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Measuring relays and protection equipment - Part 27: Product safety requirements

Táto norma obsahuje anglickú verziu európskej normy.

This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/25

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**Measuring relays and protection equipment - Part 27: Product
safety requirements
(IEC 60255-27:2023)**

Relais de mesure et dispositifs de protection - Partie 27:
Exigences de sécurité des produits
(IEC 60255-27:2023)

Messrelais und Schutzeinrichtungen - Teil 27:
Anforderungen an die Produktsicherheit
(IEC 60255-27:2023)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 60255-27:2025 (E)**European foreword**

The text of document 95/516/FDIS, future edition 3 of IEC 60255-27, prepared by TC 95 "Measuring relays and protection equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60255-27:2025.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2026-04-30 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2028-04-30 document have to be withdrawn

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The text of the International Standard IEC 60255-27:2023 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60332 series	NOTE	Approved as EN IEC 60332 series
IEC 60384-14:2013/A1:2016	NOTE	Approved as EN 60384-14:2013/A1:2016 (not modified)
IEC 60695-2-12	NOTE	Approved as EN IEC 60695-2-12
IEC 60695-11-5	NOTE	Approved as EN 60695-11-5
IEC 61508 series	NOTE	Approved as EN 61508 series
IEC 61558 series	NOTE	Approved as EN IEC 61558 series
IEC 61810-1	NOTE	Approved as EN 61810-1
IEC 61869-1	NOTE	Approved as EN IEC 61869-1
IEC 62368-1	NOTE	Approved as EN IEC 62368-1
IEC 62477-1:2022	NOTE	Approved as EN IEC 62477-1:2023 (not modified)
IEC 62479	NOTE	Approved as EN 62479

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60085	-	Electrical insulation - Thermal evaluation and designation	EN 60085	-
IEC 60127-1	-	Miniature fuses - Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links	EN IEC 60127-1	-
IEC 60255-1	-	Measuring relays and protection equipment - Part 1: Common requirements	EN IEC 60255-1	-
IEC 60255-26	-	Measuring relays and protection equipment - Part 26: Electromagnetic compatibility requirements	EN IEC 60255-26	-
IEC 60352-1	-	Solderless connections - Part 1: Wrapped connections - General requirements, test methods and practical guidance	EN 60352-1	-
IEC 60352-2	-	Solderless connections - Part 2: Crimped connections - General requirements, test methods and practical guidance	EN IEC 60352-2	-
IEC 60417	-	Graphical symbols for use on equipment. Index, survey and compilation of the single sheets.	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
-	-		+ AC	1993
+ A1	1999		+ A1	2000
+ A2	2013		+ A2	2013
-	-		+ AC	2016
IEC 60664-1	2020	Insulation coordination for equipment within low-voltage supply systems – Part 1: Principles, requirements and tests	EN IEC 60664-1	2020
-	-		+ AC	2020

EN IEC 60255-27:2025 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60664-3	-	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	-
IEC/TS 60695-2-20	-	Fire hazard testing -- Part 2-20: Glowing/hot wire based test methods - Hot-wire coil ignitability - Apparatus, test method and guidance	-	-
IEC 60695-11-10	-	Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	-
IEC 60825-1	-	Safety of laser products - Part 1: Equipment classification and requirements	EN 60825-1	-
IEC 60990	2016	Methods of measurement of touch current and protective conductor current	EN 60990	2016
IEC 61010-1	2010	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements	EN 61010-1	2010
+ A1 (mod)	2016		+ A1	2019
-	-		+ AC	2019
IEC 61032	-	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	-
IEC 61051-2	2021	Varistors for use in electronic equipment - Part 2: Sectional specification for surge suppression varistors	EN IEC 61051-2	2021
IEC 61180	-	High-voltage test techniques for low-voltage equipment - Definitions, test and procedure requirements, test equipment	EN 61180	-
IEC 61869-6	-	Instrument transformers - Part 6: Additional general requirements for low-power instrument transformers	EN 61869-6	-
IEC 61869-10	-	Instrument transformers - Part 10: Additional requirements for low-power passive current transformers	EN IEC 61869-10	-
IEC 61869-11	-	Instrument transformers - Part 11: Additional requirements for low-power passive voltage transformers	EN IEC 61869-11	-
IEC 62151	-	Safety of equipment electrically connected to a telecommunication network	-	-



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INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Measuring relays and protection equipment –
Part 27: Product safety requirements**

**Relais de mesure et dispositifs de protection –
Partie 27: Exigences de sécurité des produits**

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NORME INTERNATIONALE

**Measuring relays and protection equipment –
Part 27: Product safety requirements**

**Relais de mesure et dispositifs de protection –
Partie 27: Exigences de sécurité des produits**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MEASURING RELAYS AND PROTECTION EQUIPMENT –**Part 27: Product safety requirements**

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;
- 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.

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.

MEASURING RELAYS AND PROTECTION EQUIPMENT –

Part 27: Product safety requirements

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.

IEC 60085, *Electrical insulation – Thermal evaluation and designation*

IEC 60127-1, *Miniature fuses – Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links*

IEC 60255-1, *Measuring relays and protection equipment – Part 1: Common requirements*

IEC 60255-26, *Measuring relays and protection equipment – Part 26: Electromagnetic compatibility requirements*

IEC 60352-1, *Solderless connections – Part 1: Wrapped connections – General requirements, test methods and practical guidance*

IEC 60352-2, *Solderless connections – Part 2: Crimped connections – General requirements, test methods and practical guidance*

IEC 60417, *Graphical symbols for use on equipment*. Available at: <http://www.graphical-symbols.info/equipment>

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC 60529:1989/AMD1:1999

IEC 60529:1989/AMD2:2013

IEC 60664-1:2020, *Insulation coordination for equipment within low-voltage supply systems – Part 1: Principles, requirements and tests*

IEC 60664-3, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution*

IEC TS 60695-2-20, *Fire hazard testing – Part 2-20: Glowing/hot-wire based test methods – Hot-wire coil test method – Apparatus, test method and guidance*

IEC 60695-11-10, *Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods*

IEC 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

IEC 60990:2016, *Methods of measurement of touch current and protective conductor current*

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 61032, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 61051-2:2021, *Varistors for use in electronic equipment – Part 2: Sectional specification for surge suppression varistors*

IEC 61180, *High-voltage test techniques for low-voltage equipment – Definitions, test and procedure requirements, test equipment*

IEC 61869-6, *Instrument transformers – Part 6: Additional general requirements for low-power instrument transformers*

IEC 61869-10, *Instrument transformers – Part 10: Additional requirements for low-power passive current transformers*

IEC 61869-11, *Instrument transformers – Part 11: Additional requirements for low-power passive voltage transformers*

IEC 62151, *Safety of equipment electrically connected to a telecommunication network*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN