AS/NZS 60255.27:2025

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Australian/New Zealand Standard™

Measuring relays and protection equipment

Part 27: Product safety requirements (IEC 60255-27:2023 (ED. 3.0) MOD)

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AS/NZS 60255.27:2025

This Joint Australian/New Zealand Standard™ was prepared by Joint Technical Committee EL-042, Renewable Energy Power Supply Systems & Equipment. It was approved on behalf of Standards Australia's Standards Development and Accreditation Committee on 16 January 2025 and by the New Zealand Standards Approval Board on 11 December 2024.

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Australian Energy Council
Australian Energy Market Operator
Australian Industry Group
Australian PV Institute
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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-042, Renewable Energy Power Supply Systems and Equipment.

The objective of this document is to specify the product safety requirements for measuring relays and protection equipment having a rated AC voltage up to 1 000 V, or a rated DC voltage up to 1 500 V. Above these limits, IEC 60664-1 is applicable for the determination of clearance, creepage distance and withstand test voltage.

This document specifies essential safety requirements to minimize the risk of fire and hazards caused by electric shock or injury to the user and property. This document specifies only product safety requirements: functional performance of the equipment is not covered.

This document covers all the ways in which the equipment can be mounted and used in cabinets, racks and panels. This document also applies to auxiliary devices such as shunts, series resistors, transformers, auxiliary control panels, display devices, etc., that are used in conjunction with measuring relays and protection equipment and are tested together.

This document does not specify the implementation of individual equipment, circuits and components.

This document applies to equipment designed to be safe at least under the following environmental conditions:

(a) Indoor use.

(b) Altitude up to 2 000 m, in accordance with AS/NZS 60255.1.

(c) Rated ambient temperature range, in accordance with AS/NZS 60255.1.

(d) Maximum external relative humidity, in accordance with AS/NZS 60255.1.

(e) Operating range of auxiliary energizing voltage, in accordance with AS/NZS 60255.1.

(f) Applicable overvoltage category.

(g) Applicable pollution degree of the intended environment (pollution degree 2 in most cases).

This document specifies the immunity test requirements for measuring relays and protection equipment in relation to continuous and transient, conducted and radiated disturbances, including electrostatic discharges.

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Foreword

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IEC 60255-27 has been prepared by IEC technical committee 95: Measuring relays and protection equipment. 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) conflicting statements removed;

b) scope clarified and statement added that all clauses of the standard are required not just type tests;

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c) terminology, definitions and documentation requirements aligned with IEC 60255–1;

d) alignment with IEC 61010–1, e.g. HLV definitions;

e) ingress protection clarified;

f) dielectric and impulse tests added to mechanical and environmental test requirements;

g) insulation resistance requirements updated for alignment with other product safety standards;

h) sample testing removed;

i) short time limiting thermal overload added;

j) resistance to mechanical stress added;

k) low-power voltage and current transformer ports added;

l) Annex C tables updated to align with base standards;

m) Annex D voltage dependent resistors and radio transmitters added;

n) Annex G for risk assessment added.

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

Draft	Report on voting
95/516/FDIS	95/526/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.

A list of all parts in the IEC 60255 series, published under the general title *Measuring relays and protection equipment*, 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.

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Introduction

This document specifies the safety requirements that are generally applicable to all equipment within its scope. These requirements may be supplemented by general product safety standards and IEC 60664–1.

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NOTES

Australian/New Zealand Standard

Measuring relays and protection equipment

Part 27: Product safety requirements (IEC 60255-27:2023 (ED. 3.0) MOD)

1 Scope

This part of IEC 60255 specifies the product safety requirements for measuring relays and protection equipment having a rated AC voltage up to 1 000 V, or a rated DC voltage up to 1 500 V. Above these limits, IEC 60664–1 is applicable for the determination of clearance, creepage distance and withstand test voltage.

This document specifies essential safety requirements to minimize the risk of fire and hazards caused by electric shock or injury to the user and property. This document specifies only product safety requirements; functional performance of the equipment is not covered.

This document covers all the ways in which the equipment can be mounted and used in cabinets, racks and panels. This document also applies to auxiliary devices such as shunts, series resistors, transformers, auxiliary control panels, display devices, etc., that are used in conjunction with measuring relays and protection equipment and are tested together.

It is possible that ancillary equipment such as network switches used in conjunction with measuring relays and protection equipment needs to comply with additional safety requirements.

This document does not specify the implementation of individual equipment, circuits and components.

This document applies to equipment designed to be safe at least under the following environmental conditions:

– indoor use;

– altitude up to 2 000 m, in accordance with IEC 60255–1;

– rated ambient temperature range, in accordance with IEC 60255–1;

– maximum external relative humidity, in accordance with IEC 60255–1;

– operating range of auxiliary energizing voltage in accordance with IEC 60255–1;

– applicable overvoltage category;

– applicable pollution degree of the intended environment (pollution degree 2 in most cases).

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.

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