipment for testing the safety of electrical equipment of machinery

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 14: Dispositifs de contrôle de la sécurité des appareils électriques sur machines



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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 14: Equipment for testing the safety of electrical
equipment of machinery**

FOREWORD

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IEC 61557-14 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 2013. This edition constitutes a technical revision.

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

- a) clarifying the introduction;
- b) replaced "dielectric strength" by "voltage test";
- c) requirement for maximum output current has been added in 4.2.6.1;
- d) tripping time at electrical switching activated by two-hand operation has been added in 4.2.6.1;

- e) additional time limiting capability for the protection against electric shock for test persons and bystanders in 4.2.6.2;
- f) updated references for safety testing;
- g) 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
85/875/FDIS	85/884/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 document defines particular requirements for test and measurement equipment used to determine the electrical safety of electrical equipment of machinery. The IEC 61010 series, other parts of the IEC 61557 series and the IEC 60204 series do not cover all safety aspects of equipment used for testing electrical equipment of machinery in accordance with the test sequence of IEC 60204-1.

This document provides additional measures to reduce the risk of electric shock for the test persons and bystanders during voltage tests in the field. This document also defines performance requirements for each test and measurement function to ensure reliable and comparable results.

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Part 14: Equipment for testing the safety of electrical equipment of machinery

1 Scope

This part of IEC 61557 defines special requirements for test and measurement equipment used to determine the electrical safety of electrical equipment of machinery in accordance with IEC 60204-1.

2 Normative references

The following documents are referred to in the text in such a way that none 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 60204-1, *Safety of machinery – Electrical equipment of machines – Part 1: General requirements*

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

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 61010-1:2010, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements*
IEC 61010-1:2010/AMD1:2011

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 61010-2-034, *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*

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*