AS/NZS 60255.1:2025

STANDARDS NEW ZEALAND
TE MANA TAUTĪKANGA O AOTEAROA

STANDARDS Australia

Australian/New Zealand Standard™

Measuring relays and protection equipment

Part 1: Common requirements (IEC 60255-1:2022 (ED. 2.0) MOD)

AS/NZS 60255.1:2025

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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The following are represented on Committee EL-042:

Australasian Fire and Emergency Service Authorities Council
Australian Energy Council
Australian Energy Market Operator
Australian Industry Group
Australian PV Institute
Better Regulation Division (Fair Trading, SafeWork NSW, TestSafe)
CSIRO
Clean Energy Council
Clean Energy Regulator
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Solar Energy Industries Association
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Australian/New Zealand Standard™

Measuring relays and protection equipment

Part 1: Common requirements (IEC 60255-1:2022 (ED. 2.0) MOD)

First published as AS/NZS 60255.1:2025.

Preface

This Standard 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 common rules and requirements applicable to measuring relays and protection equipment, including any combination of equipment to form a distributed protection scheme for power system protection such as control, monitoring and process interface equipment, to obtain uniformity of requirements and tests. This document covers the main technologies in use today; other emerging technologies present specific EMC and safety issues but the philosophy in this document will be applied.

All measuring relays and protection equipment used for protection within the power system environment are covered by this document. Other documents in this series can define their own requirements which in such cases take precedence. The typical locations for measuring relays and protection equipment are where protection of electrical equipment is required: generally power stations, substations and industrial locations.

Measuring relays and protection equipment installed in special applications (marine, railways, aerospace, explosive atmospheres, computer centres, etc.) could be enhanced by additional requirements required by that application.

This document is an adoption with national modifications, and has been reproduced from IEC 60255-1:2022, *Measuring relays and protection equipment — Part 1: Common requirements.* The modifications are set out in national variations boxes which give instructions where the IEC text is to be modified for use in Australia. Due to IEC copyright policy it is not possible to directly modify the IEC content.

As this document has been reproduced from an international document, the following apply:

(a) In the source text “This part of IEC 60255” should read “This document”.

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Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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FOREWORD

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IEC 60255-1 has been prepared by IEC technical committee 95: Measuring relays and protection equipment. It is an International Standard.

This second edition cancels and replaces the first edition published in 2009. This edition constitutes a technical revision.

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

a) scope of document clarified;

b) merging units and communications as an integral part of the protection added;

c) binary output clarification expanded;

d) environmental operating conditions added (Annex B);

e) test reference conditions added;

f) multiple changes to improve understanding across most clauses;

g) derating by manufacturer added;

h) safety and EMC tests removed from document and referenced only;

i) relay setting and type test guidelines modified (Annex A)

j) battery monitor port and low power instrument transformers added.

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

Draft	Report on voting
95/513/FDIS	95/521/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.

INTRODUCTION

The following explains the numbering of documents falling under the responsibility of TC 95:

The numbering of documents follows the following principle:

- common standards start with IEC 60255–XX;
- protection functional standards fall into IEC the 60255-1XX series.

The IEC 60255 series consists of the following parts:

a) Common standards:

Part 1: Common requirements

Part 21: Vibration, shock, bump and seismic tests

Part 24: Common format for transient data exchange (COMTRADE) for power systems

Part 26: Electromagnetic compatibility requirements

Part 27: Product safety requirements

b) Protection functional standards:

Part 1XX: Functional requirements

NOTE The last two digits of the part of the proposed functional standard new numbering correspond to function numbers as established in IEEE Std C37.2™-2008 [3][1].

1 Numbers in square brackets refer to the Bibliography.

Australian/New Zealand Standard

Measuring relays and protection equipment

Part 1: Common requirements (IEC 60255-1:2022 (ED. 2.0) MOD)

1 Scope

This part of IEC 60255 specifies common rules and requirements applicable to measuring relays and protection equipment, including any combination of equipment to form a distributed protection scheme for power system protection such as control, monitoring and process interface equipment, to obtain uniformity of requirements and tests. This document covers the main technologies in use today; other emerging technologies present specific EMC and safety issues but the philosophy in this document will be applied.

All measuring relays and protection equipment used for protection within the power system environment are covered by this document. Other documents in this series can define their own requirements which in such cases take precedence. The typical locations for measuring relays and protection equipment are where protection of electrical equipment is required: generally power stations, substations and industrial locations.

Measuring relays and protection equipment installed in special applications (marine, railways, aerospace, explosive atmospheres, computer centres, etc.) could be enhanced by additional requirements required by that application.

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.

NATIONAL VARIATIONS

1. After the first paragraph, *add* the following:

The Australian/New Zealand Standards listed below are modified adoptions of, or not equivalent to, the IEC normative references and are required for the application of this document. All references in the source text to those IEC normative references shall be replaced by references to the corresponding Australian or Australian/New Zealand Standards.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably.

2. *Delete* "IEC 60068-2-1, *Environmental testing – Part 2-1: Tests - Test A: Cold"* and *replace* with the following:

AS 60068.2.1, *Environmental testing, Part 2.1: Tests - Test A: Cold (IEC 60068-2-1:2007 (ED. 6.0) MOD)*

3. *Delete* "IEC 60068-2-2, *Environmental testing – Part 2-2: Tests - Test B: Dry heat"* and *replace* with the following:

AS 60068.2.2, *Environmental testing, Part 2.2: Tests - Test B: Dry heat (IEC 60068-2-2:2007 (ED. 5.0) MOD)*

4. *Delete* "IEC 60068-2-14, *Environmental testing – Part 2-14: Tests - Test N: Change of temperature*" and *replace* with the following:

AS 60068.2.14:2023 *Environmental testing, Part 2.14: Tests - Test N: Change of temperature (IEC 60068-2-14:2009 (ED. 6.0) MOD)*